STATE OF GEORGIA CONSTRUCTION MANUAL

MASTER FLOW DIAGRAM

1.1 Background

1.2 Purpose

1.3 History

1.4 Key Stakeholders

1.5 Manual Organization, Use and Modifications

Agency Strategic Plan and/or Master Plan

Executive Level Information Order of Magnitude Budget Risk Factors

Baseline Project Definition Refined Budget COBS Data

3.4 Supplemental Consultants

3.4.1 Consultant Assistance

Capital Asset Transfer

Performance Metrics Costs Function Sustainable Operation

Asset Preservation Maintenance Enhancements Energy Efficiency

2.1 Introduction

2.2 Identification

2.3 Initial Planning

2.4 Funding Request

Needs Assessment

Needs Assessment

Needs Assessment

External & Internal Influences

External & Internal Influences

External & Internal Influences

3.1 Introduction

3.2 Team Selection

3.3 Final Project Definition

3.5 DESIGN-BID-BUILD

3.5.1 Design

3.5.2 Bid & Award

3.5.3 Pre-Commence-Ment

3.5.4 Construction

3.6 CONSTRUCTION MANAGEMENT (CM/GC)

3.6.1 Design

3.6.2 Pre-Construction

3.6.3 Component Change Order and GMP

3.6.4 Construction

3.7 DESIGN-BUILD

3.7.1 Pre-Construction

3.7.2 Component Change Order and GMP

3.7.3 Construction

3.8 Contract Closeout

4.1 Introduction

4.2 Move-in and Preparation for Operations

4.3 Start-up and First Year Operations

4.4 Future Year Operations

Punchlist

Equipment and Furniture Installation

Staff Training

Systems Testing

Protocols, Policies & Procedures

PM System

Emergency Plan

Warranty

Maintenance

Project Closeout

Project Audit

PM Program

Building Modifications

Equipment Replacement

Modernization

Appendix One: Introduction

Appendix Two: Project Development

Appendix Three: Project Implemen-tation

Appendix Four: Occupancy

Appendix Five: Glossary of Terms

SECTION ONE: **INTRODUCTION**

SECTION TWO: **PROJECT DEVELOPMENT**

SECTION THREE: **PROJECT IMPLEMENTATION**

SECTION FOUR: **OCCUPANCY**

SECTION FIVE: **APPENDIX**

STATE OF GEORGIA CONSTRUCTION MANUAL

PRINCIPLES & PRACTICES OF PLANNING, DESIGNING, AND CONSTRUCTING BUILDINGS FOR THE STATE OF GEORGIA



MFC

State of Georgia Construction Manual

Third Edition

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Georgia State Financing & Investment Commission

Board of Regents of the University System of Georgia

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CONTENTS

Preface xxviii

SECTION ONE: INTRODUCTION 1

CHAPTER 1.1: BACKGROUND 1

CHAPTER 1.2: PURPOSE 3

CHAPTER 1.3: HISTORY 4

CHAPTER 1.4: KEY STAKEHOLDERS 9

A. Agency 10

A1. Client Agency 10

A2. Using Agency or Facility Manager 10

B. GSFIC 10

C. Owner 10

D. State Review & Regulatory Agencies 11

E. Design Team 11

E1. Design Professional 11

F. Construction Team 11

F1. Construction Professional 11

CHAPTER 1.5: MANUAL ORGANIZATION, USE, AND MODIFICATIONS 12

A. Modifications to the Manual 13

B. Online Feedback Form 14

MFC

SECTION TWO: PROJECT DEVELOPMENT..... 15

CHAPTER 2.1: INTRODUCTION 15

A. Introduction to Project Development 15

B. The State of Georgia Capital Outlay Funding..... 17

B1. The State of Georgia Capital Outlay Funding 17

B2. The State of Georgia Capital Outlay Funding Process 18

C. Georgia State Financing and Investment Commission 22

C1. The Financing and Investment Division 23

C2. The Construction Division 23

D. Project Development Process Flow Chart 28

E. Project Development Checklist 27

F. Developing Internal Agency Funding Requests..... 29

G. Assistance Completing the Project Development Phase..... ...29

MFC

H. Defining Project Development..... 30

CHAPTER 2.2: IDENTIFICATION PHASE…….....32

A. Strategic Planning 33

B. Facility Master Planning 34

C. State Property Officer 36

D. Final Project Identification..... 37

D1. New Facility (New construction or purchase of facility) 37

D2. Renovation of Existing Space 37

D3. Lease Space 38

CHAPTER 2.3: INITIAL PLANNING PHASE 39

A. Objective 40

B. Scope, Techniques, and Resources of Initial Planning..... 40

B1. Benchmarking 41

B2. Creation of Agency Project Teams.....41

B3. Use of Professional Consultants…….....41

C. Initial Planning Activities and Documentation…..... 42

C1. Executive Summary 43

C2. Project Identification and Background Information.....45

C3. Program Scope and Agency Requirements 45

C4. Management Plan, Funding Plan, and Development Schedule 48

C5. Special Design Criteria and Performance Requirements 49

C6. Technology 51

MFC

C7. Furniture, Fixtures and Equipment (FF&E) 51

C8. Site Selection and Analysis 52

C9. Risk Factors and Contingencies 55

C10. Project Cost Estimates.....56

C11. Total Cost of Ownership and Operation 58

C12. Appendix 58

D. Approvals..... 58

CHAPTER 2.4: FUNDING REQUEST PHASE.....59

A. Objective..... 59

B. Project Funding Request Activities and Documentation..... 60

C. Funding Request Phase Activities and Documentation..... 60

C1. Program Scope and Agency Requirements 61

C2. Special Design Criteria and Performances Requirements.....61

C3. Management Plan, Funding Plan, and Development Schedule 61

C4. Technology 62

C5. Furniture, Fixtures and Equipment (FF&E) 62

C6. Site Selection and Analysis 62

C7. Risk Factors and Contingencies 64

C8. Project Development Cost Estimates 64

C9. Project Funding Plan 68

C10. Total Cost of Ownership and Operation 69

D. Approvals 71

SECTION THREE: PROJECT IMPLEMENTATION.....72

MFC

CHAPTER 3.1: PROJECT DELIVERY METHOD.....72

A. Purpose.....72

B. Project Delivery Options..... 73

B1. Design-Bid-Build 75

B2. Construction Management (CM/GC) 77

B3. Design-Build..... 78

CHAPTER 3.2: TEAM SELECTION..... 80

A. Purpose..... 80

A1. Authorization to Contract 81

A2. Selection Methods 82

B. Selection Procedures..... 86

B1. Selection of Consultants.....86

B2. Selection of Construction Managers (CM/GCs) or Design Builders.....100

B3. Selection of Special Inspection, Material Testing, and Geotechnical Firms…….....113

B4. Additional Procedural Information for Design Professionals 119

B5. Selection of Vendors for Furnishings, Fixtures, Equipment (FF&E)….....120

CHAPTER 3.3: FINAL PROJECT DEFINITION.....125

A. Purpose.....125

B. Objective 126

C. General Criteria..... 126

C1. Final Programming 126

C2. Reconcile Program and Budget.....127

C3. Design Narrative 127

MFC

C4. Management of Project.....127

C5. Project Delivery Method and Funding Sources 127

C6. Special Performance Requirements 128

C7. Sustainable Design 128

C8. Loose Equipment and Furniture, Fixtures, and Equipment 129

C9. Technology 129

C10. Site Analysis 129

C11. Project Construction Budget 129

C12. Total Project Budget.....130

C13. Final Project Definition Report 131

D. Approvals..... 131

CHAPTER 3.4: SUPPLEMENTAL CONSULTANTS.....132

A. Supplemental Consultants 132

B. Geotechnical Engineering, Land Surveying, and Testing Services 133

C. Special Inspections.....133

D. Owners Representative.....133

E. Building Commissioning 134

F. Specialty Consultants.....135

CHAPTER 3.4.1: CONSULTANT ASSISTANCE 137

A. Consultant Assistance 137

B. Owners' Representative 138

B1. The Owner's Representative as Program Manager 138

B2. The Owner's Representative as Executive Administrator 141

MFC

C. Geotechnical Engineering, Land Surveying, and Testing Services 143

D. Building Commissioning 144

E. Specialty Consultants..... 147

F. Commissioning Resources…….148

CHAPTER 3.5: DESIGN-BID-BUILD.....149

A. Forward.....149

SUBCHAPTER 3.5.1: DESIGN PHASE 150

A. The Design-Bid-Build Team 151

B. Owner's Responsibilities 152

C. Design Phase Services.....153

D. Project Start-Up 155

E. Instruments of Service 155

F. Site Evaluation and Planning Services 156

G. Schematic Design Services 156

G1. Concept Design Studies 156

G2. Site Analysis 157

G3. Schematic Design Documents 157

H. Design Development Services 158

H1. Design Development Drawings 158

H2. Outline Specifications 159

I. Construction Documents..... 160

I1. Supplementary General Requirements 161

I2. Specifications..... 161

I3. Working Drawings 161

MFC

I4. Construction Professional's Responsibilities 162

I5. The Project Schedule 162

J. Bidding Documents 162

K. Cost Containment 164

L. Deductive Alternates 165

M. Schedule Management 166

M1. Design Phase Activities 166

SUBCHAPTER 3.5.2: BID & AWARD PHASE.....169

A. Basic Services 169

A1. Bid Opening…….....170

A2. Value Management ….....170

A3. Schedule Management 175

B. Selection of Construction Professional (Competitive Bid) 176

B1. Activities Prior to Advertising the Bid 176

B2. Activities: Advertising To Executed Contract 177

B3. Steps of the Bid Process.....177

SUBCHAPTER 3.5.3: PRE-COMMENCEMENT PHASE 187

A. Basic Services 187

A1. Construction Coordination Meeting.....188

A2. Cost Containment.....189

A3. Schedule Management 189

A4. Computerized Scheduling.....189

SUBCHAPTER 3.5.4: CONSTRUCTION PHASE 191

A. Design Professional Construction Administrative Services 191

A1. Monthly Progress Report 193

A2. Monitoring Construction Professional Performance.....193

A3. Responding to the Construction Professional 193

A4. Evaluation of the Work 193

A5. Certification of Payments to the Construction Professional 194

A6. Submittals.....194

A7. Changes in the Work.....195

A8. Project Completion 195

A9. Additional Services 196

A10. Compensation and Contract Adjustments 196

MFC

B. Construction Services....196

B1. Pre-Construction Meeting....197

B2. Construction Means & Methods....197

B3. Construction Progress Meetings....197

B4. Coordination with Design Professional and Consultants....197

B5. Changes to the Work....197

B6. Changes in Contract Time....202

B7. Determining the Cost to Owner for Changes....202

B8. Overhead and Profit....204

B9. Time....205

B10. Correcting the Work, Inspections, Covering/Uncovering the Work....209

B11. Subcontractors, Trade Contractors, and Suppliers....212

B12. Compensation....213

MFC

B13. Contract Adjustments, Disputes, and Termination....218

CHAPTER 3.6: CONSTRUCTION MANAGEMENT....224

SUBCHAPTER 3.6.1: DESIGN PHASE....226

A. The Construction Management Team....227

B. Owner's Responsibilities....228

C. Design Phase Services....229

D. Project Startup....231

E. Instruments of Service....231

F. Site Evaluation and Planning Services....232

G. Schematic Design Services....232

G1. Concept Design Studies....232

G2. Site Analysis....233

G3. Schematic Design Documents..... 233

G4. Construction Manager (CM/GC) Selection.....234

G5. Partnering 235

H. Design Development Services 236

H1. Design Development Meetings 236

H2. Design Development Drawings 237

H3. Outline Specifications 237

H4. Construction Component Change Order Documents (CCO) (Early Award Construction Packages).....238

H5. Illustrations and Models 238

H6. Statement of Probable Construction Cost.....238

H7. Project Schedule Update 239

H8. Code Compliance Review.....239

MFC

H9. Design Development Approval 239

H10. Design Development Checklist 239

I. Construction Documents 240

I1. Construction Manager's Responsibilities 240

I2. GMP Change Order 241

SUBCHAPTER 3.6.2: PRE-CONSTRUCTION PHASE 242

A. Basic Services 242

B. Management Plan.....244

B1. CM/GC Consultation 245

B2. Coordination Meetings.....246

B3. Schedule Management 246

B4. Cost Containment 247

B5. Partnering....248

B6. Value Engineering and Value Management....248

B7. Constructability & Design Review....254

B8. Quality Control (QA/QC)....258

B9. Safety Management Plan....261

SUBCHAPTER 3.6.3: COMPONENT CHANGE ORDER AND GMP....264

A. Component Change Order....265

B. GMP Change Order....266

B1. Timing of the GMP....267

B2. Submittal Requirements....269

B3. GMP Documents....269

B4. Establishing the Price....269

B5. Cost of the Work....270

B6. Construction Contingency....271

B7. CM/GC Fee....272

B8. CM/GC's Overhead Costs and Expenses....272

B9. Establishing the Date for Material Completion....273

B10. Establishing Liquidated Damages....273

B11. Defining the Scope of Work included in the GMP....273

B12. Review of the GMP....274

B13. Replacement of the GMP with a Lump Sum....276

SUBCHAPTER 3.6.4: CONSTRUCTION PHASE....277

A. Design Professional Construction Administration Services....277

A1. Monthly Progress Report....279

A2. Monitoring CM/GC Performance....279

MFC

A3. Responding to the CM/GC 280
A4. Evaluation of the Work 280
A5. Certification of Payments to the CM/GC 280
A6. Submittals.....280
A7. Changes in the Work.....281
A8. Project Completion 282
A9. Additional Services 282
A10. Compensation and Contract Adjustments.....283
B. CM/GC Administrative Services 284
B1. Pre-Construction Meeting.....284
B2. Construction Means & Methods 284
B3. Construction Progress Meetings 285
B4. Coordination with Design Professional and Consultants.....285
B5. Changes to the Work 285
B6. Changes in Contract Time 289
B7. Determining the Cost to Owner for Changes 289
B8. Overhead and Profit 291
C. Time 292
C1. Commencement, Prosecution, and Completion 292
C2. Overall Project Schedule (Construction Progress Schedule) 292
C3. Monthly Schedule Updates.....292
C4. Damages for Delay, Extensions of Time.....293
C5. Exceptions to General Rule: Compensable Delay 294
C6. Owner-Requested Changes 294

MFC

C7. Other Change Orders (not the fault of the CM/GC) 295

C8. Submission of Claims for Compensation for Delay and Extension of Time.....295

C9. Recovery Schedules 296

D. Correcting the Work; Inspections; Covering and Uncovering the Work.....296

D1. Access to the Work.....296

D2. Notice of Non-Compliant Work 296

D3. Correcting the Work 297

D4. Inspections 298

D5. Covering and Uncovering Work 298

D6. Subcontractors, Trade Contractors, And Suppliers.....299

D7. Compensation 300

D8. Contract Adjustments, Disputes, and Termination 304

MFC

CHAPTER 3.7: DESIGN-BUILD 310

SUBCHAPTER 3.7.1: PRE-CONSTRUCTION PHASE.....312

A. The Design-Build Team 313

B. Owner's Responsibilities 315

C. Design-Builder Services 315

C1. Management Plan.....316

C2. Design Builder Consultation 319

C3. Coordination Meetings.....319

C4. Schedule.....319

C5. Cost Containment 321

D. Design Phase Services 322

E. Project Startup 323

F. Instruments of Service 323

G. Partnering 323

H. Site Evaluation and Planning Services 324

I. Schematic Design Services 324

I1. Concept Design Studies 325

I2. Project Schedules and Updates.....325

I3. Site Analysis 326

I4. Schematic Design Documents 326

I5. Value Engineering and Value Management.....327

J. Design Development Services.....332

J1. Design Development Meetings 333

J2. Design Development Drawings 334

MFC

J3. Outline Specifications 334

J4. Illustrations and Models 335

J5. Statement of Possible Construction Cost.....335

J6. Project Schedule Update.....335

J7. Code Compliance Review 335

J8. Design Development Approval 335

J9. Design Development Checklist 335

J10. Construction Component Change Order (CCO) Documents (Early Award Construction Packages).....335

K. Construction Documents 336

K1. Review of Contractor Documents 336

K2. Design Builder's Responsibilities 336

K3. GMP Change Order.....337

SUBCHAPTER 3.7.2: COMPONENT CHANGE ORDER AND GMP 338

A. GMP Change Order 339

B. Component Change Order 342

C. GMP Documents 344

D. Establishing the Price 344

E. Contingencies 345

E1. Design Contingency 345

E2. Construction Contingency 345

F. Design Builder's Fee 346

G. Design Builder's Overhead Costs and Expenses 346

H. Establishing the Date for Material Completion 347

I. Establishing Liquidated Damages 347

J. Defining the Scope of Work Included in the GMP 347

MFC

K. Review of the GMP 348

L. Replacement of the GMP with a Lump Sum 350

SUBCHAPTER 3.7.3: CONSTRUCTION PHASE 351

A. Executive Administrator Construction Administration Services 353

A1. Contract Administration 353

A2. Monthly Progress Report.....353

A3. Interpreter of the Documents 353

A4. Certification of Payments to the Design Builder 353

A5. Changes in the Work.....354

A6. Project Completion 354

A7. Additional Services 354

B. Design Professional Services during Construction.....355

B1. Monitoring Design Builder's Performance 355

B2. Responding to the Design Builder 355

B3. Evaluation of the Work 355

B4. Submittals 355

C. Design Builder Construction Services.....356

C1. Pre-Construction Meeting.....356

C2. Construction Means & Methods 356

C3. Construction Progress Meetings 357

C4. Changes to the Work 357

C5. Changes in Contract Time 360

C6. Overhead and Profit 361

MFC

D. Time 361

E. Correcting the Work; Inspections; Covering and Uncovering the Work 365

E1. Access to the Work 365

E2. Notice of Non-Compliant Work 365

E3. Correcting the Work 366

E4. Inspections 367

E5. Covering and Uncovering Work 368

E6. Compensation.....368

E7. Contract Adjustments, Disputes and Termination.....372

SUBCHAPTER 3.8: CONTRACT CLOSEOUT.....377

A. Project Completion 377

B. Material Completion 378

B1. Notice of Readiness for Inspection for Material Completion 380

B2. Deliverables Required for Material Completion.....381

B3. Occupancy by Owner/Using Agency 384

B4. Transfer of Asset 385

C. Final Completion 385

C1. Notice of Readiness for Interim Inspection for Punch List Completion …….....385

C2. Notice of Readiness for Final Inspection 386

C3. Final Completion of the Design Professional Contract 387

C4. Final Project Closeout 387

MFC

SECTION FOUR: OCCUPANCY 388

CHAPTER 4.1: INTRODUCTION 388

A. Material Completion And Project Transfer Reviewed.....389

A1. Material Completion.....390

A2. Project Transfer (Occupancy by Using Agency) 390

B. Partial Occupancy Prior to Full Material Completion4 391

C. Move-In and Preparations for Operations 392

D. Start-Up and First-Year Operations 392

E. Future-Year Operations 392

CHAPTER 4.2: MOVE-IN AND PREPARATIONS FOR OPERATIONS 394

A. Security of Property and Equipment 395

A1. Contractor Access and Security Control Plan 395

A2. Separate Contractor and Vendor Access 397

A3. Securing Agency Property and Staff Access.....397

B. Furniture, Fixtures and Equipment (FF&E) Installation.....397

C. Alternate Use of Space 399

D. Minor Modifications and Supplemental Projects 399

E. Staff Training and Familiarization 400

F. Project Records 402

F1. Record Drawings 402

F2. Operating Instructions, Equipment/Systems Warranties and Guarantees…….....403

F3. Shop Drawings and Submittals.....403

MFC

F4. Certificates, Affidavits, Bonds and Capital Cost Accounting 403

F5. Proper Care and Storage of Project Documents 404

CHAPTER 4.3: STARTUP AND FIRST-YEAR OPERATIONS….....405

A. Facility Protocols and Guidelines.....406

B. Maintenance Program 407

B1. Preventive Maintenance 407

B2. Maintenance Work Order System.....408

B3. Maintenance Service Contracts 409

C. Warranty Administration and Procedures 412

C1. Warranty Coverage and Guarantees 412

C2. Filing and Processing a Construction-Related Complaint 413

C3. Tracking Resolution of a Construction Complaint 415

C4. Filing a Warranty Complaint on Furniture, Fixtures or Equipment (FF&E)……...415

C5. First-Year Inspection for Warranty Items.....415

D. Emergency Situations.....416

D1. Failure of Building Systems (construction related/ no physical damage).....416

D2. Damage to Property and Equipment 416

E. Completion of the construction agreement 416

E1. Interim inspection for punch list completion 417

E2. Permitted Incomplete Work 417

E3. Inspection for Final Completion 418

F. Final Project Closeout.....418

F1. Final Payment to Construction Professional 418

F2. Final Payment to Design Professional 418

F3. Project Budget Closeout 419

MFC

CHAPTER 4.4: FUTURE-YEAR OPERATIONS.....420

A. Performance Audit and Assessment 421

A1. Owner/Using Agency Planning and Programming.....422

A2. Design Professional Services.....422

A3. Using Agency Occupancy and Use 423

B. Maintenance and Operations: Preventive Maintenance Program and Renewal of Maintenance Service Agreements.....423

B1. Audit of Preventive Maintenance Program 423

B2. Maintenance Service Agreements..... 424

C. Building Modifications/Expansions..... 424

D. Major Repairs and Equipment Replacement..... 426

E. Modernization and Upgrades..... 426

GLOSSARY OF TERMS..... 428

PREFACE

As the Third Edition of the State Construction Manual is published, it is appropriate to reflect on the progress that has been made thus far. Until publication of the State Construction Manual in 2008, state agencies planning for capital improvement projects had no one resource to guide them through the difficult process of funding and delivering capital projects in the State of Georgia. Similarly, design and construction professionals working on State projects had nowhere to turn for guidance on general principles and procedures applicable to capital improvement projects. This lack of guidance led to problems developing, funding and delivering projects.

The State Construction Manual ("SCM") was designed to be a guide to the capital construction process in Georgia. This manual was written and verified by the most authoritative governmental sources in the field of capital construction in Georgia and the most reputable architectural, design, construction, and consulting professionals in the State. The SCM aims to provide resources, clarify details and educate readers in most matters concerning capital construction in Georgia. The SCM generally describes processes and procedures that are applicable to General Bond Obligation bond funded construction projects. Although there are a few cases that fall outside the scope of this manual, the majority of these requirements for the development, implementation, and occupancy of capital construction projects using the Design-Bid-Build, Construction Management and Design-Build delivery methods are addressed herein.

The SCM provides invaluable information regarding the capital construction process in Georgia. The members of the Georgia General Assembly also recognize the value of the SCM. In 2009, Georgia General Assembly mandated that "All state agencies, authorities, departments, commissions, boards, and similar entities shall adhere to the policies and procedures contained in the State Construction Manual for project management and procurement of, and contracting for, design, construction, and other project related professional services for all state owned buildings in Georgia funded by state bonds or other state revenue." O.C.G.A. 13-10-3(c).

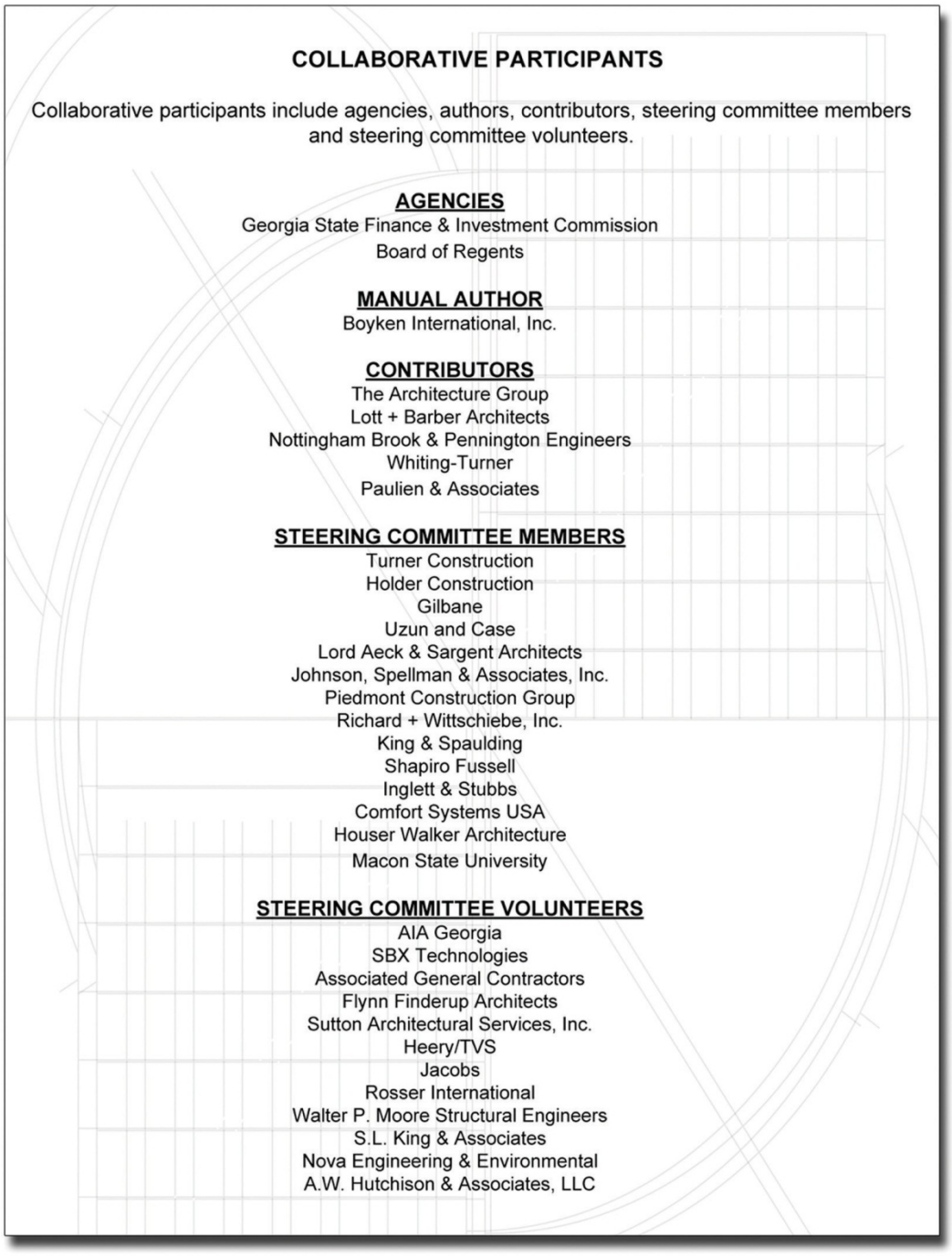
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Although the publication of the First Edition of the SCM was a huge step forward, our work was not complete. The SCM was designed to be enhanced and updated regularly to reflect changes in laws and procedures and evolving industry standards.

I have worked closely with the members of the SCM Editorial Review Board to bring you this updated and enhanced Third Edition. I would like to thank the members of the ERB and the Working Committees for all the hard work and dedication it took to create this Third Edition. Of course none of this would be possible without the work of those who participated in drafting the First and Second Editions.

In an effort to be "green," this Third Edition is being published in electronic format only and is available at http://www.scm.georgia.gov/. On this page you will also find a link for feedback on the SCM. I welcome your comments and suggestions. With your help, we will make the Fourth Edition of the SCM even better.

Janet Wix
Editor



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Figure 1: List of Collaborative Participants for 1ST Edition

Section One: Introduction

Chapter 1.1: Background



In January of 2005, Governor Sonny Perdue issued an executive order and the General Assembly supported the development of a state construction manual. This executive order was derived from recommendations submitted by the Commission for a New Georgia in which both the **Georgia State Finance & Investment Commission (GSFIC)** and the Office for Facilities of the **Board of Regents (BOR)** of the University System of Georgia participated. To this end, the Board of Regents and the GSFIC Construction Division elected to combine resources to develop a manual/reference site titled *The State of Georgia Construction Manual* (SCM). A team of private consultants led by Boyken International, Inc. and a steering committee consisting of industry leaders collaborated in support of the GSFIC/Board of Regents to help guide this joint effort.

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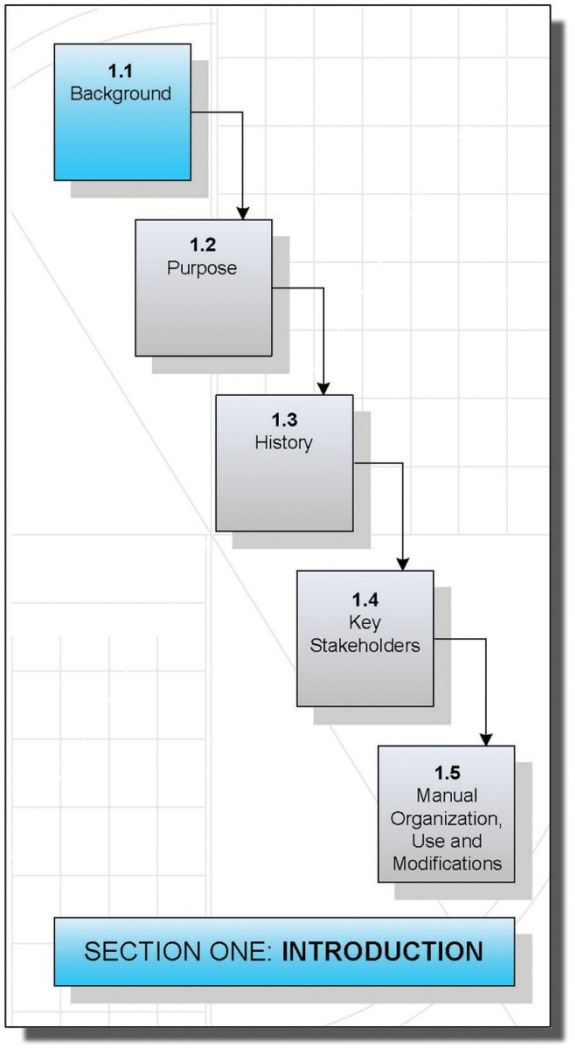
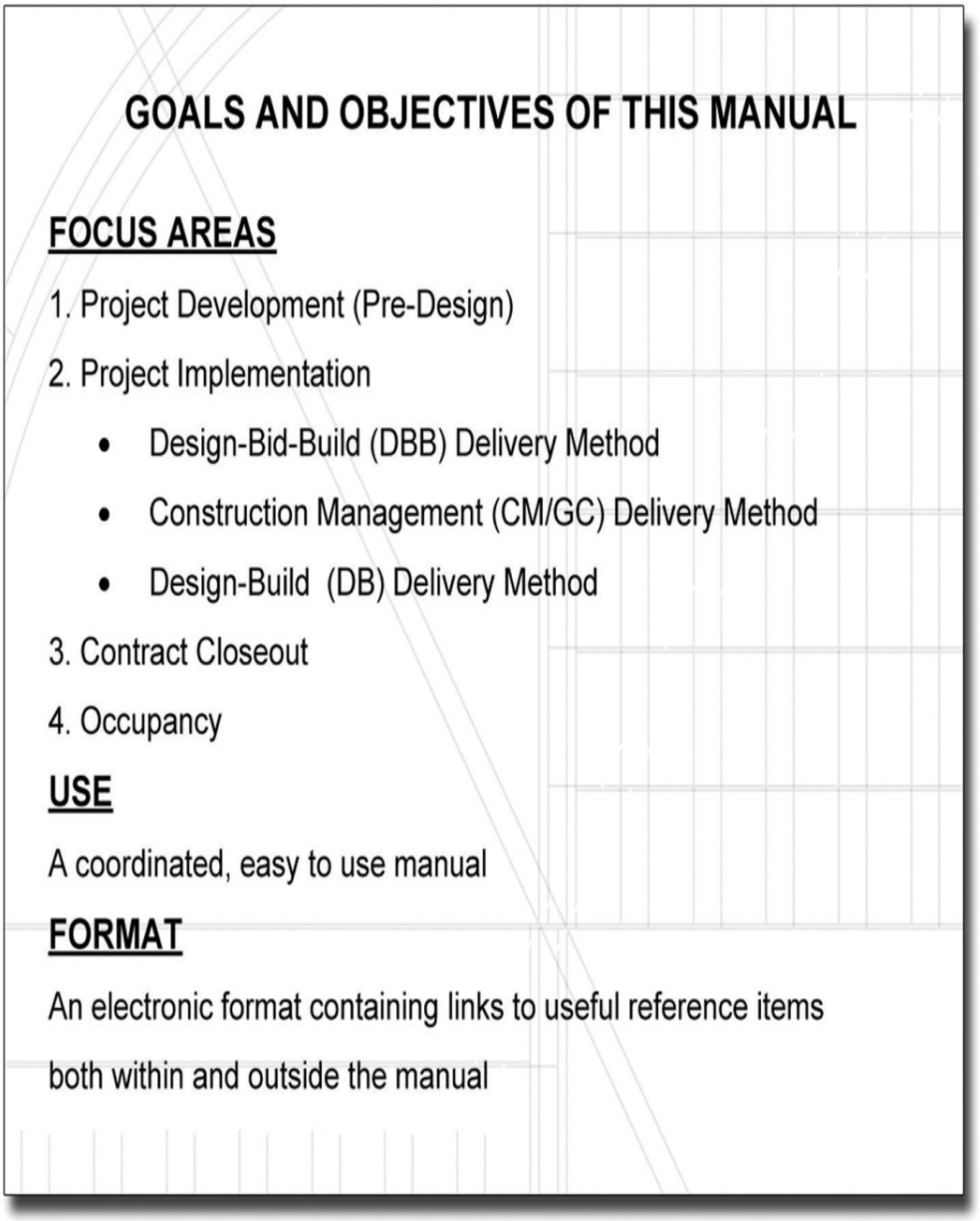


Figure 2: Manual Introduction Flow Diagram

The goal of the joint mission was to create a superior state construction manual based on a collaborative process by soliciting input and obtaining consensus for change from a variety of users.



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Figure 3: GOALS AND OBJECTIVES OF THIS MANUAL

In addition to this collaboration, the authors formulated the content of the SCM with input and feedback from representatives of various state entities and the design, construction, and consulting community. The authors collected this information via regional meetings, charrettes, work sessions, steering committee meetings, and electronically posted documents. Existing processes and documents were critiqued, and new content was identified and developed.

Prior to this initiative, a considerable amount of quality work existed in the form of contracts, selection procedures, and guidelines. This pre-existing work has been electronically linked throughout this SCM, along with new information developed specifically for this manual. All the information and data within the SCM will be updated and modified regularly in accordance with the procedure and timeframes set forth in SCM Chapter 1.5: Modifications to the Manual. As new material and resources are developed, they will be reviewed and analyzed by the steering committee, as appointed by GSFIC/Board of Regents, and incorporated into the structure that constitutes the SCM.

Section One: Introduction

Chapter 1.2: Purpose



The purpose of the SCM is to capture and make easily available, in one location, the best practices for planning, designing, building, delivering, and receiving facilities for use by Georgia State entities. The print State Construction Manual and the online State Construction Manual's documents and resources collate and sometimes replace an array of guidelines, standards, procedures, and reference documents that have grown and evolved in an ad hoc fashion over the past few decades. The SCM is intended to be a guide to assist State agencies and their users, along with Design Professionals, Special Consultants, and Construction Professionals regarding the processes and procedures for completing capital projects for the State of Georgia.

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This manual is a reference document that will be adjusted, updated, and expanded annually. The SCM provides agency/entity-specific criteria alongside Statewide guidelines, and the SCM serves the Owner, Design Professional, Construction Professional, and User of the projects. The SCM provides both a comprehensive tour of the entire capital projects process and a quick access guide to very specific information needs.

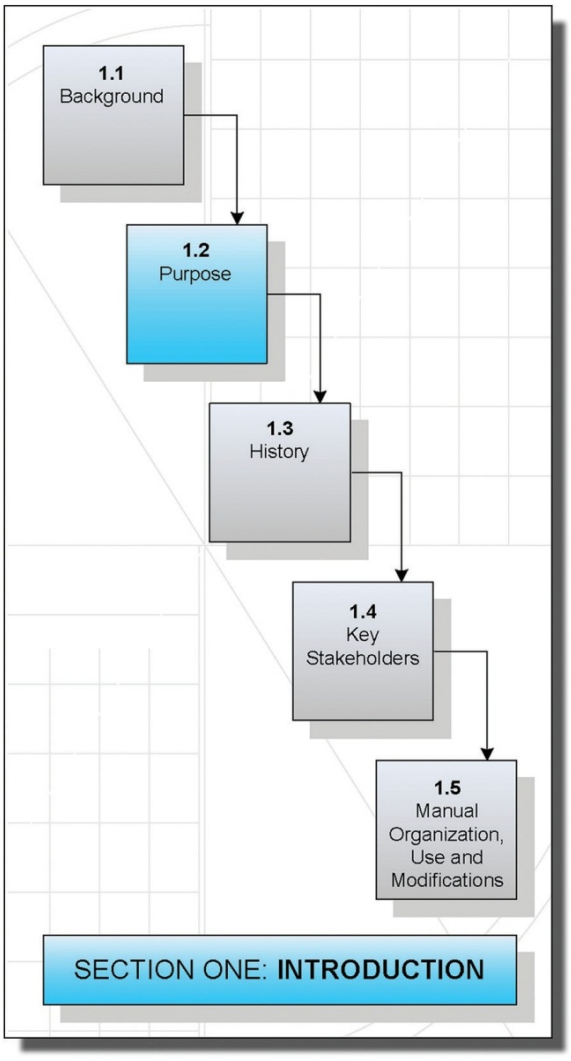


Figure 4: Manual Introduction Flow Diagram

Section One: Introduction

Chapter 1.3: History



In the early 1950s, a critical shortage of classroom space for secondary and higher education presented a challenge to Georgia officials. Tax revenues were good, yet there was seldom enough money to finance the construction of the magnitude needed. Compounding this problem, since the Constitution of the State of Georgia prohibited the State from incurring debt; the necessary construction financing could not be obtained. In order to resolve this problem, State leaders decided to establish public corporations that could sell bonds to finance the cost of constructing various facilities. The facilities would then be leased to State agencies such as the Department of Education and the Board of Regents. The rent received from these State agencies would provide an income stream sufficient to retire the bonds. In most cases, the property itself was also pledged as collateral for the debt. One of the first of these public corporations (called authorities) was the State School Building Authority. A young lawyer with the Department of Education, John E. Sims, was appointed as the director of the new authority.

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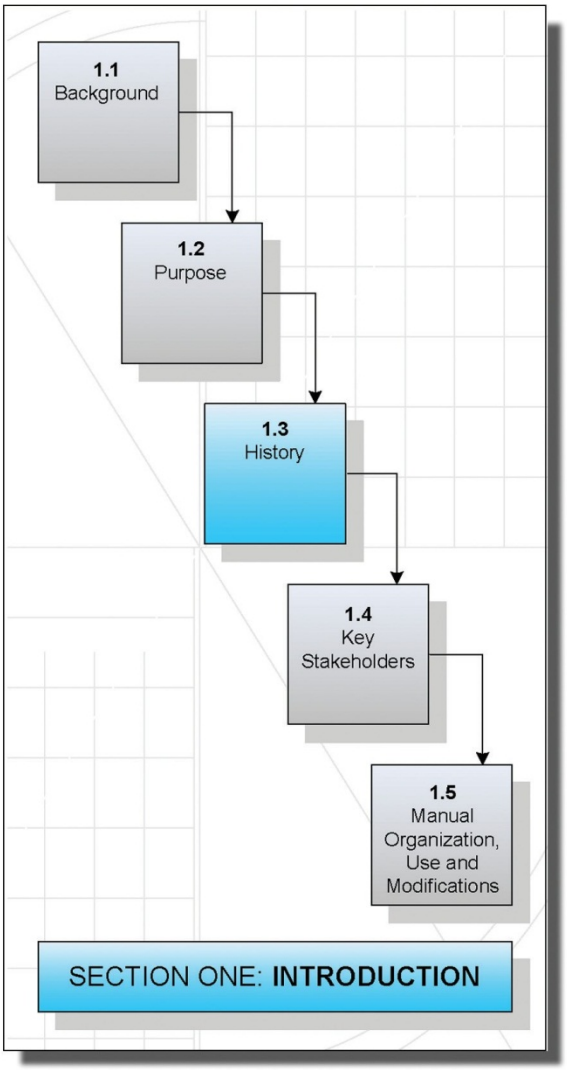


Figure 5: Manual Introduction Flow Diagram

Other authorities created during this time period include the following:

- The State University Building Authority
- The State Office Building Authority
- The Georgia Building Authority (Markets)
- The Georgia Building Authority (Hospitals)
- The Georgia Building Authority (Penal)
- The Jekyll Island Authority
- The Stone Mountain Memorial Association

Although the authority concept is still being used in select circumstances, a constitutional amendment was passed in November 1972 that created the Georgia State Financing & Investment Commission (GSFIC) to permit the State to incur debt and pledge its tax revenue for the retirement of the debt. These debt instruments are called General Obligation (GO) Bonds.

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Most of the policies and procedures for capital construction used prior to the production of this manual were the policies and procedures developed by Mr. Sims. The State School Building Authority and the University Building Authority became the Georgia Education Authority (Schools) (GEA[S]) and the Georgia Education Authority (University) (GEA [U]). Sims served as director of both authorities. When GSFIC was created, the policies and procedures of the GEA(S) and the GEA (U) were adopted by GSFIC, and Sims was appointed director of the Construction Division and executive secretary of the GSFIC. These early policies and procedures serve as a solid foundation upon which the GSFIC continues to build today.

In June of 1996, the Budgetary Responsibility Oversight Committee (BROC), established by the Georgia Legislature, performed a study of the capital outlay process in Georgia and reported the following findings:

1. Facilities are generally not completed within original budgets; total actual construction costs for sixty projects were 11 percent greater than original construction budgets.
2. Almost half of the completed facilities reviewed were not completed within the time given for construction.
3. Completed facilities generally do meet the need of the program or agency for which the facility was built; however, Owners reported problems with construction.
4. No single entity is accountable for the expenditure of capital outlay dollars; the capital budgeting process does not always ensure that funds are available to have a facility constructed when it is needed, and the project accounts are not always “closed out” in a timely manner.

The study included the following recommendations:

1. The State should develop a performance-based budgeting process for the construction of new facilities; consideration should also be given to establishing a Joint Construction Oversight Committee of the General Assembly.

2. Guidelines for the use of alternative management methods should be developed.

3. Funding for all facility design and construction should be centralized, and a centralized contingency fund should be established and used when necessary to award a construction contract.

4. The appropriations bill should be amended to include expiration dates for the use of Capital Outlay Funds, and the responsibility to "close out" project balances in a timely manner should be assigned to GSFIC personnel.

5. Costs for construction management should be identified and tracked at the project level for all projects, and provisions for information technology should be included in the Design Team's work.

Following the initial report of the BROC Committee, there were additional legislative hearings during which several events occurred. The various State agencies involved in the construction process formed the Georgia Association of State Facilities Administrators (GASFA) to provide a forum for discussing problems associated with the design, construction, and maintenance of facilities.

Also, it was discovered that a major portion (but not all) of the cost overruns reported were associated with the fact that the study was conducted during the time in which major construction was underway to accommodate the 1996 Olympic Games held in Atlanta.

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Also, the lack of effective predesign (referred to as ***project development*** in the SCM) prior to the project's approval for design and construction was cited as another cause for overruns in both time and money.

In addition, in July of 1998, the appropriation committee of the House of Representatives established a subcommittee on Capital Outlay and Construction, chaired by Representative Johnny Floyd (the Floyd Committee). The Floyd Committee held eleven hearings and received testimony, suggestions, and recommendations from State agency personnel, representatives of the private sec- tor, and organizations such as the **Associated General Contractors (AGC)**, the **American Institute of Architects (AIA)**, the **Consulting Engineers Council (CEC)**, and **GASFA.**

Based on these hearings, testimony, suggestions, and recommendations, the Floyd Committee made the following recommendations:

1. The General Assembly and the Governor should establish a central oversight and executive authority to be responsible for ensuring a rational approach to capital outlay and construction issues. A sensible way to accomplish this end would be to expand the duties of the **Georgia State Financing & Investment Commission (GSFIC)**, on whose board sits the Governor, the Lieutenant Governor, the Speaker of the House of Representatives, the State Auditor, the Attorney General, the Director of the Office of Treasury and Fiscal Services, and the Commissioner of Agriculture.

2. The Governor's Office of Planning and Budget (OPB) should develop guidelines for planning, programming, and predesign budgets in consultation with the GSFIC, GASFA, and State agencies. The OPB should issue these guidelines for mandatory use by all State agencies and authorities.

3. To advise both the GSFIC and the OPB in their duties as described in recommendations one and two, the State should create a Capital Advisory Council, drawn substantially from private industry.

4. To assert the proper prerogative of the legislative branch, this study committee respectfully recommends that the Chairman of Appropriations consider establishing a formal appropriations subcommittee on Capital Outlay.

5. It was recommended that the General Assembly develop a *Capital Predesign Fund*, established initially in the amount of five million dollars, to finance the cost of planning, programming, and predesign.

6. The GSFIC and the Department of Administrative Services (DOAS) should jointly develop a Statewide construction manual. This manual should provide guidelines concerning the scope, cost, and delivery of State construction projects. The General Assembly should appropriate $100,000 of GSFIC funding to begin this two-year project. Private industry representatives have already pledged assistance and should be regarded as indispensable partners with the State in this effort.

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7. The State should authorize the GSFIC to collect, consolidate, and disseminate construction project information on a quarterly basis and provide reports showing the status of State construction projects costing $250,000 or more.

8. DOAS should have an appropriation of $100,000 to develop a construction project contract evaluation program. This program will provide for evaluation of the performance of construction and Design Professionals. The General Assembly will then expect DOAS to provide a full report to the legislature during the following session concerning the cost of implementing the proposed plan.

9. The General Assembly should appropriate $50,000 to the Georgia Building Authority (GBA) to begin implementation of a *helpdesk* resource, providing contract administration assistance and for addressing common facility issues. This service would be provided to agencies on an *as requested* basis.

10. The study committee expresses general support for House Bill 217 of 1999 requiring an inventory of all State buildings.

Although some of the recommendations of both the BROC Committee and the Floyd Committee have not been adopted, many are addressed by this document.



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Section One: Introduction

Chapter 1.4: Key Stakeholders



Before successfully embarking on a State capital construction project, it is essential to gain an understanding of the key stakeholders involved in the development and construction procurement process. It is also essential to understand and take into consideration the impact that the State's budget and funding cycle has on a project. The various chapters of this manual will explain the development and construction procurement process including the State budget cycle. The stakeholders will be addressed here. To define the key stakeholders as well as their roles and responsibilities is crucial in any project, but in the State's capital construction process, it is essential. When the Construction Division of the Georgia State Finance & Investment Commission administers the Construction Contract, certain terms have contractual meaning.

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On most State capital layout projects, there is no single entity or person responsible for the entire project from concept to occupancy. Instead, various parties assume this role depending upon the agency involved, the funding source, and the phase of the project.

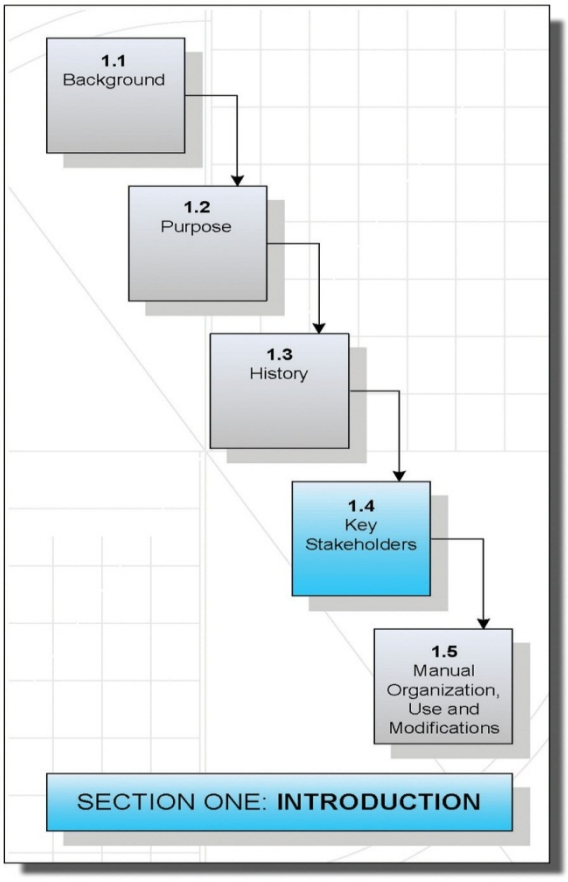


Figure 6: Manual Introduction Flow Diagram

For the sake of simplicity, in the following discussion it is assumed that the GSFIC will administer the construction contract and use the terms familiar to the process. In many cases, a single entity will perform one than one role, but roles exist nonetheless.

As relates to State construction projects, the stakeholders are defined as follows:

A. AGENCY

Agency is a general term used to refer to any office, department, division, bureau, board, commission, authority, or other unit of government. Only as needed for clarity will this manual differentiate between the client agency and the Design Professional as defined below.

A1. Client Agency

The *client agency* is the State agency that requests the appropriation funding for the project and is responsible for its proper completion, e.g., the Board of Regents. The client agency will be responsible for various reviews and approvals during the course of the project.

A2. Using Agency or Facility Manager

The *Using Agency or Facility Manager* is the party that will actually manage and operate the finished project. This party may include several entities, including the maintenance team assigned to operate the building, the actual tenants of the building and/or the division of the agency to which the building is assigned, e.g., the College of Computing at the Georgia Institute of Technology. The client agency will be responsible for various reviews and approvals during the course of the project.

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B. GSFIC

The *GSFIC* is the State agency that is responsible for all services related to the acquisition of public debt and for monitoring and managing all construction and related matters resulting from the issuance of public debt. This manual will differentiate between the GSFIC Financing Division and the GSFIC Construction Division only as needed for clarity. The GSFIC Design Review Section is responsible for various reviews and approvals during the course of the project.

C. OWNER

The *Owner* is a general term for the legal State entity that owns a building and/or property associated with a project. The owner is also a contractual term for the party responsible for the contract, e.g., the GSFIC typically is responsible for and signs the Construction Contract on State General Obligation (GO) Bond-funded projects.

D. STATE REVIEW AND REGULATORY AGENCIES

The *State review and regulatory agencies* are responsible for various reviews and sign off on projects and/or the plans and specifications, e.g., the State Fire Marshall, the Department of Natural Resources, and other agencies dependent on the type of project.

E. DESIGN TEAM

The *Design Team* is a general term for the party responsible for translating the project program requirements into the drawings and specifications necessary for completion of the project. This includes the various architects, engineers, and other consultants required to properly design the project and administer the construction.

E1. Design Professional

The *Design Professional* is an entity with a primary/contractual responsibility for translating the project program into the drawings and specifications necessary for the completion of the project and with professional responsibility for the design.

F. CONSTRUCTION TEAM

The *Construction Team* is a general term for the party responsible for completing the physical construction of the project in accordance with the plans and specifications. This team includes the myriad of subcontractors involved in the projects.

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F1. Construction Professional

The *Construction Professional is* the entity with a primary/contractual responsibility for completing the physical construction of the project in accordance with the plans and specifications.

The degree of interaction among the various stakeholders will vary dramatically depending on the type of project, the phase of the project, and the party involved. It is essential to remember that, with the number and complexity of the entities involved, each must recognize who the decision maker is. Since the ultimate decision maker will change throughout the process and will depend largely on the decision to be made, diligence by all parties is warranted.

Agencies with ongoing capital programs may have established lines of communication and levels of delegated authority for decision making that are clearly understood. If not, or to ensure clarification, during the project it is appropriate to use organizational charts and other management tools that clearly communicate decision-making authority to make certain that all stakeholders are informed.

Section One: Introduction

Chapter 1.5: Manual Organization, Use, and Modifications



The State Construction Manual presents a one-source document that contains a considerable amount of useful content developed for various Web sites by State agencies. In addition, this manual incorporates new material developed specifically to complement this pre-existing material. Further, the appendix files are an invaluable source of documents and guides specific to the project development, implementation, and occupancy processes. The manual and reference material have been developed by the most experienced and successful professionals in their content area from both the State government and private sector with an emphasis on "best practices."

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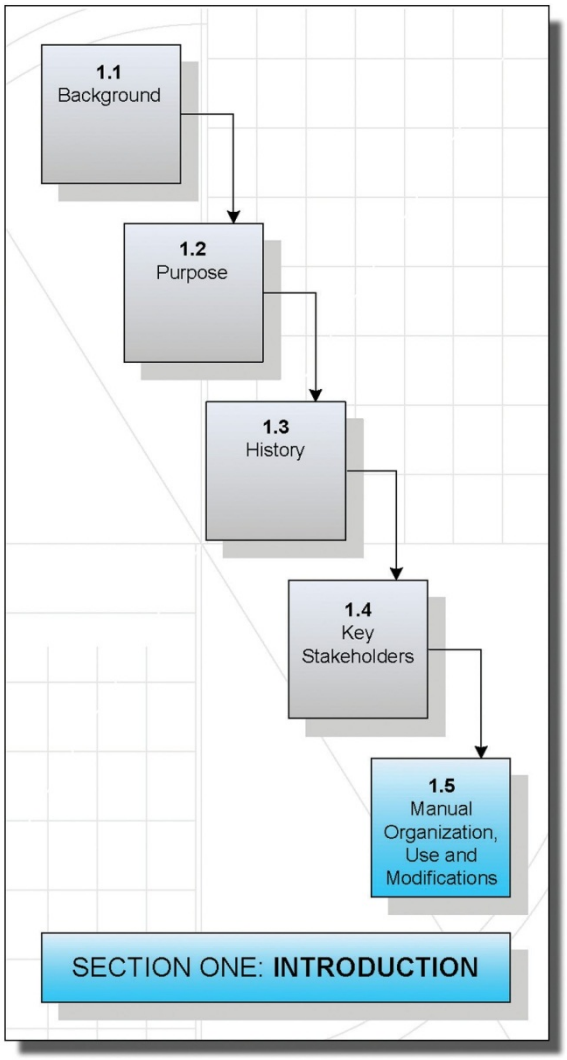


Figure 7: Manual Introduction Flow Diagram

Following this Section One: Introduction, there are three sections in the order of the typical project sequence:

- Section Two: Project Development (Predesign)
- Section Three: Project Implementation (Team Selection, Design-Bid-Build [DBB]), Construction Management [CM/GC], Design-Build [DB], and Contract Closeout)
- Section Four: Occupancy

The main sections are divided into chapters and in a few sections, subchapters. For ex- ample, ***Section Two: Project Development*** begins with an introduction to the project development process (Chapter 2.1) that pertains to the legislative requirements for any agency seeking capital construction funds. ***Chapters 2.2: Identification, 2.3: Initial Planning*** and ***2.4: Funding Request*** explains both the requirements that guide the development of data for a funding request and the best practices for an actual funding request. Other sections, such as ***Section Three: Project Implementation*** contains ***Chapter 3.5: Design-Bid-Build*** *that* begins with Subchapter 3.5.1: Design.

MFC

At the beginning of every chapter and subchapter of the State Construction Manual, flowcharts give readers clear graphic indicators of where the section is located in relation to the surrounding chapters. The headers of each page also give the readers their location in the manual.

A. MODIFICATIONS TO THE MANUAL

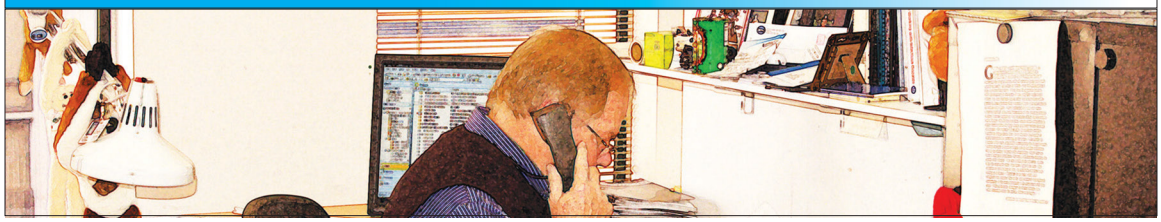
The SCM site will be updated/modified regularly in accordance with the procedure set forth within this subsection. This SCM has been prepared with the assumption that revisions and enhancements will occur. It is intended that the latest version of the document will be available online at our Web page. The Appendix of the SCM contains a form that will allow users to suggest modifications to the manual.

Important feedback will occur at various intervals and modifications to the manual will be announced through the GSFIC. At any given time, you may request changes to the manual by accessing and completing the Request to Change the State Construction Manual. As new material and resources are developed, they will be reviewed by the GSFIC Steering Committee as appointed by the GSFIC/Board of Regents. New information and accepted changes will be incorporated into the SCM.

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Section Two: Project Development

Chapter 2.1: Introduction



A. INTRODUCTION TO PROJECT DEVELOPMENT

The Project Development Phase comprises the identification, initial planning, and funding request activities that an agency must address as a new capital project is envisioned. Although each State agency may develop projects by using different procedures and on different schedules, in projects that are considered for State funding, certain basic principles and procedures of *planning* are required to ensure public money is spent wisely, judiciously, and in support of long-term State strategic goals.

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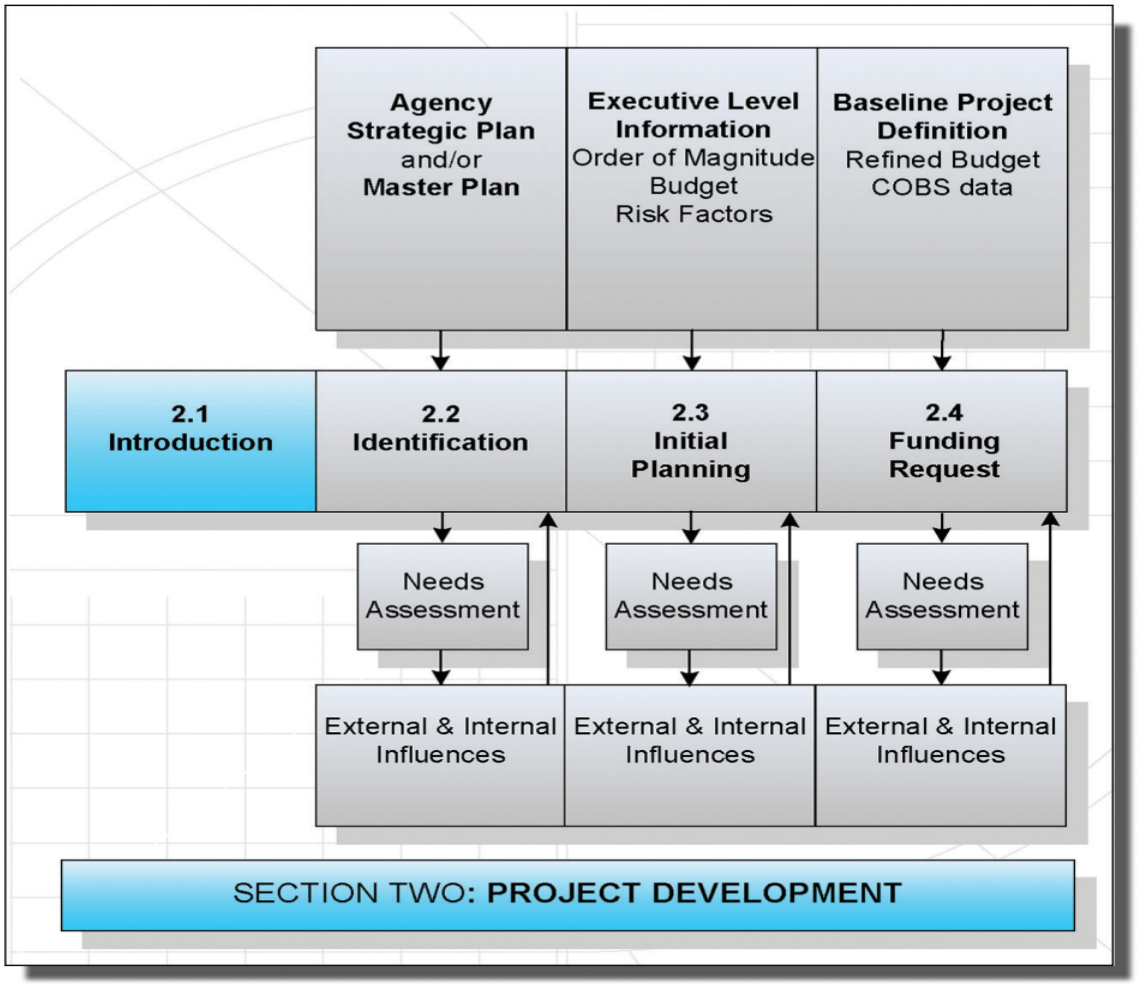


Figure 9: Project Flow Diagram

Further, when State funds are requested, the project development process is completed and coordinated with the agency's annual budget request submitted to the Office of Planning and Budget (OPB). This process precedes the convening of the Georgia General Assembly where all requests for State funds are considered.

As described in this section, the principles of effective project development could apply to any project—large or small, public or private Ownership, and regardless of the source of funds. Effective project development results from the principles of strategic planning and the determination of capital projects to fit the needs established by such plans. With this foundation and justification, the prospects of funding approval are greatly enhanced.

The project development process is the result of an agency's ongoing mission or implementation of new strategic planning objectives including legislative directives. The process usually begins with the following:

1. Analysis of the program or activity to determine a need for additional space, new facilities, major renovation and/or rehabilitation;

2. Identification of a project to meet that need;

3. Initial planning to estimate the size, scope, and cost of the project;

4. Prioritization of that project in relation to other agency needs.

MFC

The project development process provides all parties involved in the funding steps (State agency, Office of Planning and Budget (OPB), and executive and legislative branches of State government) with a level of information necessary to make proper and appropriate recommendations and decisions. Capital construction funding represents a significant investment not only in initial construction cost, but also future continuation costs of Ownership, and operations and maintenance.

At the conclusion of the Project Development Phase and upon funding approval of the project, the activities associated with the Project Implementation Phase commence. During the Project Implementation Phase, the project is further defined, developed, and constructed with the engagement of Design Professionals, Construction Professionals, and consultants. Significant project funds are expended during this phase, which underscores the importance of the Project Development Phase: *to ensure the appropriate expense of public dollars.*

The objective of SCM Section Two: Project Development is to provide a guide that assists the agency to develop the data necessary to validate the project and acquire necessary funding. Once funding is received, the process then continues with SCM Section Three: Project Implementation and the commencement of professional design and construction services.

B. THE STATE OF GEORGIA CAPITAL OUTLAY FUNDING

B1. THE STATE OF GEORGIA CAPITAL OUTLAY FUNDING

Capital Outlay includes the broad category of expenditures related to the acquisition, construction, development, extension, enlargement, or improvement of land, waters, property, highways, roads, buildings, structures, equipment, demolition or facilities. Capital outlay includes renovation and rehabilitation to enhance and improve existing facilities and structures, and also includes extraordinary non-routine actions for major corrective repairs or to extend expected service life. Capital outlay projects are primarily facility related and generally represent large non-recurring dollar expenditures outside the ability of agencies and departments to fund within their operating budgets. The term capital outlay also applies to various state programs that provide funding, loans, or grants for projects to local government entities, including local school systems and counties.

Although primarily funded by general obligation bonds, capital outlay projects may also be funded from other various funding sources, including cash (i.e., general revenues), consistent with state statutes. State agencies do not identify the source of state funds for requested capital projects. This is determined as funding recommendations are developed and ultimately identified by the General Assembly.

Many activities related to keeping facilities operational and in good order involve necessary and significant expenses that are not generally considered capital outlay. For example, preventive maintenance activities and routine repair actions are generally considered part of the state agency's Regular Operating Expenses. As a general rule state agencies submit projects costing less than $100,000 with useful service lives of less than five years through their annual operating budget, and not as a Capital Outlay project.

MFC

The primary focus of the State Construction Manual is on projects for major new construction or major renovations in support of state agencies. It is important to note that state agencies also receive capital outlay funding for agency-managed projects. These agency-managed projects can comprise a sizable portion of the state's capital improvement program. As an example, the Governor's FY2010 Budget recommendation included over $225,000,000 in potential agency-managed work. Agency-managed projects usually encompass major repairs, renovations and improvements to existing facilities, major equipment replacements, or campus infrastructure improvements. Although similar to GSFIC-managed projects, agency-managed projects have different contractual mechanisms and procedures than those presented in the State Construction Manual. Typical agency-managed projects can range up to $5,000,000 in total construction cost per project. Because of the smaller scale of agency-managed projects, their processes and contractual requirements are usually abbreviated as compared to GSFIC-managed projects. With the exception of the Board of Regents, most agency-managed projects currently are governed by DOAS Procurement Policies, which currently limits construction projects to competitive bid (Design-Bid-Build project delivery method).

B2. THE STATE OF GEORGIA CAPITAL OUTLAY FUNDING PROCESS

State agencies generally request and receive capital outlay funds through annual requests to the Governor through the Office of Planning and Budget (OPB). However, some agencies also receive funds for capital outlay projects from public/private partnerships, athletic associations, foundations, and other sources.

In the case of full or partial funding from the State, agencies request funds using OPB's Capital Outlay Budget System (COBS). OPB reviews and recommends the appropriate action to the Governor prior to each legislative session to create what is known as the *Governor's Budget Request*.

The *Appropriations Act* is the official budget bill introduced in the House of Representatives and may or may not contain all of the items in the "Governor's Budget." Through the legislative process involving the House, the Senate, and the Governor, a final appropriations act is approved and signed into law, which includes any approved capital outlay projects. The legislature meets annually in January to adopt legislation and approve the budget (referred to as the "regular budget") that will take effect on July 1 of that year (The State fiscal year is July 1-June 30.).

During the development of the "Governor's Recommended Budget," recommendations are made concerning whether capital outlay projects will be considered for funding by direct cash, the sale of bonds, or a combination of both. Factors considered in these decisions include current interest rates, bond ratings, authorized debt levels, current debt amount, current cash assets, and other short and long-term financial considerations.

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A common practice also employed by the General Assembly is to amend the current fiscal year budget (the budget which ends on June 30th) during the annual legislative session in January. Capital outlay projects (including primarily bond-funded projects) are sometimes advanced to the *amended/supplemental budget* rather than the subsequent year's *regular budget* based on the urgency of the project and if revenues, interest conditions, and other financial factors are more favorable to the State at that time.

The disbursement of approved funds for capital outlay projects follows certain stipulations:

1. The disbursement of "cash" funds is initiated by requests from the agencies through the Office of Planning and Budget to the State Treasury. Funds approved in the *Amended Budget* are generally available in the fourth quarter of the current fiscal year. Funds approved in the *Regular Budget* are not available until July 1, at the start of the next fiscal year (*July 1-June 30)* and may be distributed on a lump sum, monthly, or quarterly basis.

2. Projects approved by the sale of bonds follow a more complex procedure. The action of the legislature approves the sale of bonds and appropriates the necessary cash funds for the first fiscal year of debt service on the approved bonds. A new process begins with the Georgia State Financing & Investment Commission (GSFIC) whose responsibilities include the assembly, advertisement, and selling of multiple bond packages (issues) to correlate with project schedules and bond market conditions. Bonds are sold at different times of the year in different term

denominations (five, ten, and twenty-year bonds). Many projects are included in one bond issue. Projects may be divided over two or more bond issues depending on size, market conditions, project schedule, and other financial factors. Only when bonds are sold and cash deposited in the State Treasury are funds deemed to be available for the commencement of bond-funded projects.

No State agency can execute contracts or commit State funds for any purpose unless (1) the agency has the authorization to expend funds for such purpose, and (2) funds are available when the obligation is made. Certain initial planning activities may require funds that are generally provided by the agency prior to formal project funding and may, under certain stipulations, be eligible for reimbursement from future project funds when approved.

Agencies seeking: (1) payment of eligible project-related expenses from general obligation proceeds and/or (2) payment of Agency project-related expenditures incurred before the availability of general obligation bond proceeds must comply with the Georgia State Financing and Investment Commission's February 28, 2006 policy entitled "Requests for Payment from General Obligation Bond Funds." Agencies must request a "Notice of Declaration of Intent" and obtain approval and issuance of same from the Director of GSFIC's Financing and Investment Division prior to any expenditure. The complete policy can be found on the GSFIC website.

Capital Outlay Project Timeline

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The typical timeline from Project Development to a Construction Proceed Order will vary greatly per project, depending upon Agency, State and Legislative approvals for the project, the sale of bonds funds for the approved projects, and the complexity or effort for the design of the project, but it is useful to consider a general timeline for Capital Outlay projects.

The following process assumes all contracts (design and construction) are awarded after the timely sale of bond funds for those activities.

TYPICAL CAPITAL OUTLAY PROJECT TIMELINE DESIGN BID BUILD

Time	Annual Cycle	Activity
varies 8+ months	Jul FY1 – May FY1	Agency identifies/prioritizes potential Capital Outlay Projects
	May FY1 – Aug FY2	Agency prepares Project Development information for COBS (Capital Outlay Budget System) submission
	Sep FY2	Agency submits COBS data to OPB
4 months	Sep FY2 – Dec FY2	OPB assists the Governor's Budget Recommendations
4-6 months	Jan FY2 – Apr FY2	Governor presents Budget Recommendations to State Legislature
	Apr FY2 – Jun FY2	Governor signs Appropriation Bills (may line item veto individual bond-funded projects)
5-12 months	Jul FY3	Agencies prioritize approved project funding requests and submit to GSFIC for bond sales
	Sep FY3	GSFIC sells bonds (bonds are sold at different times of the year and funding for projects may be split over multiple bond sale packages)
MFC	Sep - Nov FY3	GSFIC issues bond commitment letters
	Oct FY3	Advertise Design Professional Services contract
	Dec FY3	Award Design Professional Services contract
varies 10-12 months	Nov FY3	Design Professional starts project design
3-4 months	Sep FY4	Advertise/Award Construction Professional DBB contract
	Dec FY4	Issue Construction Notice to Proceed

41+ months cummulative timeframe (This does not reflect total project construction.)

note: shown in Fiscal Years

TYPICAL CAPITAL OUTLAY PROJECT TIMELINE CM/GC

Time	Annual Cycle	Activity
varies 8+ months	Jul FY1 – May FY1	Agency identifies/prioritizes potential Capital Outlay Projects
	May FY1 – Aug FY2	Agency prepares Project Development information for COBS (Capital Outlay Budget System) submission
	Sep FY2	Agency submits COBS data to OPB
4 months	Sep FY2 – Dec FY2	OPB assists the Governor's Budget Recommendations
4-6 months	Jan FY2 – Apr FY2	Governor presents Budget Recommendations to State Legislature
	Apr FY2 – Jun FY2	Governor signs Appropriation Bills (may line item veto individual bond-funded projects)
5-12 months	Jul FY3	Agencies prioritize approved project funding requests and submit to GSFIC for bond sales
	Sep FY3	GSFIC sells bonds (bonds are sold at different times of the year and funding for projects may be split over multiple bond sale packages)
	Sep - Nov FY3	GSFIC issues bond commitment letters
MFC	Oct FY3	Advertise Design Professional Services contract
	Dec FY3	Award Design professional Services contract
10 -12 months	Nov FY3	Design Professional starts project
	Feb FY3	Advertise/Award Construction Professional Contract
	July FY4	Construction Starts (initial Component Change Order)

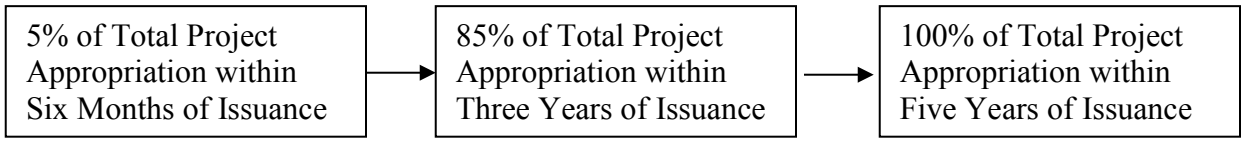
36+ months cummulative timeframe (This does not reflect total project construction.)

note: shown in Fiscal Years

C. GEORGIA STATE FINANCING AND INVESTMENT COMMISSION

The Georgia State Financing and Investment Commission (GSFIC) was created by State Constitutional Amendment to oversee the sale of bonds (public debt) by the State; to perform all services relating to the issuance, investment, and accounting of proceeds from sale of bonds; and to perform or assist in the construction of projects financed in whole or part through the sale of bonds for State agencies and authorities.

GSFIC is statutorily charged with responsibility for ensuring application of bond proceeds for their authorized purpose, ensuring bond proceeds are invested in public property of the State, and ensuring the tax exempt status of general obligation bonds is not compromised while the bonds are outstanding. On March 24, 2005, GSFIC adopted a policy entitled "General Obligation Bond Proceeds Expenditure Policy." In order to comply with the Internal Revenue Code, projects must meet critical expenditure milestones benchmarks, shown below:



MFC

In addition, bond funds may not be used for certain expenses. In a November 20, 2000 memorandum, the Department of Law issued guidance stating that bond funds may only be used for capital expenditures and not operational expenditures customarily funded through annual budget appropriations in a general appropriations act. Capital expenditures are funds spent for the acquisition of a long-term asset which will be used beyond the fiscal year in which it was acquired and are permanent or of non-disposable nature. Operational expenditures are items used in an agency's continuing, day-to-day business, such as personal services of agency employees and supplies and materials ordinarily needed to operate an agency.

GSFIC has also adopted a policy entitled "*Public Private Partnership*" to detail the requirements that must be met when bond funds are used in public/private partnerships since bond funds may not be used for private activities.

In all cases, the legislative intent of the scope of the capital project should be considered when determining if the expenditures are reimbursable from general obligation bonds. The ultimate decision if payments are deemed reimbursable will be made by GSFIC on a case by case basis. For more detailed information on these and other policies applicable to General Obligation Bond Funds, please refer to the GSFIC website and the State Accounting website.

The Georgia State Financing and Investment Commission consists of the following seven members:

- The Governor (chairman and chief executive officer)
- The Lieutenant Governor (vice-chairman)
- The State Auditor (secretary and treasurer)
- The Speaker of the House of Representatives
- The Attorney General
- The Commissioner of Agriculture
- The Director of the Office of Treasury and Fiscal Services

The Commission has two statutory divisions: the Financing and Investment Division and the Construction Division. Each division is administered by a director who reports directly to the Commission.

C1. The Financing and Investment Division

The GSFIC Financing and Investment Division performs services related to the issuance of public debt, including advising State agencies on questions about financing public capital outlay projects with General Obligation (GO) Bonds. More specifically, the division is responsible for the planning, scheduling, selling, and delivery of General Obligation (GO) Bonds and the investment and accounting of all proceeds from the issuance of such bonds. Other important duties include preparing the State Debt Management Plan, monitoring agencies' expenditures of bond proceeds for compliance with federal tax regulations, and retiring State debt early by purchasing General Obligation Bonds on the open market.

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C2. The Construction Division

The GSFIC Construction Division performs Project Administration Services to agencies for capital projects funded in whole or part from the sale of bonds. These services include initial planning, programming, design, construction, equipment and furnishings procurement, and warranty administration. Within the GSFIC Construction Division, the following departments perform the following services regarding capital projects:

Administration: Provides advice to agency directors on GSFIC services, initial planning and funding options, construction delivery methods, scheduling, and other capital project issues.

Construction Services: Assigns project managers and professional staff to assist agencies with Project Development Services such as project planning, programming, and funding requests. Performs reviews of Construction Documents for constructability and code compliance including State Fire Marshal reviews (Deputy State Fire Marshal) of the Life Safety Code and fire sprinkler system design.

Provides Project Management Services, directly administering construction and Design Professional contracts on behalf of the "Owner." Provides Warranty Administration Services after project completion.

Procurement Services: Provides advice to agencies on procurement methods for selection of project team members, which include professional consultants; Design Professionals; Construction Professionals (general contractor, construction manager/general contractor [CM/GC], and Design Builder); and Executive Administrators. Performs or assists agencies in the selection procedures for contractors and consultants and provides current procurement and contracting forms, templates, and legal documents. Performs procurement services for Furniture, Fixtures and Equipment (FF&E) and coordinates installation with completed capital projects.

Legal Services: Provides legal assistance to all GSFIC departments and agencies on capital projects administered by GSFIC and coordinates resolution of issues, maintenance of contract forms and documents, and coordination with the State Attorney General's Office.

State ADA Coordinator: Serves as a technical resource for interpretation and compliance of the Americans with Disabilities Act (ADA) to the public, government agencies, Construction Professionals, Design Professionals, and others.

Many agencies have internal staff resources to administer capital projects. The GSFIC Construction Division will work with these agencies to propose a coordinated plan of project administration that best fits the needs and desires of the agency while maintaining accountability for the disbursement of bond funds. For additional information about the GSFIC Construction Division, refer to the GSFIC website.

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D. PROJECT DEVELOPMENT PROCESS FLOW CHART

The Project Development Process Flow Chart (Figure 10) was created to reflect the processes most commonly followed by the majority of State agencies. The flow chart graphically represents the steps involved in the Identification, Initial planning, and Funding Request phases of Capital Project Development and the sources of information, executive and administrative input, and influences pertaining to each step.

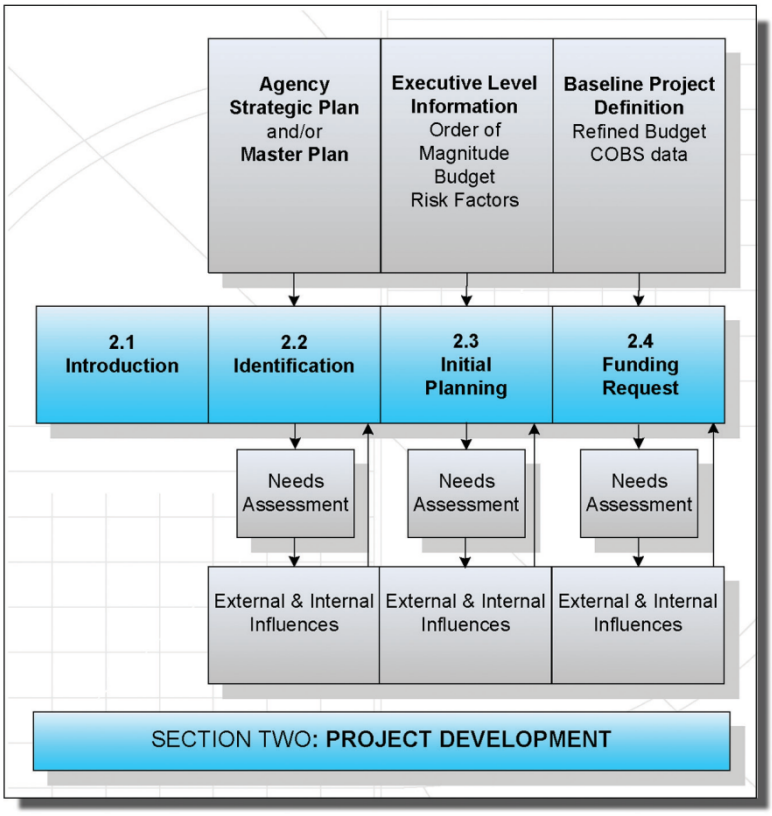


Figure 10: Project Development Process Flow Chart

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This process correlates with the organization of the State Construction Manual, which is organized to reflect the linear process of a typical capital construction project. Agencies move the project through the appropriate phases of Project Development (planning) into Project Implementation (design and construction), and end with Occupancy. These activities anticipate that an agency's annual Capital Outlay Funding Request will follow a defined process with required Project Development Documentation to facilitate accurate and timely review and approval.

On the Process Flow Chart, the term *needs assessment* refers to the agency's process of continuously identifying and reviewing the need and priority for the project against other projects, programs, and competing or conflicting influences, both internal and external that are unique to each agency. The *external and internal influences* are agency, State, public, and community interests, including political and economic factors along with timing and coordination with other program objectives. Results of this assessment at each step of the project development process are integrated into the refinement of the project plan.

Sources for information and direction at each step are derived from the Agency Strategic Plan and correlating Facility Master Development Plan, agency executive strategies and objectives, and guidance from the Office of Planning and Budget (OPB).

The process is inherently flexible to accommodate projects of varying type, size, complexity, cost, and use as well as programmatic changes. For projects of high priority and accelerated schedule, an agency may choose to expedite the multiple phases of the project development process by incorporating the data into the requirements outlined in *SCM Chapter 3.3: Final Project Definition* using the subsequent documentation and data as the basis for the funding request.

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E. PROJECT DEVELOPMENT CHECKLIST

The Project Development Checklist (Figure 11) has been designed to provide guidance and assistance in identifying, organizing, and tabulating general criteria and information that is generally required to define the project and provide information for its timely approval. The *Project Development Checklist* incorporates the guidelines and requirements for completion of *SCM Chapter 2.3: Initial Planning* and *SCM Chapter 2.4: Funding Request* in SCM Section Two: Project Development.

PROJECT DEVELOPMENT CHECKLIST

PROJECT:

ACTIVITIES AND DOCUMENTATION:
This checklist is a list of general criteria for due diligence activities. Refer to SCM narrative for details about each item. The column furthest to the right indicates the general sequence of Project Development as follows:

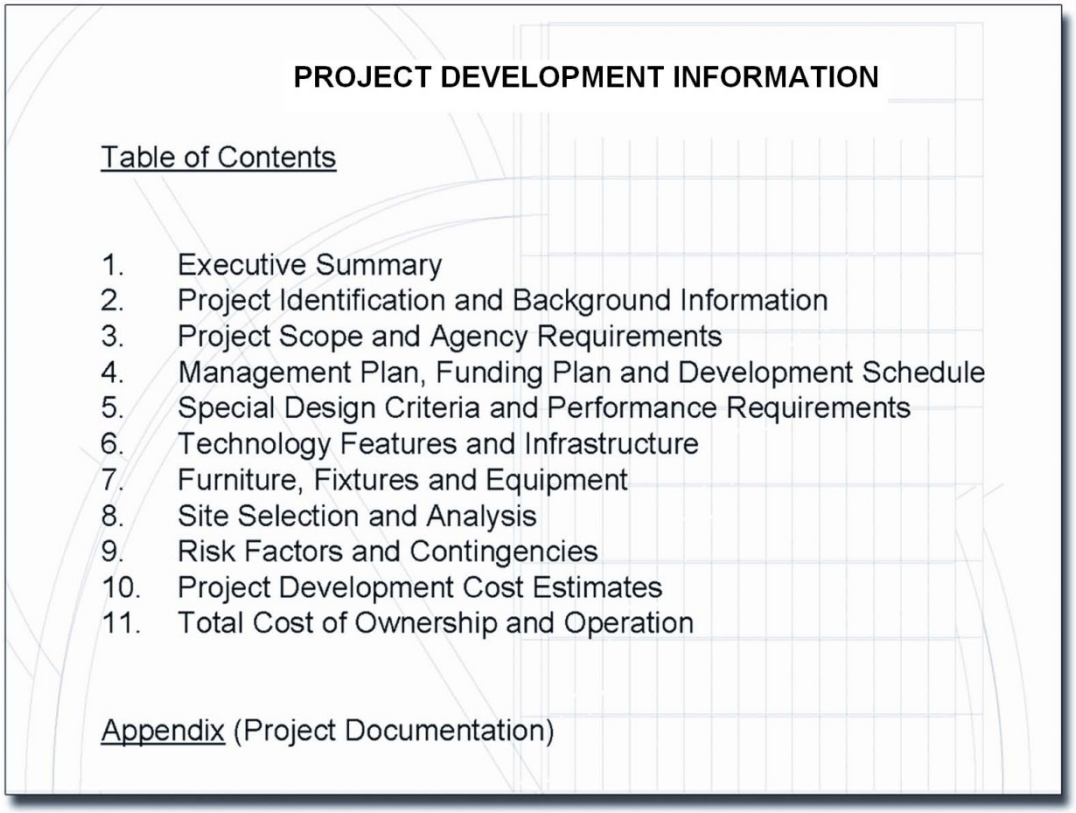
Req'd = Required or Update	**Opt** = Optional for this phase	**Agency Notes:**	**Initially Required at Phase:**
1. EXECUTIVE SUMMARY			
a. Agency Name			**2.2 Initial Planning**
b. Project Identification			**2.2 Initial Planning**
c. Project Size/Scope and Location			**2.2 Initial Planning**
d. Functions and performance characteristics of project			**2.2 Initial Planning**
e. Statement of project need and justification			**2.2 Initial Planning**
f. Correlation of need and objectives to agency strategic plan			**2.2 Initial Planning**
g. Summary of Project Development costs			**2.3 Funding Request**
h. Key milestone dates of development schedule			**2.3 Funding Request**
i. Project administration and delivery plan			**2.3 Funding Request**
j. Contingencies, issues, and risks			**2.2 Initial Planning**
k. Agency/facility contact information			**2.2 Initial Planning**
2. PROJECT IDENTIFICATION AND BACKGROUND INFORMATION			
a. Correlation to Agency Strategic Plan			**2.2 Initial Planning**
b. Reference to Agency Facility Master Plan			**2.2 Initial Planning**
c. Description of project			**2.2 Initial Planning**
d. Statement of project need and justification			**2.2 Initial Planning**
e. Alternatives considered			**2.2 Initial Planning**
f. Effect of project on surrounding facilities, programs			**2.2 Initial Planning**
3. PROJECT SCOPE AND AGENCY REQUIREMENTS			
a. List of core programs			**2.2 Initial Planning**
b. List of administrative and support spaces			**2.2 Initial Planning**
c. Storage for support and core functions			**2.2 Initial Planning**
d. Special ancillary space needs			**2.2 Initial Planning**
e. List of major specialized space needs (labs and similar space needs)			**2.2 Initial Planning**
f. Listing of infrastructure support spaces			**2.2 Initial Planning**
g. Space relationships of core programs and support facilities			**2.2 Initial Planning**
h. Calculation of total net and total gross square foot area			**2.2 Initial Planning**
i. Exterior grounds and site requirements			**2.2 Initial Planning**

Figure 11: Sample Project Development Checklist

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As with any checklist, the intent is to provide "due diligence" advice and reminders of the steps and areas of information skilled planners will explore when planning a new capital project. Not all categories may apply to all projects and some subjects specific to a project may be missing. The checklist is an aid, not a substitute for critical thinking and analysis as a new project is planned.

The agency will prepare the Project Development Information (See Figure 12), which is a *working document* addressing the items in the *Project Development Checklist. This document will be carried forward through each phase of Project Development with information updated or added as required to keep the document current.* A new document is not recreated at each step.



PROJECT DEVELOPMENT INFORMATION

Table of Contents

1. Executive Summary
2. Project Identification and Background Information
3. Project Scope and Agency Requirements
4. Management Plan, Funding Plan and Development Schedule
5. Special Design Criteria and Performance Requirements
6. Technology Features and Infrastructure
7. Furniture, Fixtures and Equipment
8. Site Selection and Analysis
9. Risk Factors and Contingencies
10. Project Development Cost Estimates
11. Total Cost of Ownership and Operation

Appendix (Project Documentation)

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Figure 12: Sample Organization of the Project Development Information

F. DEVELOPING INTERNAL AGENCY FUNDING REQUESTS

As more fully discussed in *SCM Chapter 2.4: Funding Request*, agencies will submit their formal request for Capital Project Funding to the Office of Planning and Budget using the Web-based Capital Outlay Budget System (COBS). This interactive system for submission of the following fiscal year's agency funding requests includes requirements for submission of projected requests for the next four fiscal years.

The COBS program contains templates, worksheets, and a user guide to assist agencies with this important phase of Project Development. Generally, agencies will have their own internal procedures and worksheets for the identification, development, and internal review of capital projects prior to the agency's formal request for State funds. These procedures should follow the principles, concepts, and guidelines contained in the *SCM Chapter 2.2: Identification*, *SCM Chapter 2.3: Initial Planning* and *SCM Chapter 2.4: Funding Request* of *SCM Section Two: Project Development*.

The Board of Regents has developed a comprehensive Capital Project Funding Request Worksheet and accompanying User Guide that correlate to these principles and are provided in the SCM as a guideline for agencies. These worksheets include most if not all of the information needed when the agency formally enters future project request on the COBS system (current and four-year future projection).

One advantage of the online COBS program is that agencies may electronically transfer files that support their Capital Project Funding request directly to the Office of Planning and Budget. Agency project worksheets, programming and cost studies, picture electronic files (Excel, Word, PDF, and similar files) can all be uploaded and attached to the agency's request, thus eliminating the need for separate transmittal and duplication.

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G. ASSISTANCE COMPLETING THE PROJECT DEVELOPMENT PHASE

The level of consultant support required by an agency to complete any of these phases will be based on the complexity of the project, the demands of the project on the agency and the expertise and capabilities of the agency's staff. Some agencies involved in continuous Capital Project Development are well equipped to perform these tasks and/or manage professional consultants.

Other agencies with limited project experience, project management staffing, or familiarization with State building procedures should seek professional assistance.

Generally, agencies contract professional consultants in the following situations:

- Services cannot be performed by in-house staff.
- Services cannot be performed within the desired schedule.
- Capable staff that could perform the services cannot be assigned to this project without adversely affecting the performance of an agency.

Professional consultants are available to assist in strategic planning, facility/site evaluations, project programming, cost estimating, and many other areas in addition to the basic Design Professional and Executive Administrator functions during project implementation (design and construction).

As stated in *SCM Chapter 2.1(C): Initial Planning* above, the *GSFIC Construction Division* is available and should be consulted for advice on contracting consultants and coordinating GSFIC's services during project development. The GSFIC can advise on initial planning and funding options, construction delivery methods, scheduling, and other capital project subjects. The GSFIC has experienced professional project managers on staff who can be assigned during the Project Development Phase of an agency project to assist with the administration of professional consultants and other project management tasks.

For additional assistance, the GSFIC also maintains copies of standard contracts for Construction Professionals (general contractors), Design Professionals, Executive Administrators, and special consultants on the *Construction Agreements* Web page of the GSFIC Website.

Professional consultants considered should have expertise and experience in the project type and familiarization with State building procedures. Information and instruction for consultant selection can be found in *SCM Chapter 3.2: Team Selection*. It is important to note there are strict requirements governing professional services selection procedures. Consultants engaged for preliminary phases of a project cannot simply be awarded a new contract for the later phases of the project without a new public notice and selection procedure.

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It is recommended that the Project Development Checklist be referenced in each consultant contract in the Project Development Phase.

H. DEFINING PROJECT DEVELOPMENT

Project Development is the beginning phase of a project when the activities of programming, site selection and analysis, and other applicable studies are conducted to develop essential information as to size, location, scope, schedule, and projected costs. This information is then used to support and advance the decision-making processes that result in funding approval and project implementation.

Through the project development process, agencies advance projects through the Identification, Initial Planning, and Funding Request Phases.

During each of these phases, correlation with Agency Strategic Plans, Facility Master Plans, and application of internal and external influences refine the plan. Also during this phase, alternatives are explored and priorities established by the agency.

One such influence is the "Energy Efficiency and Sustainable Construction Act of 2008" (O.C.G.A. 50-8-18) which became effective July 1, 2010. The Energy Efficiency and Sustainable Construction Standards for State Buildings in accordance with the Energy Efficiency and Sustainable Construction Act of 2008, serve as a set of instructions for state agencies, design professionals, contractors, and building operators. This Act directs the Department of Community Affairs (DCA) in consultation with the Georgia State Finance and Investment Commission (GSFIC) to adopt policies and procedures as recommended standards for all buildings owned or

managed by the state to be more energy and water efficient, and encourage the use of Georgia-based building materials.

The Georgia Association of State Facilities Administrators (GASFA) will recognize state funded facilities that achieve a Georgia Peach Green Building ratings level, with a formal letter of certification and a plaque.

The overall purpose of the Project Development Phase is to determine and document the following:

- Need for the project;
- Relevance to the agency's mission, Strategic Plan, and Facility Master Plan;
- Project scope (size, space needs, function, and similar attributes);
- Proposed funding;
- Proposed project delivery system (method for construction);
- Estimated project cost and cost of Ownership;
- Proposed Project Development and Occupancy Schedule;
- Site and existing conditions.

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These procedures and requirements for defining a project vary based on conditions such as the complexity, scale, or type of a project. Through the project development process, the agency evaluates a number of services, options and activities, providing documentation that facilitates the review and approval process. This same information is updated and refined in the development of the documentation required in Section Three: Project Implementation and *SCM Chapter 3.3: Final Project Definition*.

SECTION TWO: PROJECT DEVELOPMENT

Chapter 2.2: Identification Phase



During this step of Project Development, the idea for a project begins to take place. A project may be envisioned during initial conception; but at the Project Identification Phase, more critical thinking and planning questions are engaged to refine and focus project objectives and possible solutions before proceeding into initial planning.

The Project Development Flow Diagram below highlights related activities such as the Agency Strategic Plan and/or Master Plan, needs assessment, and external and internal influences, which are considered to be important aspects of the project identification process.

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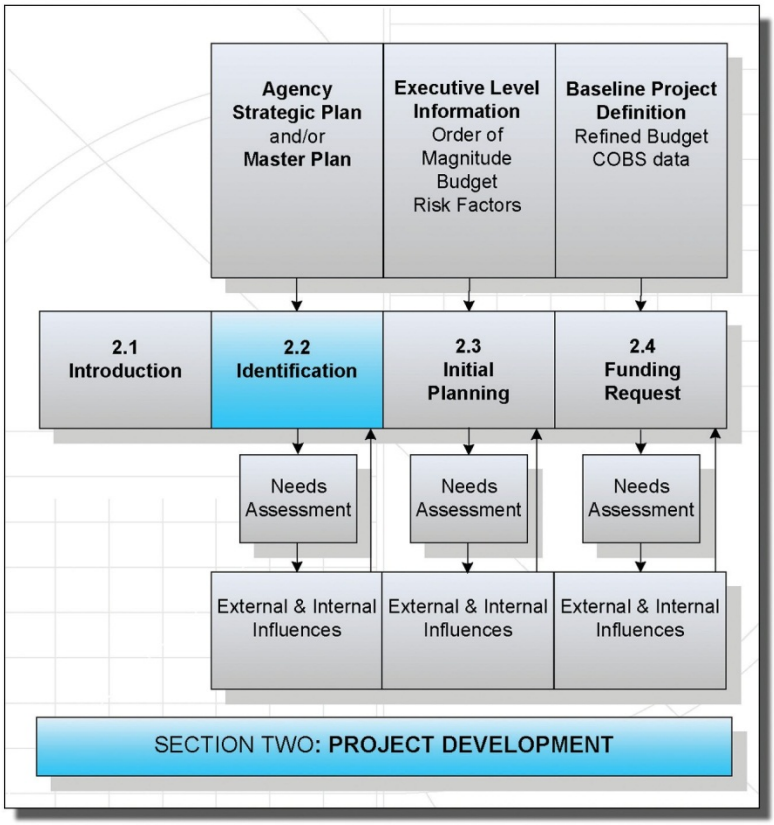


Figure 13: The Project Development Flow Diagram

Strategic planning and (facility or physical) master planning are the basis for well-founded project development in any capital construction program and are considered to be the first steps in identifying data that supports the need for the project.

Agency strategic planning creates the long-range plans that steer an organization toward the goals in the accomplishment of its mission and vision. Physical master planning provides a "roadmap" for the physical development of facilities and properties to support an agency's mission and Strategic Plan.

Physical Master Plans have additional objectives when applied to State of Georgia capital construction and improvement projects. First, in consideration of current State strategic goals to effect both better management and environmental responsibility and when applied to capital construction, these goals would seek to achieve cost-effective constructability, energy and operational efficiencies, sustainable design, care of the environment, and focus on State and agency asset management and accountability. Second, as publicly owned facilities, campuses, and properties, such Physical Master Plans should create a physical environment which is attractive, reflective of the agency's purpose, and complementary to the surrounding community.

A. STRATEGIC PLANNING

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The Budget Accountability and Planning Act of 1993 (OCGA 45-12-175) mandates that State agencies develop strategic plans to encompass a four-year time frame providing the agency and State's decision makers with an organized approach for addressing both the agency's and State's priorities. Such strategic plans focus all activities, programs, and resources towards accomplishment of these goals and ultimate achievement of the agency's mission and vision.

The SCM will not address the in-depth process of developing and producing agency strategic plans. The Office of Planning and Budget (OPB) provides a wide range of information-based services to State agencies for this topic. Within this division of OPB is the whose responsibilities include the implementation of statutory requirements for strategic planning. Leading a cross-agency collaboration effort that includes the Department of Administrative Services (DOAS) and Georgia Technology Authority (GTA), the section develops the State model for strategic planning, writes and disseminates annual guidelines, and when requested, trains agencies on those guidelines. The section may also develop preliminary drafts of the State's Strategic Plan, using policy guidelines outlined by the Governor's staff. The Strategic Planning and Project Management Section provides guidance and assistance to agencies in implementing the Budget Accountability and Planning Act. Section staff provide consultation to agencies on identifying program areas and developing results and performance measures for those programs. Guidelines and information on development of agency Strategic Plans may be found on OPB's Website. Strategic planning is a systematic process wherein the top management of an agency, with the assistance of staff, charts its future course. It begins with reconfirming or updating the agency's *vision.*

This vision may be influenced by the latest State Strategic Plan, legislative directives and initiatives of the Governor. Following a review of the vision, strategic planning is employed to analyze the agency's *mission* and *values* and to assimilate strategic *goals* and *objectives.*

Concurrent with the development of strategies for achievement of these *goals* and *objectives,* agencies employ an *environmental analysis* to scan *external* influences that may affect the Strategic Plan. Areas of interest in performing the environmental analysis (not to be confused with environmental impact study) are the study of the political, economic, demographic, social, and technological factors that can influence an Agency's Strategic Plan.

Also within the Planning, Research, and Evaluation Division of the Office of Planning and Budget (OPB) is the Policy and Program Review Section. This section provides services to agencies on State demographic composition, projections, and basic research. The section conducts program evaluations for agencies, provides extensive and detailed research, and assists in the development of strategies to address specific agency and State needs and responsibilities. This section manages the Bureau of the Census State Data Center Program, of which OPB is the lead State agency. As part of this charge, the division prepares official estimates and projections of Georgia's population by county. Because of this statistical responsibility, the division also provides support for OPB and agencies in a variety of information services and statistical methodologies. Current statistics and information on OPB's *Census Data Program* may be found at the OPB's *Census Data Program* web page.

Internal influences are analyzed by using a strategic planning technique known as the *SWOT analysis.* A SWOT analysis considers strengths, weaknesses, opportunities, and threats. Within an agency's plan, a SWOT analysis may consider both public and private sector factors that may include resource analysis, competition for funding, duplication of programs, and similar issues. Other internal influences may include staffing, resource allocation, agency organization, and reorganization.

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The Strategic Plan describes the future direction of the organization, lists the priorities or areas of focus, and predicts how the organization will grow over the next several years. For example, the identification of strategic initiatives in an academic program that increases grants or contract funding will have implications on the space needed for a specific program or service. The completion of a Strategic Plan will identify and validate the need for additional capital construction activities. Physical space and facility requirements result from the agency Strategic Plan. Agencies refine these requirements during the step that follows strategic planning: *master planning*.

B. FACILITY MASTER PLANNING

The purpose of a Facility Master Plan is to provide detailed direction and guidelines for the physical development of State facilities to support the agency's mission and Strategic Plan. Accordingly, a Master Plan is based upon the mission and Strategic Plan of the organization and is data driven and visionary.

The master planning process, in addition to a comprehensive inventory of existing facilities, utilizes growth projections from the Design Professional's Strategic Plan to make certain the agency has the physical resources and capacity to handle increased growth. Additionally, the plan addresses development of new programs and anticipated growth in the agency's disciplines and responsibilities.

The Facility Master Plan incorporates advances in use of technology and its effect on new program space requirements. Widespread use of the Internet has dramatically changed the physical requirements for service and information centers, numbers and locations of processing centers, and the requirements for facilities common in government services. In academic institutions, *distance learning* is a popular alternative to the traditional classroom environment and is growing significantly. Use of technology in asset management coupled with advances in package delivery and air freight have dramatically changed traditional models of inventory warehousing, and parts and supply distribution. Such developments have widespread implications in terms of the future number of employees and the types of facilities and spaces needed. The master planning process utilizes growth projections, strategic program objectives, technology analysis, and other information to confirm the agency has a complete and coordinated plan for meeting its comprehensive physical needs.

The Facility Master Plan is the projected physical image or reflection of the Agency's Strategic Plan. It focuses on the programs, physical site, and facility development of the agency's centers and campuses. The Facility Master Plan encompasses elements of sound master planning principles including: Campus/ center organization

- Land and building use
- Vehicular pedestrian circulation and alternative transportation opportunities
- Infrastructure
- Open space/green space

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- Relationship to the surrounding community (historic, demographic, political)
- Criteria for site and building design (agency/State/federal)
- Space Utilization
- Energy Reduction

The Facility Master Plan addresses existing facilities to be maintained, renovated, expanded, or declared surplus in addition to proposed new facilities. Accordingly, one of the first steps is a comprehensive and complete inventory of existing site and facility assets.

Within this inventory of existing site and facility assets would be the identification of current facility use; classification of facility age and condition, applicable regulations and restrictive covenants; and other information pertinent to continued use, renovation, redevelopment, or disposal.

Infrastructure capacity at each center/campus would be another important element of the asset inventory.

The Facility Master Plan now begins to apply the physical resources required to support the Agency's Strategic Plan to the available inventory to determine where continued use, renovation, demolition, expansion, new construction, or combinations or alternatives may be required.

Alternatives may include leasing or purchasing new properties, acquiring existing State or agency properties, co-location with another public or private entity, and similar substitutes for new construction. Alternatives may also include a review of the agency Strategic Plan and consideration of changes that may include reorganization, reassignment of programs, or outsourcing.

After the physical needs of the agency are identified, development of a long-range capital program can begin. Conceptual definitions of projects regarding type, size, location, and (order of magnitude) cost estimates are needed to assist in the schedule and prioritization of the capital development program. In this manual, these conceptual definitions are further developed and refined in *SCM Chapter 2.3: Initial Planning*.

Facility master planning should follow the concepts as described in this section, although each agency may develop a specific format applicable to its unique requirements. As a further guide to agencies developing new Facility Master Plans, the Board of Regents has developed the *Physical Master Planning Template©* for use by Institutions of the University System of Georgia. The Board of Regents Master Planning Document may be found at the Board of Regent's website, and it may be used as the basis of the development of a Master Plan at other agencies.

C. STATE PROPERTY OFFICER

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The State Property Officer (SPO) is responsible to the Governor for advice on opportunities to achieve the goal of Statewide capital asset management. The SPO serves as the executive director of the *State Properties Commission (SPC)* and the *Georgia Building Authority (GBA)*.

The duties and services within the office of the State Property Officer relating to an agency's completion of the Project Identification Phase include:

- Maintain a Statewide capital asset management system that has consolidated real property, building, and lease information for State agencies.
- Develop and maintain a centralized listing of comprehensive space needs for all State agencies to include current space and resource utilization, anticipated needs, and recommended options.
- Coordinate and facilitate opportunities to co-locate State facilities with other State, local, or federal entities when appropriate, including negotiation of applicable lease and development agreements.
- Provide assistance to State agencies in the policies and procedures for acquisition of real property and leases of facilities and property through the State Properties Commission.
- Provide advice and assistance to State agencies in analyzing new construction versus renovation, lease versus buy, and other project options.

Agencies should inform the office of the State Property Officer of any proposed site acquisition, new capital construction project, major renovation, or proposed lease of a facility to commence these assistive services and facilitate the mutual coordination and development of the proposed project. The resources within the office of the State Property Officer can be of significant benefit to agencies and were organized to further the efforts of the State to improve its efficiency in the areas of property management and construction.

D. FINAL PROJECT IDENTIFICATION

All proposed projects should be consistent with and directly supported by the agency's mission, Strategic Plan, and Facility Master Plan. Projects may include a new or renovated facility, an infrastructure project, or maintenance/repair of an existing facility. As projects are identified from the Facility Master Plan or other sources and prioritized for initial planning and development, the following questions should be reviewed incorporating current information and the results documented. The best estimates of space and functional needs for the proposed project should also be documented and reconfirmed with agency officials. The office of the State Property Officer should be contacted to assist the agency as needed with this review.

D1. New Facility (New construction or purchase of facility)

- Will the program requirement for space represent a long-term obligation and need for this agency?
- Is there an existing agency facility that can be renovated to achieve the project objectives?
- Can the agency reorganize or reconfigure its existing programs (including out- sourcing) to reallocate space in an existing facility(s) to achieve the project objectives?

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- Is leasing a facility (public or private) an alternative to new construction?
- Is co-location with another government agency in the proposed project area an option?
- Does the agency own suitable land for the project, or is property available for sale in the general area where the project is needed?
- Does the proposed site for the facility have sufficient infrastructure and permitting (EPA/EPD, historic preservation, utilities, access, and similar requirements) capacity to incorporate the proposed project?

D2. Renovation of Existing Space

1. Would renovating existing space correlate to the following master planning principles?
    - Campus/center organization.
    - Land, infrastructure, and building use.
    - Vehicular and pedestrian circulation.
    - Open space/green space.
    - Relationship to surrounding facilities and community.
    - Criteria for site and building design (agency/state/federal).

2. Is the estimated renovation cost effective from both a project cost and total cost of operation as compared to new construction?
3. Can existing programs/functions be relocated during renovation, or can the project be phased to minimize disruptions to programs and avoid construction premiums?
4. Are there potential constructability, code, and accessibility compliance; hazardous materials; or historical concerns or issues in the proposed renovation?
5. Is leasing a facility (public or private) a cost-effective alternative to renovation?

D3. Lease Space

Note: *Agency decisions regarding leasing space must consider both short and long-term advantages and disadvantages to the agency and State. The following questions are examples of items to be analyzed in determining if leasing the space is an appropriate option and in preparing a cost/benefit analysis of lease vs. purchase/new construction:*

- What is the projected term of a lease and program need for the facility?
- Is reasonably priced leased space available in an acceptable location where the program space is needed?
- Is there existing suitable space available in the desired area that can be purchased and renovated?
- Is co-location with another government agency in the proposed project area an option?
- Who provides and what are the estimated costs for utilities, building maintenance, repairs, security, custodial services, grounds maintenance, equipment maintenance, and other services?
- Is parking available and access to public transportation needed and available?
- Does the space have the appropriate technology infrastructure and access to support the desired function of the space?
- Will the space require significant alteration/renovation? If so, will work be performed and/or paid by landlord?
- What is the age of the facility, and are there long-term maintenance issues?
- Are the lease terms favorable?

The results of the Project Identification Phase should be documented in the project file in sufficient detail to support the subsequent Initial Planning and Funding Request Phases. Any deviations or alternatives to the Facility Master Planning Document corresponding to the subject project should likewise be documented in the project file for later review during the Funding Request Phase.

SECTION TWO: PROJECT DEVELOPMENT

Chapter 2.3: Initial Planning Phase



The Initial Planning Phase activities follow those outlined in SCM Chapter 2.2: Identification Phase (See Figure 13) and is where the conceptual definitions regarding the project's general type, size, location, cost, and schedule are further developed, documented, and approved prior to developing information to support the formal requests for funding.

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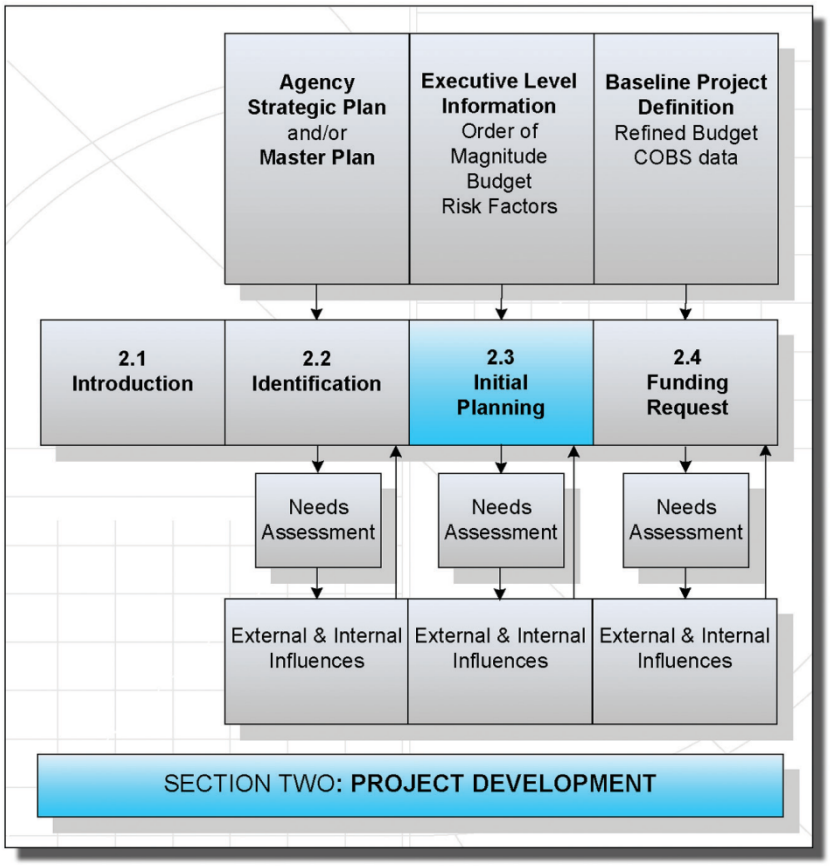


Figure 14: The Project Development Flow Diagram

The Project Development Flow Diagram highlights the more detailed *executive level* information required at this phase including the initial cost information and prioritization of the need for the project in question against other agency projects. The *external* and *internal* influences continue to apply, which may include political and economic factors, plus timing and coordination with other program objectives.

A. OBJECTIVE

The objective of *initial planning* is to provide the agency's decision makers with more detailed information to evaluate the project's merit and priority among other agency projects, resulting in the determination of which projects proceed to the Funding Request Phase (See Chapter 2.4). Additionally, an important objective of this phase is to *confirm* that this identified project is the *best solution* to the agency's need.

B. SCOPE, TECHNIQUES, AND RESOURCES OF INITIAL PLANNING

In consideration of the *executive level* review (incorporating *internal* and *external* influences), the amount of detail necessary at this phase will be dependent on such factors as:

- Number of projects being considered and competition for funding (both within the agency and state)
- Cost and size of the proposed project
- Availability and probability of funding approval

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- Acceptability of program objective (i.e., A controversial agency program may impact the acceptability of a project and require more justification.)
- Importance of desired completion date (i.e., to avoid more costly alternative or temporary accommodations, grant stipulations, court orders, and similar accommodations)
- Conformance of project to principles of capital asset management (i.e., best solution to agency's need in respect to the expenditure of public funds)

Techniques in the Initial Planning Phase will vary in consideration of the required scope as discussed above. Several recommended techniques commonly practiced by agencies include the combination of benchmarking, creation of internal project teams, and use of professional consultants. These activities not only further refine and document the identified project but, more importantly, *test* the proposal to ensure it remains the *best solution*.

In the *Identification Phase*, the Facility Master Plan proposed a broad range of projects responding to the facility needs created by the Agency's Strategic Plan. In the *Initial Planning Phase*, the agency has an opportunity to focus on the specific project, engage in more specific studies, and reconfirm the proposal.

B1. Benchmarking

The "information age" has provided access to almost every public and many private organizations, particularly on the internet and in search engines. E-mail communication along with the ease of travel have provided an excellent environment for executives, managers, and planners to thoroughly explore how other organizations (public and private) address strategic needs through programs and facility development.

Professional associations provide networking access and educational programs among members with similar interests and professional responsibilities.

Through all of these sources, the Initial Planning Phase of projects can be greatly enhanced by comparing the agency's needs and proposed solutions against how *others* have solved these same or similar problems. With fifty individual states, each with similar agencies and functions, there is abundant information readily available.

Additionally, the GSFIC Construction Division (See SCM Chapter 2.1[C]: Introduction) is a valuable resource for benchmarking the proposed project against similar projects recently constructed by other State agencies. The GSFIC Construction Division has within its organization experienced project managers and professional staff to assist agencies with project planning, programming, funding requests, and other pre-construction programming services and maintains detailed records on all past projects.

Benchmarking is the technique of comparing an agency's plan, program, or performance against others engaged in similar activity. It is a technique sometimes overlooked in the public sector but used extensively in successful businesses.

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B2. Creation of Agency Project Teams

The Initial Planning Phase should be an inclusionary process engaging a fairly large cross section of the agency's management team and stakeholders. Although many larger agencies have specific facility planning offices and administrators, there is great benefit to creating a more expanded *team* of stakeholders for this specific phase of Project Development. This expanded team may also include representatives from outside of the agency (regulatory agencies, host community, adjacent organizations, special interest groups, and similar representatives) with the common objective of contributing the broadest scope of ideas and recommendations to the refinement of the proposed project. Engaging agency project teams during the Initial Planning Phase will help *test previous ideas and recommendations* from the primary project planners and create synergy in the creation of new ideas and recommendations as the project is further refined.

B3. Use of Professional Consultants

To consider the use of professional consultants (architects, engineers, and planners) during the Initial Planning Phase, an agency should first consider what these disciplines do and how they can assist in the development of the project. In the basic sense, the practice of architecture is to guide an Owner through the complete development process. The Owner focuses on its needs, which the architect refers to as *the architectural problem.* The architect's expertise is to translate the Owner's needs into a finished design with form, function, aesthetics, cost, and other performance features.

Specialization today has segregated these basic services into specific professional services: planning/programming, design, construction administration, and more recently, program management and construction management. Some architects and other consultants have focused their practice and expertise on just planning and programming new facilities, assisting Owners with addressing *needs* with physical projects and solving the first element of the architectural problem.

The Owner is the expert in its business; the architect is expert in solving architectural problems. Engaging professional planners (architects or other disciplines) during the Initial Planning Phase for these services is highly recommended for projects of high cost or complexity. This is not to be confused with the planning required for SCM Chapter 3.3: Final Project Definition and project design activities that occur during the subsequent *Project Implementation Phase*. The services of professional planning consultants are considered to provide that level of professional and expert advice to ensure the project is the *best* solution to the agency's needs.

If it is determined a professional consultant is needed to assist with completion of the Initial Planning Phase, refer to SCM Chapter 3.2: Team Selection.

C. INITIAL PLANNING ACTIVITIES AND DOCUMENTATION

Initial planning (also referred to as *programming*) is a narrative description of the proposed project supplemented by a limited number of sketches, renderings, and graphic details. The documentation of this phase is the basis for not only the Funding Request Phase, but also the future Design Professional services (architectural or engineering contracts). Furthermore, the documentation in this phase provides detailed information to evaluate the project's merit and confirm the best solution to the agency's need.

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Some of the necessary information for initial planning will be found in the Agency Strategic Plan and Facility Master Plan. As described in the SCM Chapter 2.1: Introduction, a Project Development Checklist has been developed to assist in the identification, organization, and documentation of the appropriate information.

Initial planning should follow the concepts and topics as described in this section although each agency may develop a specific format applicable to its unique requirements. As a further guide to agencies completing the Initial Planning Phase, the Board of Regents has developed a Capital Project Funding Request Worksheet, which is included in the appendix and can be used or modified to fit the agency's needs.

Notwithstanding the use of the Capital Project Funding Request Worksheet or alternate formats, the following initial planning information is generally necessary to obtain agency approvals, prepare for the Funding Request Phase, and organize the data required by the Office of Planning and Budget, Capital Outlay Budget System (COBS). This information should be arranged into Project Development Information that can be reproduced and electronically distributed. This document (See Figure 15) will be carried forward through subsequent phases of Project Development with updated and additional information.

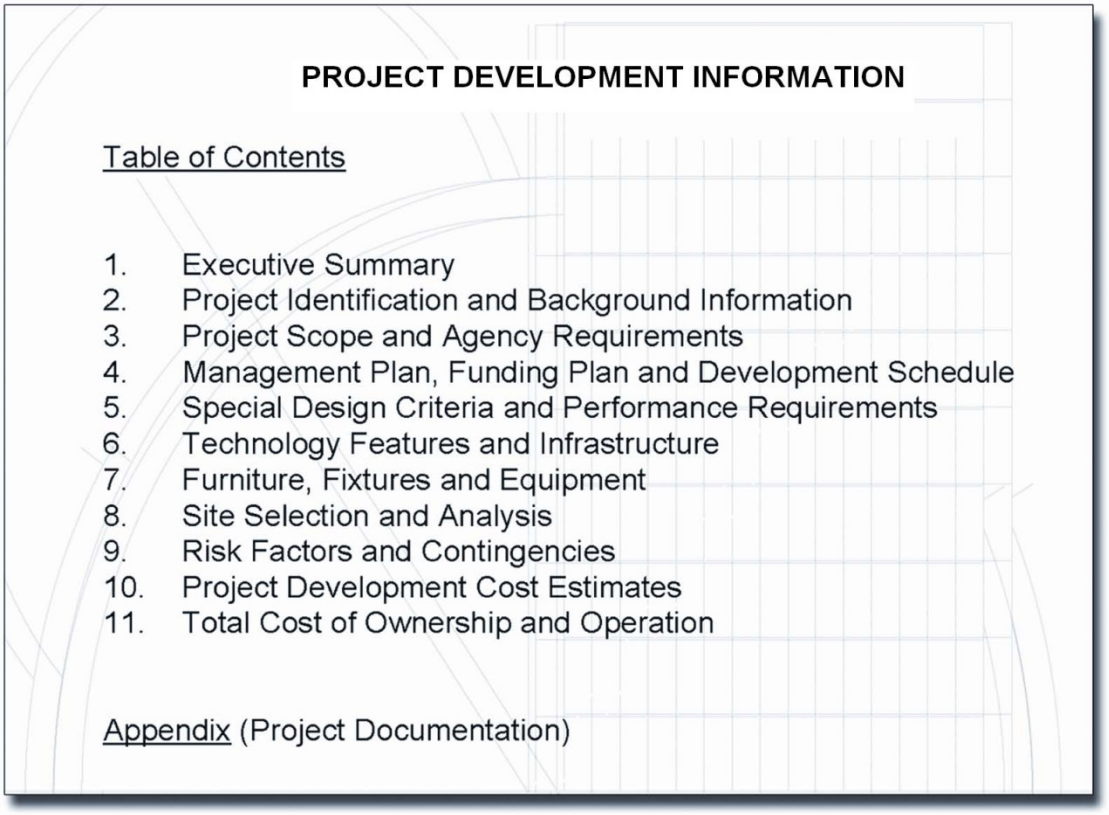


Figure 15: Organization for Project Development Information

The following subsections detail the information required at the Initial Planning Phase:

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C1. Executive Summary

The *executive summary* should be prepared last and provides an *executive review* of the essential facts of the project. Details will be presented in the body of the Project Development Information and can be easily referenced by using the table of contents. The executive summary should be written in concise, easy to understand, non-technical language answering these essential questions:

- What is this project's purpose?
- What is this project, and where is it located?
- Why is this project needed?
- What is the cost of this project, and why this project is the most cost-effective and practical solution to this need?
- What is (are) the proposed funding source(s)?
- What is the proposed development schedule and management plan, and why is approval for this project needed this fiscal year?

In writing the executive summary, place yourself in the position of an agency administrator, legislative budget analyst, senior agency official, State or other government official, or similar analytical capacity. Do not use technical language, including industry abbreviations, acronyms, and other potentially unfamiliar terms. *The purpose of an executive summary is to provide the essential arguments for approval of the project in the fewest words possible.* Usually, the executive summary should be no more than one page in length. Generally, unless there is a question, key decision makers will only read the executive summary, and it should be written accordingly.

In answering the essential questions shown above, check to ensure the following information, as applicable, is addressed in summary format:

- List the name of State agency and subordinate unit.
- Identify the name of the project, location, project type (new construction, renovation, equipment replacement, or other types of projects), and overall scope.
- Describe the project's size, type, scope, and its proposed location.
- Explain the functions and performance characteristics of the completed project.
- Include a statement of project need and justification.
- Correlate the project need and specific objectives to the agency's mission statement and strategic plan.

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- Include a summary of project development costs.
- List key milestone dates of the development schedule (funding and construction).
- Define the project delivery/management plan.
- List any contingencies, significant unresolved issues, or requirements necessary for completion of the project (legislation, action of courts, funding agreements, grant restrictions, or similar unresolved issues or requirements).
- Include agency/facility contact information for questions and further information.

C2. Project Identification and Background Information

This section of the Project Development Information is an *executive summary of the results* of SCM Chapter 2.2: Identification. Here, documentation is placed to explain how this project supports the Agency's Strategic Plan and Facility Master Plan documents. At this Initial Planning Phase, the conclusions of the prior step of identification are reconfirmed and updated with emphasis on clearly documenting the project *need* and again restating *alternatives* that were considered to meet that need, resulting in the decision to proceed with initial planning for this project. In this section, suggested documentation may include:

- References to the Agency Strategic Plan
- References to the Agency Facility Master Plan and identification of this project
- A concise statement describing the type of project (renovation, addition, new construction, system, or infrastructure project)
- A clear and concise statement of current project need and justification
- Summary statements of alternatives considered
- Information on the effect, if any, this project may have on surrounding facilities, programs, or other agency projects

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C3. Program Scope and Agency Requirements

This section of the Project Development Information is the core of the Initial Planning Phase. Also referred to as *architectural programming*, this is a narrative description of the project. This description answers the basic question of how this proposed project will meet the *needs* as previously documented by providing documentation of space requirements, relationships, and program functions. At the Initial Planning Phase, this is still a preliminary document and will be further refined and reviewed by both the agency and the future selected Design Professional. But in order to prepare the accurate cost estimates that are needed for the Funding Request Phase, this documentation should be as complete and comprehensive as possible.

The following information should be provided in a narrative and/or tabular format:

1. Listing of core program requirements for the project. This includes the type of space, size, approximate quantity (i.e., ten classrooms for thirty students, fifty beds, clinical space, conference space, three-hundred seat auditorium, and similar types of requirements).
2. Listing of administrative function spaces required to support the core functions (i.e., administrative offices, conference rooms, mail and copy rooms, file rooms, workrooms, and similar administrative function spaces).

3. Listing or description of storage requirements for both core and support functions (See note under *Item 11* below).

4. Listing of special space needs such as atriums, student gathering places, staff and patron cafeterias, kitchens, break rooms, and similar items.

5. Listing and brief description of any major laboratory or other specialized equipment requirements.

6. Listing of approximate size and numbers of infrastructure support spaces (i.e., computer, telephone, electrical/mechanical, janitor closets, maintenance workrooms, housekeeping workrooms/storage, employee locker rooms/showers, laundry, and similar infrastructure support spaces (See note under Item 11 below).

7. Narrative comments and recommendations regarding the space relationships (location) of core programs and support facilities.

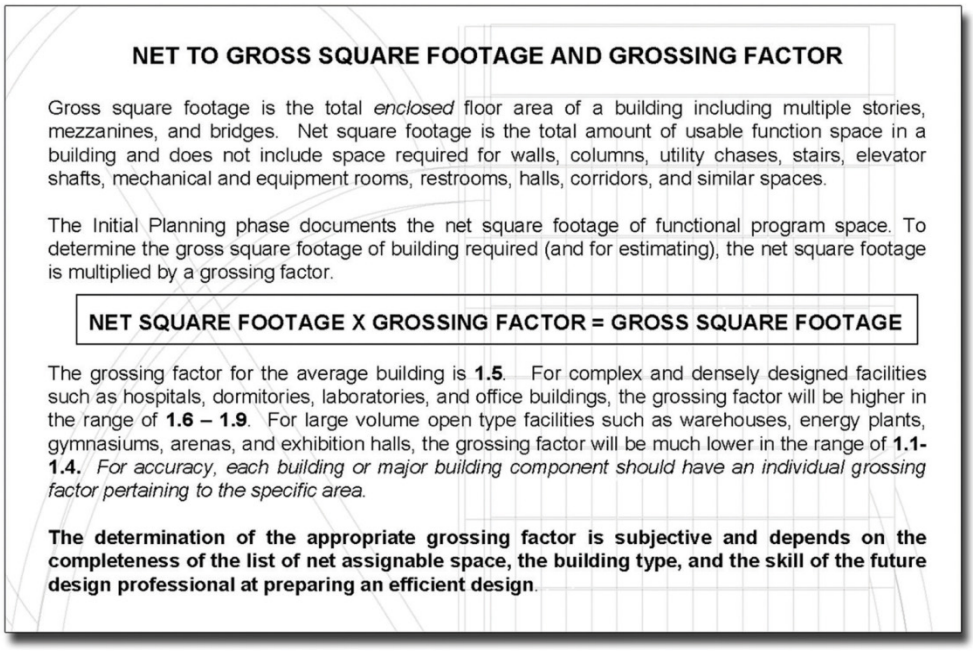
8. Narrative comments and recommendations regarding any functional use of the facility that may affect design (e.g., Adjacency to nearby warehouse may reduce storage requirements; schedule of classroom activity may require larger restroom facilities used only during breaks, and similar functional use comments.).

9. Listing or narrative defining external site requirements that may include parking lots, connecting walkways, promenades, plazas, service driveways, trash and recycle facilities, landscaping, or any other external site requirements.

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10. Calculation of total net square footage of functional program space and total gross square footage of building requirements.

***Note**: The State Properties Commission (SPC) has developed space standards for square footage allocations to be used for interior administrative, and support workspace owned or leased by the State. The standards are to be utilized for the construction of new workspace, renovation of existing workspace, and tenant improvements to leased workspace for all entities of state government. The standards can be found at the* SPC website.



NET TO GROSS SQUARE FOOTAGE AND GROSSING FACTOR

Gross square footage is the total *enclosed* floor area of a building including multiple stories, mezzanines, and bridges. Net square footage is the total amount of usable function space in a building and does not include space required for walls, columns, utility chases, stairs, elevator shafts, mechanical and equipment rooms, restrooms, halls, corridors, and similar spaces.

The Initial Planning phase documents the net square footage of functional program space. To determine the gross square footage of building required (and for estimating), the net square footage is multiplied by a grossing factor.

NET SQUARE FOOTAGE X GROSSING FACTOR = GROSS SQUARE FOOTAGE

The grossing factor for the average building is **1.5**. For complex and densely designed facilities such as hospitals, dormitories, laboratories, and office buildings, the grossing factor will be higher in the range of **1.6 – 1.9**. For large volume open type facilities such as warehouses, energy plants, gymnasiums, arenas, and exhibition halls, the grossing factor will be much lower in the range of **1.1-1.4.** *For accuracy, each building or major building component should have an individual grossing factor pertaining to the specific area.*

The determination of the appropriate grossing factor is subjective and depends on the completeness of the list of net assignable space, the building type, and the skill of the future design professional at preparing an efficient design.

Figure 16: Calculation of Gross Square Footage

See Figure 16 for an example of calculating total gross square footage in a typical mixed-function building.

In producing the documentation for the Initial Planning Phase, transcribing information from previous similar projects can be valuable. Few projects are truly *unique* in the sense that a similar facility has not been successfully planned and constructed before by another agency within Georgia or another state. Refinement of past planning through *benchmarking* as discussed in SCM Chapter 2.3 (B1): Initial Planning will serve to document desired features and eliminate repeating mistakes.

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Total Gross Area Computation

The following is a calculation for a mixed-function building containing an administration area, classrooms, and a maintenance area (Net areas should be taken from the Room Data Sheets).

Areas	Number of rooms/spaces	NSF per space	Total NSF	Grossing Multiplier	GSF
ADMINISTRATION					
Covered Drop Off	1	900	900		
Vestibule	1	80	80		
Lobby and Exhibit	1	250	250		
Receptionist	1	100	100		
Secretary	1	125	125		
Director	1	200	200		
Conference Room	1	300	300		
File Room	1	150	150		
Assistant Director	1	175	175		
Secretary	1	125	125		
Work Room		200	200		
Subtotal			2605	X 1.6	4,168
LEARNING CENTER					
Classrooms	20	800	16,000		
Shared Storage Closets	6	100	600		
Shared Offices	10	175	1,750		
Demonstration Lab	3	750	2,250		
Lab Storage Closets	3	50	150		
Subtotal			20,750	X 1.6	**33,200**
AREA MAINTENANCE					
Engine Maintenance	1	1,275	1,275		
Electric Motor Rebuild	1	650	650		
Maintenance Storage	1	900	900		
Subtotal			2,825	X 1.25	3,531
TOTAL			**26,180**		**40,899**

Average Building Grossing Factor 40,899/26,180 = 1.56

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Figure 17: Total Gross Area Computation Example

C4. Management Plan, Funding Plan, and Development Schedule

In this section of the Project Development Information, describe the Overall Development Schedule, highlighting the timeframe for occupancy and use of the project. From this ultimate goal (project use date), show the estimated time periods and milestone dates for the Project Implementation Phase: *Team Selection, Final Project Definition*, *Design*, *Construction*, and *Contract Closeout*. Supplemental tasks associated and required as a prerequisite to project use after construction completion (FF&E, telecommunications, and other construction completion activities) should also be indicated in this schedule.

The funding plan describes the sources and schedule of funding. Since more costly projects may be funded over multiple years and some projects funded through multiple sources (gifts, grants, agency funds, and similar sources), it is critical to correlate this with the Overall Development Schedule. With multiple fund sources, if one fund source is contingent on approval of another, this should be indicated on the funding plan.

The management plan refers to how the project is to be administered. Typically, all bond-funded projects are administered by the agencies during project development and by the agency or the GSFIC Construction Division during project implementation (See SCM Chapter 2.1[G]: Introduction). Furthermore, the agency or GSFIC may recommend additional consultants to serve as Executive Administrators, but throughout each phase, the agency's executive and facility management staff remain closely involved in the project.

During the Initial Planning Phase, the agency will need to begin thinking about the project delivery method. While no project delivery option is perfect, one option may be better suited than another based on the unique requirements of a particular project. The three options are: Design-Bid-Build (DBB), Construction Management (CM/GC) and Design-Build (DB). See SCM Chapter 3.19A: Foreword, for more comprehensive information regarding the choice of a delivery method. At a minimum the agency should be considering the desired development schedule and projected funding schedule during the Initial Planning Phase. If the required date for occupancy requires a schedule that can only be maintained by overlapping of the design and construction phases, either CM/GC or Design-Build should be considered. Consideration for the most appropriate delivery method should include potential or anticipated delays between funding for design and funding for construction.

C5. Special Design Criteria and Performance Requirements

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This section of the Project Development Information documents the special instructions the agency should emphasize for the future Design Professional in preparing plans and specifications. The information provided above in Chapter 2.3 (C3): Initial planning contains the basic *programming* information for the Design Professional in respect to the number of spaces, size, space relationships, and similar criteria.

In this section, specific and unique *design or performance requirements* should be identified and listed. Suggested documentation may include the following:

1. Statement or narrative describing the level of quality and aesthetics desired for this project.

2. Reference to the agency's design standards:

   - A reference to an existing facility may be appropriate and explanatory.

   - If adding to an existing (older) building, several options may exist such as matching the old design, complementing with new design, and similar options. It may be best to not address this during the Initial Planning Phase, but to reserve options until the Design Professional can analyze and make recommendations.

   - Any information on desired architectural character of the structure including materials, building configuration, special features, and aesthetic goals.

- Level of quality should reflect Total Cost of Ownership and operation (See *SCM Chapter 2.3 (C11): Initial Planning*) and long-term investment of the State (e.g., Higher first cost may be more cost effective than operational costs. Lesser quality finishes result in higher maintenance costs.).

3. Document any of the following special or unique operational requirements:

   - Spaces within the project that require 24/7 operation (important for design of HVAC systems)

   - Areas requiring more stringent security and access provisions

   - Projected use of *multi-use areas* (important for utility and fire protection design)

   - Any potential *alternate use* of space (e.g., A gymnasium is used as a Federal Emergency Management Agency (FEMA) emergency shelter.)

   - Intermittent use of spaces or other unique conditions (important for lighting and HVAC design)

4. List any local community considerations including zoning, historic district designation, neighborhood planning groups, or other community considerations.

5. Identify special equipment such as laboratory, machinery, technology (See *SCM Chapter 2.3 (C11): Initial Planning*), or other special equipment and infrastructure unique to this project.

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6. Give a statement of potential options available for energy efficiencies (e.g., tie-in to adjacent facility, development of central plant, and similar options).

   ***Note**: It is important at the Initial Planning Phase for the agency to at least identify and ask the question of how best to provide energy for the electrical and HVAC systems. The customary approach is to design each new facility as a stand-alone project with built-in redundancy. But in most campus and complex environments, significant first and operational cost savings can be achieved by tie-in, combinations of systems, or developing a central plant. Heating systems with alternate fuel capabilities can achieve up to fifty percent savings on some utility contracts. At this Initial Planning Phase, statements should be made to confirm the agency's desire and intent to further investigate this question during SCM Chapter 3.3: Final Project Definition or commission a separate Project Development Study.*

C6. Technology

This section of the Project Development Information documents the important aspects of planning the technology components of the project. Information Technology (IT) is integral to all functions of an agency and its facilities. For the Initial Planning Phase, broad and general statements should be made to define the overall IT goals and objectives of the agency that are to be incorporated into this project. IT is a dynamic science, and the likelihood of advances in system components and design will likely occur prior to and during the Project Implementation Phase.

There are two components to IT: *infrastructure* and *equipment*. Primarily, the infrastructure includes the fiber-optic and other cabling and active electronics enabling transmission of data, voice, and video in a secure environment. Advances in infrastructure design have combined these systems with fire protection, security, energy management, lighting, HVAC, access control, and other building systems. IT *infrastructure* is part of the facility construction and should be incorporated in this part of the facility design and budget. IT *equipment* is generally included in a separate technology line item in the budget (See *SCM Chapter 2.3 [C7]: Initial Planning* below). IT equipment includes items such as communications devices, computers, printers, and similar equipment.

For agency-managed projects, design and procurement of IT products and services falls under the oversight of the Department of Administrative Services (DOAS) and the Georgia Technology Authority (GTA). Note that some agencies may elect to procure IT equipment directly through to DOAS by GTA.

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GSFIC publishes the Telecommunications Design Manual describing the current design standards, guidelines, and regulations governing telecommunications design on all State projects. At the Project Implementation Phase, this manual should be made available to the Design Professional and its requirements incorporated into the project design.

In addition to the above-described IT components, the facility design must also incorporate special considerations for IT equipment. Special ventilation, fire protection, electrical circuitry, and other systems must accommodate the requirements of IT installations.

C7. Furniture, Fixtures and Equipment (FF&E)

This section of the Project Development Information identifies the projected needs for furniture, fixtures and equipment that are generally not attached or permanently connected to the facility (i.e., *loose equipment*). This would include such items as tables, desks, chairs, bookcases, chart boards, artwork, trash receptacles, desktop equipment, breakroom equipment, podiums, lecterns, and similarly unattached FF&E. It may also include loose kitchen and cafeteria equipment, maintenance, housekeeping, and grounds maintenance equipment.

> ***Note**: As a general rule, equipment that requires structural or fixed utility connections to a building should be included in the design documents and construction contracts (e.g., dishwashers, air compressors, cabinets, carpets, window treatments, laboratory casework, and similar fixed equipment). Furniture and equipment that can be delivered to the loading dock and plugged in or set in location should be procured separately by the agency (or GSFIC Procurement Services).*

There are practical exceptions to this general rule:

- Kitchen equipment is both fixed and loose. It may be advisable to procure such equipment (except expendables) through one source (contractor or vendor).

- *Fixed equipment* such as laboratory, kitchen, and maintenance equipment can be procured by the agency as *loose equipment* then connected and installed to the facility by the building contractor or separate contractor provided that arrangements are coordinated in the both the Design and Construction Documents for such installation.

- *Loose equipment* can be included in the Construction Documents and provided to the agency at Material Completion of the project, but generally the cost will be higher due to inability to exercise discounts on state-wide contracts and the Construction Professional's overhead and profit.

For the Initial Planning Phase, the agency should document the general type and amount of new FF&E being contemplated for this project in this section. Detailed lists are not recommended at this phase due to the lack of final project definition and design. If existing equipment is available for use on this project (maintenance, desks, chairs, and other existing equipment); those assumptions should also be documented in this section.

C8. Site Selection and Analysis

This section of the Project Development Information addresses the proposed or potential site for the project and several options exist such as:

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- The proposed site is new property acquired by the agency.

- The proposed site is part of an agency campus with existing facilities, utilities, and infrastructure.

- The site is not acquired or identified at the time of initial planning, but potential sites (new or existing) are being evaluated.

- The project is a renovation; site analysis is not applicable.

During the Initial Planning Phase, preliminary research into the proposed project site is advisable. Suggested research, review, and documentation may include answers to the following questions:

- Does the proposed site meet the programmatic, functional, and labor requirement needs of the project from a geographic location in the State or region?

- Is there sufficient area on this site for the construction of the project and all exterior services and features?

- If the Facility Master Plan implies this project may be expanded in the future, is here sufficient property on this site for such expansion?

- Are the following necessary utilities available at this site? If not, can they be extended or upgraded at *reasonable* cost to the project?

1. Water
2. Sewer
3. Electricity*
4. Natural gas
5. Steam/Chilled Water
6. Communications

*__Note__: *Electricity may be available from the Georgia Power Company, local EMC(s), municipal power companies, or agency/campus network. For large campus operations, check with the Public Service Commission for bidding provisions of electrical services.*

- Are there potential environmental conditions prevalent in the area? (Wetlands, waterways, air quality/emissions discharge restrictions, threatened plant and animal habitats, or other environmental conditions)?
- Is there evidence of unfavorable subsurface conditions as evidenced by adjacent projects or available research? (rock, unstable soil, ground water, or other subsurface conditions)?
- Is transportation access available as needed for this project such as the following?

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1. Access to interstate highways,
2. Local road access,
3. Public transportation system access.

- What are the total cost implications of the site being considered?
- Will the project "fit" politically, socially, and economically within the surrounding community? Are there any local community considerations including zoning, historic district designation, neighborhood planning groups, or other community considerations that should be considered?

When the site is selected, it is strongly recommended that a Phase I Environmental Site Assessment (ESA) (See Chapter 2.4 [C6]) be performed. More in depth geotechnical investigations, surveys, and constructability analysis including the required Georgia Environmental Policy Act (GEPA) evaluation will be conducted during the Project Implementation Phase. The purpose of the ESA is to identify the existence of any hazardous materials/contaminants, restrictions regarding natural resources, protected species, and similar regulated environmental concerns.

* __Note__: *Phase 1 ESA is terminology and procedure created by the American Society for Testing and Materials (ASTM) and used to define good commercial and customary practice in the United States for conducting an environmental site assessment of a parcel of commercial real estate with respect to federal environmental regulations.*

The Phase I Environmental Site Assessment should generally be performed by an environmental consultant familiar with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA – 42 U.S.C. 9601), the Georgia Environmental Policy Act (OCGA 12-16-1) and applicable State and federal environmental regulations.

As a minimum, the ESA shall meet the requirements of the American Society for Testing and Materials (ASTM) Standards E1527 Standard Practice for Environmental Site Assessments, but should also include a detailed assessment (including abatement recommendations and cost estimates) of other potential environmental/property conditions as outlined below:

- Surface storage of hazardous materials
- Asbestos-containing materials
- Lead-based paint (or other lead contamination)
- Soil and/or ground water contamination
- Solid waste (burned waste/landfills)
- Archeological sites/artifacts, human burial sites
- Wetlands
- Water supplies and resources
- Flood plains
- Protected species and critical habitats
- Toxic waste
- Underground storage tanks (USG)
- Due diligence survey to determine previous environmental contaminates

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The State Properties Commission requires a Phase 1 Environmental Site Assessment (ESA) and a Georgia Environmental Policy Act (GEPA) evaluation prior to the procurement of State property. Many agencies have established additional policies and procedures for the conduct of these site assessments. The Board of Regents guidelines titled Environmental Procedures for Construction, Renovation, and Real Estate Transfer offer a good resource to agencies for completing this step of site analysis and evaluation.

If the ESA or GEPA evaluation (if performed at this phase) identifies any adverse conditions, this result could affect the acceptability of this site for a new building or renovation project. The environmental consultant should provide information on costs of abatement or other alternatives and recommendations. The agency should confer with the Department of Natural Resources: Environmental Protection Division to verify acceptability of the recommendations and provide advice to the agency on how to proceed regarding this particular site. The ESA should be current. If over six months old, it must be updated to reflect any new conditions or changes in the application of environmental rules and regulations.

Generally, the GEPA evaluation should be completed during the Schematic Design Phase or during the initial stages of preliminary design when more accurate information is known about the size, location, and features of the proposed project. The GEPA evaluation focuses on potential adverse environmental impacts created during the construction or operation of the proposed facility. Both the Phase 1 ESA and GEPA evaluations can be performed together if the agency prefers. In this case, the GEPA evaluation may offer guidance to the Design Professional on constructability concerns but should be updated during development of preliminary design and plot plans.

C9. Risk Factors and Contingencies

In this section of the Project Development Information, identify any potential issues that, if not favorably resolved, would adversely affect the plans to proceed with this project as represented in this Initial Planning Phase.

Examples of such contingency items and risk factors may include:

- Acquisition of property for project site
- Approval of a funding plan involving grants, gifts, agency funds, and other aspects of a funding plan that may be associated with risk
- Delivery of funds from a funding plan involving multiple parties
- Adverse or potential environmental issues identified in the Phase I ESA or GEPA evaluation (if performed)
- Extension or upgrade of utilities (not included in project)
- Potential for easement and other property use issues
- Historic properties concerns and local planning/zoning issues
- Local and State political “climate” regarding function of project
- Pending legislation or court action
- Change in priority by agency, change in Strategic Plan and Facility Master Plan

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C10. Project Cost Estimates

This section of the Project Development Information documents the initial development of project costs. At the Initial Planning Phase, sufficient detailed information is not available to develop thorough construction and Total Project Cost estimates. Where cost information is available from recently completed projects or reference sources, including the GSFIC Construction Division or planning consultants, a Preliminary Construction Cost Estimate may be prepared for agency review during this Initial Planning Phase and documented here.

A Preliminary Construction Cost Estimate is prepared by analyzing current programmatical information about a proposed project and applying square foot cost per major functions or systems derived from similar projects. Such estimates should include a contingency for consideration of unforeseen conditions, design contingencies, inflation, and program scope changes. A more important budget estimate at this phase is the Total Project Cost estimate. The Total Project Cost estimate includes all cost categories associated with development of the project from initial planning to occupancy and use.

See Figure 18 for an example of the OPB Total Project Cost Worksheet and note the categories of items to be included. Since all of this information may not be available at the Initial Planning Phase, reasonable allowances should be estimated based on available resources and data.

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PROJECT IMPLEMENTATION PLAN - *Example*

Project #:	**GSFIC # DFR-256; OPB # 2005-00012-35**
Project Title:	**Research & Classroom Building**
Institution / Campus:	**Johnson Technology Center**
Location, City / County:	**Johnsonville, Davis County**

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Yellow - Protected Formula C
Red - Check Row Summatio

COST SUMMARY	Cost by Item		Cost by Phase				
	% of TCC	Amount	Planning / Predesign	Property Acq	Design	Construction	Equipment
1. Planning / Predesign / Programming		$35,000	$35,000 100%				
2. Property Acquisition		$150,000		$150,000 100%			
3. **Total Construction Cost** [TCC] (escalated per schedule) Agencies must submit TCC detail to OPB		$5,890,000				$5,890,000 100%	
4. A/E Design & Construction Administration	6.8%	$400,000			$280,000 70%	$120,000 30%	
5. Proj. Manag. or Construct. Manag. Support: PM	0.6%	$35,000			$21,000 60%	$14,000 40%	
6. Inspection, Testing, Surveys	1.3%	$75,000				$75,000 100%	
7. Commissioning	1.0%	$60,000			$18,000 30%	$42,000 70%	
8. Construction Monitoring / Inspection	2.0%	$120,000				$120,000 100%	
9. Loose Equipment & Furniture	14.4%	$850,000					$850,000 100%
10. Other - **Environmental Site Analysis**	0.1%	$8,500		$8,500 100%			
11. Other - _____							
12. Other - _____							
13. Other - _____							
14. Other - _____							
15. Other - _____							
16. **Subtotal** (without Project Contingency)		$7,623,500	$35,000 0.5%	$158,500 2.1%	$319,000 4.2%	$6,261,000 82.1%	$850,000 11.1%
17. Project Contingency	% of Subtot 4.9%	$375,000			$7,500 2%	$348,750 93%	$18,750 5%
18. **Total Project Cost** - *Calculated*		$7,998,500	$35,000	$158,500	$326,500	$6,609,750	$868,750
19. **Total Project Cost** - *Used for Funding Plan*		$8,000,000	$35,000	$159,000	$327,000	$6,610,000	$869,000
		Amount	Planning / Predesign	Property Acq	Design	Construction	Equipment

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PROJECT DELIVERY METHOD *check appropriate box*	PROJECT PHASE	Phase Managed by:		Schedule (mm/cy) Start	End
☑ Design-Bid-Build	Planning/Predesign	Agency		09/2007	04/2008
☐ CM @ Risk	Property Acq	Other (identify in cell to right):	Prop Comm	10/2007	02/2008
☐ Design/Build	Design	Agency		11/2009	07/2010
☐ Other - _____	Construction	GSFIC		08/2010	12/2011
	Loose Equipment	Agency		10/2011	01/2012

Note:
The **Project Schedule** is based on **CALEND [CY]**.

The **Funding Plan** is based on **FISCAL YEA** FY 2010 is from 7/1/09 through 6/30/10.

The two must be compatible, as activities mu order to proceed or award contracts. Fundi available until months into the Fiscal Year ap particularly if bond funded.

FUNDING PLAN	Cost Total	Project Cost Distribution for Funding: All Prior Funding	Request FY 2010	Projections FY 2011	FY 2012	FY 2013	FY 2014	Funding F Total
Planning/Predesign	$35,000	$35,000						$35
Property Acq	$159,000	$159,000						$159
Design	$327,000	$15,000	$312,000					$327
Construction	$6,610,000		$6,610,000					$6,610
Loose Equipment	$869,000			$869,000				$869
Total	$8,000,000	$209,000	$6,922,000	$869,000				$8,000
Less Non-State Funding								
1) **Foundation**	$1,000,000		$1,000,000					$1,000
2) **Private Sector**	$100,000			$100,000				$100

Figure 18: OPB Total Cost Worksheet

C11. Total Cost of Ownership and Operation

At the Initial Planning Phase, a brief statement or narrative should be documented to address the long-range impacts of this project on the agency's organization and budget. During the *Funding Request Phase*, the last phase of Project Development, more detailed information will required on total cost of Ownership.

For the Initial Planning Phase, the agency may consider and document these items:

- Additional full and part-time positions required
- Additional categories of personnel required to fulfill program objectives
- Additional contract services anticipated (maintenance, service agreements, IT, program, and similar contract services)
- Estimate of annual maintenance costs
- Estimate of annual utility costs, insurance, and other operating expenses
- Changes to the agency organization required to administer new project/program
- Reallocation of existing resources

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C12. Appendix

The appendix to the Project Development Information contains all of the supporting reports, studies, and other acquired data referenced in the body of the document. This information should be saved in electronic format for later submission as an appendix to Office of Planning and Budget (COBS) documentation required during the Funding Request Phase.

D. APPROVALS

The *Initial Planning Document* is the basis for further development and submission of funding requests by the agency. Accordingly, the approval of the Initial Planning Phase is a critical and important milestone in project development. The Initial Planning Document also serves as the starting point for project implementation and the commissioning of more consultants and, eventually, Construction Professionals. As the project develops, changes become more costly and detrimental to the progress schedule.

Agencies will have various methods for prioritizing, approving, or authorizing the project to proceed. The processes and confirmations of agency approval of the Initial Planning Phase should be documented in the Project Development File.

Section Two: Project Development

Chapter 2.4: Funding Request Phase



A. OBJECTIVE

The Funding Request Phase includes those tasks necessary to finalize and submit an Agency Funding Request for a capital project to the Office of Planning and Budget (OPB) and follows the previously described Initial Planning Phase. The objective of the Funding Request Phase is for data refinement and development necessary to submit a well thought out budget proposal for funding approval of the project.

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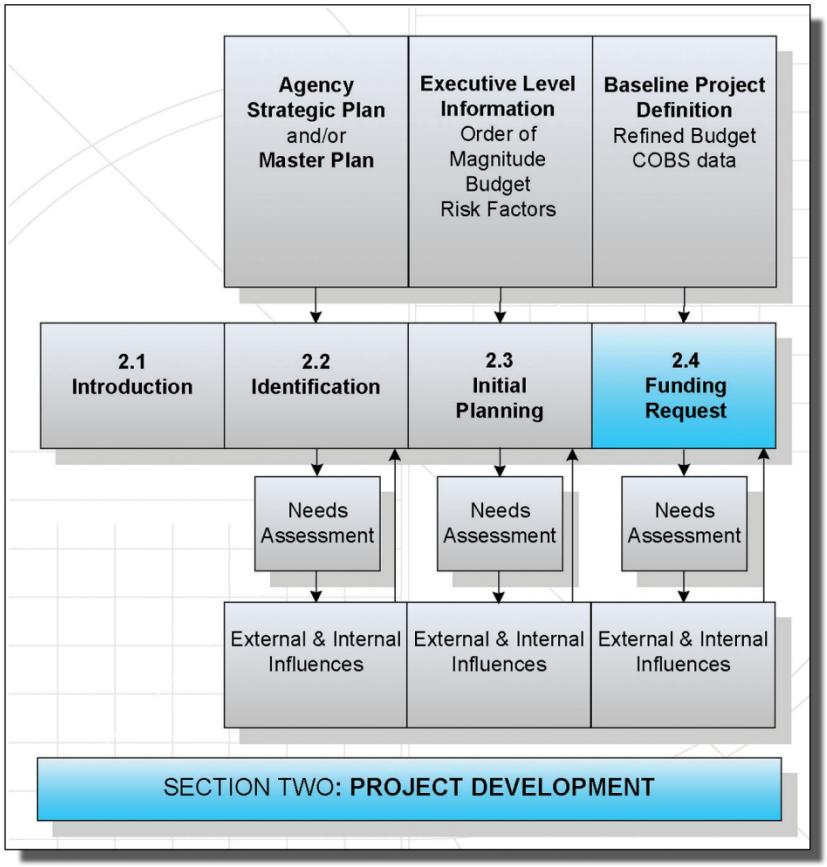


Figure 19: Project Development Flow Diagram

A cohesive budget proposal requires reconfirmation of all previous project documentation and information created in the Initial Planning Phase, addition of new information and details about the project, and other factors that support the objectives of the Agency's Strategic Plan and merits submission of the project to the Office of Planning and Budget (OPB) and eventually to the State Legislature.

Use of the Capital Outlay Budget System (COBS) is the required format for the submittal of Capital Funding Requests to OPB. Using this Internet-based system, OPB personnel review and consider all Agency requests to assist the Governor in developing budget recommendations to the State Legislature.

B. PROJECT FUNDING REQUEST ACTIVITIES AND DOCUMENTATION

The focus of activities in this phase is on assembling a comprehensive scope description and an accurate cost estimate for the project appropriate for the type of funding request in addition to providing the necessary information to support the overall project request. Much of the necessary program and preliminary cost information has been previously documented in the Initial Planning Phase and will be updated to reflect the most current and accurate data for the project. For example, Board of Regents uses Project Development Checklist, Capital Funding Request Worksheet, and documentation in the Project Development Information to organize this information in a uniform format.

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The completeness and thoroughness of documentation at the Funding Request Phase is of utmost importance. Not only will decisions be made and funding priorities established on the merits of the project against other Agency and State requests, but if the project is approved, the Agency will be expected to complete the project based upon the project scope and funding representations made at this phase. The time span between the project scope submitted into COBS and project approval can be lengthy. Since the funding approval is typically a fixed number, it may be necessary to revise the project scope due to construction market fluxuations.

The level of consultant support to complete this Funding Request Phase will depend on the complexity, size, and cost of the project; expertise and availability of Agency staff; and access to information on similar projects from GSFIC, OPB, and other agencies. If the Agency chooses to retain the services of cost consultants in this phase, see SCM Chapter 3.2: Team Selection for further information.

C. FUNDING REQUEST PHASE ACTIVITIES AND DOCUMENTATION

The Project Development Checklist and Project Development Information produced in the Initial Planning Phase will be the basis for further refinement and addition of more detailed and current information to support the funding request. Prior to submission of a project funding request to OPB, it must be reviewed, recommended, and approved internally by the Agency. Each Agency may have its own specific format and process applicable to its unique requirements. As a further guide to agencies preparing for the Funding Request Phase, the Board of Regents has developed a Capital Funding Request Worksheet included in the appendix that can be used or modified to fit the Agency's needs.

The following paragraphs correlate to the Project Development Information produced in the Initial Planning Phase and are used to assemble the information necessary in the Funding Request Phase. Refer to this previous section for details on each of these topics. In the paragraphs below a brief description of the topic is given followed by a list of *bulleted additional comments* that should be addressed as this document is updated in this Funding Request Phase to support and justify the project.

C1. Program Scope and Agency Requirements

This section was the *core* of the Initial Planning Phase, and in this Funding Request Phase, *program scope and Agency requirements* become the basis from which cost estimates are prepared. Also referred to as *architectural programming*, this is a narrative description of the project. It answers the basic question of how this proposed project will meet the *needs* as previously documented by providing documentation of space requirements, relationships, and program functions. The level of accuracy therefore depends upon the completeness of this document.

If the scope has been previously developed and for completeness in this narrative, the following items should be reviewed and re-confirmed:

- Core program requirements,
- Net assignable space and total gross square footage calculations, including all interior and exterior requirements,
- Any changes in the Agency's Strategic Plan or mission which would have an effect on the proposed initial planning document.

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C2. Special Design Criteria and Performance Requirements

In SCM Chapter 2.3: Initial Planning Phase, this section of the Project Development identifies/documents/describes any special instructions and areas of importance the Agency should emphasize to the future Design Professional in the preparation of plans and specifications during the subsequent Project Implementation Phase.

- Update any revisions to Agency's design standards.
- Review options for energy efficiencies and results of special studies (i.e., central plan analysis, and similar studies) if conducted.
- Update any changes to information provided in Initial Planning Phase.

C3. Management Plan, Funding Plan, and Development Schedule

In *SCM Chapter 2.3: Initial Planning*, this section of the Project Development Information described the project's administration, funding, and the development of the Overall Development Schedule, which includes the proposed completion date and start of operations. For the Funding Request Phase, the focus of new and updated information is on the development schedule and funding plan.

- The funding plan describes the sources and schedule of acquisition of required project development funds. At the Funding Request Phase, specific assumptions and recommendations should be documented to correlate to the Overall Development Schedule.

- Identify information on non-State funding amounts and availability (if applicable).

- Review previous funding contingencies (if applicable) and provide information on status.

- If funding plan or anticipated funding schedule requires review of the management plan (i.e., considering alternative delivery methods), include updated information and recommendations.

C4. Technology

In *SCM Chapter 2.3: Initial Planning*, this section of the Project Development Information documented the important aspects involved when planning the technology components of the project. Information Technology (IT) is integral to all functions of an Agency and its facilities.

There are two components to IT: *Infrastructure* and *Equipment*. For non-GSFIC managed projects, design and eventual procurement of IT products and services falls under the oversight of the Department of Administrative Services (DOAS) and the Georgia Technology Authority (GTA). Note that some agencies may elect to procure IT equipment directly through DOAS by GTA.

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C5. Furniture, Fixtures and Equipment (FF&E)

In *SCM Chapter 2.3: Initial Planning*, this section of the Project Development Information identified the projected needs for furniture, fixtures and equipment that are generally not attached or permanently connected to the facility (i.e., "loose equipment").

- Identify FF&E requirements as needed and associated estimated costs.

- Include allowances for relocations of existing FF&E.

C6. Site Selection and Analysis

In *SCM Chapter 2.3: Initial Planning*, this section of the Project Development Information addressed the proposed or potential site for the project and several options may exist:

- The proposed site is new property acquired by the Agency.

- The proposed site is part of an Agency campus with existing facilities, utilities, and infrastructure.

- The site was not acquired or identified at the time of initial planning, but potential sites (new or existing) are being evaluated.

- The project is a renovation; site analysis is not applicable except for confirmation of existing conditions.

During the Initial Planning Phase, certain preliminary review and research activities into the proposed project site were advised. Suggested research, review, and documentation included a basic programmatic review (is this site right for this project?) and a Phase I Environmental Site Analysis. It may also have included the Georgia Environmental Protection Act (GEPA) Evaluation (generally performed during schematic/preliminary design).

For the Funding Request Phase:

- A more detailed review of the proposed site may be warranted to identify any potential costly items for development.
- Document any adverse information derived from the Phase 1 Environmental Site Assessment (See Chapter 2.4 [C6]) and costs associated with abatement.
- Document any potential restrictions identified by the GEPA evaluation. If a GEPA evaluation has not been performed, review the contents of requirements to possibly determine if further investigations at this phase are warranted.
- Assess the constructability of the site, focusing particular attention on foundations, geotechnical (rock removal), and other potential constructability trouble spots. Review available information on the history of the site and similar projects in the general area around the site to determine if further investigations at this phase are warranted.

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- Review all requirements and regulations pertaining to compliance with environmental laws including waste water, air discharge, and land disturbance to ensure the funding request is adequately budgeted for these potential issues.
- Confirm cost estimates for the supply and connection of water and sewer services. Confirm capacity for new demand.
- Confirm cost estimates for the supply of electric service. Confirm capacity for new demand.
- Confirm cost estimates for supply of fuel for HVAC (fuel oil, natural gas, propane) and/or capacity of central plant for new demand.
- Are offsite site road improvements required and/or funded from this project? If so, reconfirm costs and development acceptability.
- Are there any remaining social, political, or regulatory issues pending? If so, reconfirm plan to address and any corresponding costs to project.

C7. Risk Factors and Contingencies

In *SCM Chapter 2.3: Initial Planning*, potential issues were identified in the Project Development Information which, if not favorably resolved, would adversely affect the plans to proceed with this project as represented in this Initial Planning Phase.

For the Funding Request Phase use this section to recap issues presented in other sections of the Project Development Information (this could be seen as an *executive summary of risks*):

- Update documentation to reflect status of site acquisition and identify any risk factors present, including any environmental issues.
- Identify any contingent funding issues such as grants, gifts, use of Agency funds, local funding, federal funding, or other contingent funding issues.
- Restate any risks associated with extension or provision of utility services to the site.
- Identify potential issues regarding land use/zoning, public opinion, legislative or judicial actions, or other potential issues that may affect the project.

C8. Project Development Cost Estimates

The key information component of the Funding Request Phase is the determination of a realistic estimate of project costs based on well thought-out project scope that is useable for making sound funding decisions. The project cost estimate will be entered into the Office of Planning and Budget (OPB) Capital Outlay Budget System (COBS) as the basis to request funding for the project. Agencies should refer to the annually issued OPB Budget Instructions and the COBS User Guide for the upcoming fiscal year for detailed instructions on presenting and submitting the required capital project information including costs.

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It is critical that previous order-of-magnitude or rough preliminary cost estimates developed in earlier project development activities are just not "updated" but are carefully examined and refined related to completeness and thoroughness to encompass all expected project costs. This includes the explicit incorporation and documentation in the cost estimate of all significant project scope, program requirements, and site condition information developed in this, and previous phase activities, which directly impact project implementation and costs. The additional effort to better identify project scope and requirements at this stage will yield benefits throughout project implementation. The cost estimate and corresponding documentation can be viewed as the financial representation of the project's physical, performance, management, and schedule requirements, documenting project decisions and assumptions at the time of the estimate. The cost estimate should be reasonably objective and unbiased, not unduly conservative (worst case / high-ball) or overly optimistic (best case / low-ball), but represent the project's expected "most likely" implementation costs.

The Office of Planning and Budget, Capital Budgeting Division, and the Georgia State Financing and Investment Commission, Construction Division, are available to provide technical assistance in completing this cost estimation phase.

1. **Construction Cost**

The project's construction cost estimate is generally the most critical aspect of the entire project cost estimate, being the largest cost component (often 70% to 80% of the total project cost) and serving as the basis for the determination of other associated project costs such as design, commissioning, etc. The construction cost estimate should take into consideration the project's program requirements, site conditions, and reasonable potential design related characteristics. Project concept considerations at this stage include potential building configuration, desired architectural treatments, building systems/components complexity, and any special accommodations (e.g., security, parking, topographic constraints, etc.). The estimate should incorporate all associated costs and expenses (labor, material, markups, overhead, profit, etc.) for the contractor to perform all physical work.

If the project involves multiple buildings or locations, either new construction or renovation, separate construction cost estimates should be prepared and documented for each facility or location.

The method and technique to prepare a reasonable and representative construction cost estimate for a given project depends on the project's size, complexity, and uniqueness. In selecting the basic cost modeling approach to be used, consideration should also be given to the degree of Agency staff familiarity and experience in prior use of that approach and the availability and comprehensiveness of suitable cost information and databases. Selection of the approach should also consider the desired continued use and refinement of the estimate during future design activities for cost control and potential trade-off analysis. Several common approaches of developing construction cost estimates include the following:

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- The Construction Specification Institute (CSI) endorses as a best practice the development of the construction cost estimate using the CSI UniFormat. UniFormat is the classification system for construction information based on project/facility elements and systems, and is an industry standard for facility cost estimating and analysis prior to formal design activities. Use of the UniFormat system provides completeness and comprehensiveness, and fosters continuity of use for cost estimates and analysis during design activities. Note that the CSI format known as MasterFormat is not recommended at this project phase, as it is more suited for use with the Project Implementation Phase during later design and construction activities. Many consulting firms providing professional costing services can provide UniFormat type construction cost estimates based on an adequately developed and documented project description provided by the Agency.

- The construction cost estimate may be based on documented recent comparable Agency projects of similar scope and design features. Great care must be exercised in the development and application of square foot costs derived from other projects. Any adjustments to the derived historical unit costs should be documented that account for significant variations in key construction cost drivers such as project: timing, floor area size and functional use, complexity, configuration, floor height, structure type, quality of services and finishes, geographic location, site conditions, and special and unique interior and exterior program requirements.

- Preparation of the construction cost estimate may employ the application of commercially available cost modeling software tools and project cost information publications and resources (e.g., Sage Timberline, RS Means Building Construction Cost Data, and other recognized industry tools).

- Various internet web sites provide simple parametric based cost estimating using various items of project scope and configuration factors. An example of this is the Association for the Advancement of Cost Engineering International (AACEI) parametric cost estimating model for buildings where various project parameters are entered including floor area, number of floors, percent of area used for office and labs, structural loads, exterior closure type, and quality of interior finishes, mechanical services, and electrical services. Users should also be aware of any project scope not specifically included in the estimate and make appropriate inclusions. AACEI's model does not include costs for exterior site work and site improvements such as parking and utilities.

- For small repair or renovation projects (e.g., less than $150,000), non-binding contractor courtesy estimates or quotes are sometimes obtained by agencies to ascertain the construction cost. These estimates must be carefully reviewed to make sure the full extent of the proposed project scope is included, and the estimates should still be Agency verified for reasonableness using other independent resources.

Regardless of the method used to develop the construction cost estimate, the cost should be adjusted with an escalation factor to make the costs representative to the future time associated with the project's expected start of construction (potentially 1½ to 2 years in the future from time of the funding request). The annually updated COBS User Guide issued by OPB contains information on reasonable project escalation rates.

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2. **Total Project Cost**

The determination of the construction cost is used as the basis to develop the Total Project Cost, which is the summation of all associated project costs, and which will be used as the amount of the state funding requested, offset by any non-state project funding.

Typically the Total Project Cost includes, but is not necessarily limited to, these items as applicable for the proposed project:

- Property acquisition cost (and associated legal fees) if needed and part of the project,

- Construction cost including construction manager costs for CM/GC or Design Build delivery method (discussed above),

- Professional Architectural /Engineering design and construction administration services (and additional services),

- Program Manager or CM/Agent costs,

- Special consultant support and services for necessary investigations, inspections, environmental evaluations, and surveys,
- Commissioning services,
- Loose Equipment and Furniture,
- Project Contingency (depends on type of project, see COBS User Guide).

PROJECT IMPLEMENTATION PLAN

Project Title: Research Annex
Institution / Campus: Johnson Technology Center, Northlake Campus
Location, City / County: Woodbridge, Davis County

COST SUMMARY	Cost by Item		Cost by Phase				
	% of TCC	Amount	Planning / Predesign	Property Acq	Design	Construction	Equipment & Furniture
1. Planning / Predesign / Programming		$34,000	$34,000 100%				
2. Property Acquisition				100%			
3. **Total Construction Cost** [TCC] (escalated per schedule)		$5,890,000				$5,890,000 100%	
4. A/E Design & Construction Administration	7.1%	$420,000			$294,000 70%	$126,000 30%	
5. Proj. Manag. or Construct. Manag. Support: PM	0.6%	$35,000			$21,000 60%	$14,000 40%	
6. Inspection, Testing, Surveys	1.3%	$75,000				$75,000 100%	
7. Commissioning	0.8%	$50,000			$5,000 10%	$45,000 90%	
8. Construction Monitoring / Inspection						100%	
9. Loose Equipment & Furniture	13.6%	$800,000					$800,000 100%
10. Other - **Environmental Site Analysis**	0.3%	$15,000			$15,000 100%		
11. Other - **Support for Property Transfer**	0.2%	$10,000		$10,000 100%			
12. Other - _____							
13. Other - _____							
14. **Subtotal** (without Project Contingency)		$7,329,000	$34,000 0.5%	$10,000 0.1%	$335,000 4.6%	$6,150,000 83.9%	$800,000 10.9%
15. Project Contingency	% of Subtot 5.0%	$365,000			$14,600 4%	$350,400 96%	
16. **Total Project Cost** - *Calculated*		$7,694,000	$34,000	$10,000	$349,600	$6,500,400	$800,000
17. **Total Project Cost** - *Used for Funding Plan*		$7,694,000	$34,000	$10,000	$350,000	$6,500,000	$800,000
		Amount	Planning / Predesign	Property Acq	Design	Construction	Equipment & Furniture

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PROJECT DELIVERY METHOD *check appropriate box*
☑ Design-Bid-Build
☐ CM/GC (CM @ Risk)
☐ Design/Build
☐ Other - _____

PROJECT PHASE	Phase Managed by:	*SCHEDULE* Start	End
Planning/Predesign	Agency	09/2009	04/2010
Property Acq	Agency	01/2010	05/2010
Design	GSFIC	11/2011	09/2012
Construction	GSFIC	11/2012	02/2014
Loose Equipment	Agency	01/2014	03/2014
Occupation / In Use Date			04/2014

FUNDING PLAN	Cost Total	Project Funding by State Fiscal Year: All Prior	Request FY 2012	Outyear Funding Projections FY 2013	FY 2014	FY 2015	FY 2016	Funding Plan Total
Planning/Predesign	$34,000	$34,000						$34,000
Property Acq	$10,000	$10,000						$10,000
Design	$350,000	$6,000	$344,000					$350,000
Construction	$6,500,000			$6,500,000				$6,500,000
Loose Equipment	$800,000				$800,000			$800,000
Total	$7,694,000	$50,000	$344,000	$6,500,000	$800,000			$7,694,000
Less Non-State Funding								
1) **Foundation**	$1,000,000			$1,000,000				$1,000,000
2) **Private Sector**	$150,000				$150,000			$150,000
3)								
Total Non-State	$1,150,000			$1,000,000	$150,000			$1,150,000
Total State Funds	$6,544,000	$50,000	$344,000	$5,500,000	$650,000			$6,544,000

Figure 21: OPB Project Implementation Plan

Figure 21 shows a completed example of a Project Implementation Plan (Excel worksheet available from the Office of Planning and Budget). The Total Project Cost estimate is presented in the upper section of the worksheet with the cost items spread by the various project phases such as design and construction. The COBS User Guide, also prepared by the Office of Planning and Budget, has additional guidance material on associated project costs. Another resource is the Georgia State Financing and Investment Commission, Construction Division, able to provide assistance to agencies in determining associated project costs for a given project based on previous project experience.

C9. Project Funding Plan

Once the Total Project Cost is determined, the Project Funding Plan by state fiscal year must be established. The funding plan must have the Total Project Cost equal the Total Project Funding. Project funding amounts must be shown for:

- All prior approved and appropriated project funding,
- Requested funding for the upcoming fiscal year budget, and
- Future outyear funding projections by fiscal year needed to complete the project funding.

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The bottom section of Figure 21 includes an example of a completed project funding plan as part of the Project Implementation Plan.

Often some projects are jointly funded in partnership with non-state sources (e.g., Federal, local government, foundations, etc.). If this is the case, then separate funding amounts by fiscal year should also be determined and presented for each non-state funding source, with the unfunded balance in each fiscal year to be the amount requested to be funded from state sources (generally through the sale of state General Obligation Bonds) to establish the Total State Funding by fiscal year. Again, remember the fiscal year funding plan should be compatible with the project activity/phase schedules and the expected project delivery method and consistent with planned contractual award and activity initiation dates. Agencies should be aware that for bond funded projects, actual funds availability may be several months into the fiscal year appropriated as the state's bond sale schedule may vary each fiscal year based on current and projected financial conditions, and does not automatically occur on July 1st of the fiscal year.

C10. Total Cost of Ownership and Operation

The Total Cost of Ownership and Operation of a facility documents the annual recurring costs and revenues (i.e., parking fees, dormitory rent, and other costs and revenues as applicable) for a project. After the "first costs" of development (i.e., Total Project Cost), there are continuing costs for such items as:

- Utilities,
- Telecommunications,
- Insurance,
- Security,
- Maintenance,
- Replacement and repair of equipment and facilities,
- Financing costs (debt service, lease payments),
- Personnel and staffing,
- Contracts and contract labor,

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The *Total Cost of Ownership* considered with the *Total Project Cost* should support the conclusions made during the Project Identification and Initial Planning Phases. Specifically, the Identification Phase (See SCM Chapter 2.2 [D]: Project Identification) evaluated the proposed project to ascertain whether new construction, renovation, lease, or purchase of an existing facility would be the *best* solution to meet the Agency's needs.

Although OPB does not require the Total Cost of Ownership Worksheet on all request submittals shown in Figure 22, it may be helpful to agencies during project development and implementation. Further information and guidance on preparation of this worksheet is available from OPB in the COBS User Guide (v6.1).

SAMPLE TOTAL COST OF OWNERSHIP WORKSHEET

Project : New Administration Building, Adamsville #403-2005-0006 — ILLUSTRATIVE EXAMPLE, DO NOT USE CITED COSTS

Initial One-Time Non-Recurring Costs	Comment or Unit Type	# of Units	Unit Cost ($ /Unit)	Cost = (#) x ($/Unit)	Cost / GSF	% of TPC
Property Acquisition				$0	$0.00	0.0%
Design & Consultants				$550,000	$13.75	8.2%
Construction [CC]	GSF	40,000	$129	$5,146,800	$128.67	76.9%
Furniture & Loose Equip [F&LE]				$750,000	$18.75	11.2%
Other Costs & Contingency				$250,000	$6.25	3.7%
TOTAL INITIAL ONE-TIME COSTS				$6,696,800	$167.42	100.0%

Annual Recurring Costs & Revenues	Comment or Unit Type	# of Units	Unit Cost ($ /Unit)	Cost = (#) x ($/Unit)	Cost / GSF	% of TPC
I Facility Operations & Maintenance						
A Utilities		40,000	$2.45	$98,000		
1 Electric				$0		
2 Gas				$0		
3 Water				$0		
4 Sewer				$0		
5 Sanitation / Waste Removal				$0		
6 Other _____				$0		
B Telecommunications	# Phone Lines	200	$1,000.00	$200,000		
C Insurance				$0		
1 Contents: Loose Equip & Furniture	FY07 Rate - DOAS	750,000	$0.0009	$675		
2 Facility [Fixed Asset]	FY07 Rate - DOAS	5,000,000	$0.0009	$4,500		
D Security				$0		
1 Staffing	# of FTE			$0		
2 Contracted		40,000	$2.53	$101,200		
E Maintenance, Custodial, & Grounds				$0		
1 Staffing	# of FTE			$0		
2 Contracted		40,000	$4.65	$186,000		
3 Supplies				$0		
F Facility Admin & Management				$0		
1 Staffing	# of FTE			$0		
2 Contracted		40,000	$0.97	$38,800		
G Other Costs or Services				$0		
1				$0		
2				$0		
Subtotal Facility O&M Costs				$629,175	$15.73	9.4%
II Replacement / Rehab Allocation						
A Furniture & Loose Equipment	% of F&LE Cost	750,000	12.0%	$90,000		
B Facility Rehab	% of CC	5,146,800	1.5%	$77,202		
Subtotal Replace & Rehab Costs				$167,202	$4.18	2.5%
III Financing Costs						
A Debt Service	20-Yr Bonds, 5.75%	6,696,800	0.08543	$572,108		
B Lease Payments						
Subtotal Financing Costs				$572,108	$14.30	8.5%
IV Operational Staffing - Personal Services						
A Staffing - by Type				$0		
1 Type 1: Professional_____	# of FTE	140	$48,500.00	$6,790,000		
2 Type 2: Clerical_____	# of FTE	20	$32,000.00	$640,000		
3 Type 3: Managers_____	# of FTE	10	$57,000.00	$570,000		
4 Type 4: _____	# of FTE			$0		
B Contracted				$0		
1				$0		
2				$0		
Subtotal Operational Staffing Costs				$8,000,000	$200.00	119.5%
V Other Operational Costs - *Not Included Above*				$0		
1				$0		
2				$0		
Subtotal Other Operational Costs				$0	$0.00	
TOTAL ANNUAL RECURRING COSTS				$9,368,485	$234.21	139.9%
VI Annual Revenues						
1 Concession stand	Monthly lease amt	12	$250.00	-$3,000		
2				$0		
Subtotal Revenues				-$3,000	-$0.08	0.0%
TOTAL NET ANNUAL RECURRING COSTS				$9,365,485	$234.14	139.9%

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Figure 22: OPB Total Cost of Ownership

D. APPROVALS

Agency approval of the *Funding Request Document* represents completion of project development and preparation for the start of formal project implementation (design and construction). Each Agency may have different internal policies and procedures for preparing, reviewing, ranking, and approving annual funding requests for both ongoing programs and capital outlay projects. Prior to submission to the Office of Planning and Budget, final approval will be confirmed by the appropriate Agency administrators.

The Agency's formal budget request to the Office of Planning and Budget includes the *funding request* for capital projects. When approved for submission by the Agency, the agencies will then enter, update, and confirm the necessary information and documentation on the OPB Capital Outlay Budget System (COBS) Worksheets. The Office of Planning and Budget: Capital Budgeting Division reviews all Agency requests submitted into the COBS system and provides recommendations.

OPB assists the Governor in developing budget recommendations for the next State fiscal year. In the months preceding the convening of the State Legislature, budget hearings are conducted to review Agency funding requests. These hearings include principally the Governor, Office of Planning and Budget, and Agency executives. At the conclusion of these budget hearings, a final State budget recommendation (*Governor's Budget Report*) is published and submitted to the legislature.

During the legislative process, some capital projects may be added, deleted, or amended in scope, funding, and schedule. Approval of the Appropriations Act by the State Legislature and signing of the bill by the Governor constitutes final approval of the funding but does not complete the Funding Request Phase.

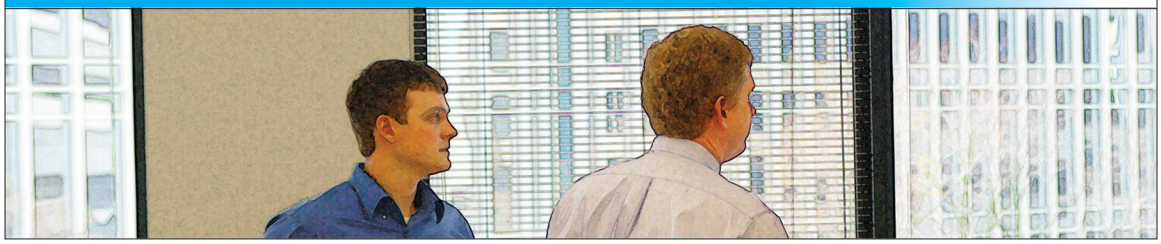
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As previously explained in SCM Chapter 2.1 (B): Introduction, in the State of Georgia Capital Outlay Funding Process, no Agency can execute contracts or commit State funds for any purpose unless (1) the proposed expenditure has been authorized, and (2) funds are actually available. As further explained in this section, if the project is authorized by "cash," the funds are disbursed as coordinated through the Office of Planning and Budget and State Treasury.

If funds are to be disbursed through the sale of bonds, this process must now begin with the Georgia State Financing and Investment Commission (GSFIC). The sale of bonds through the GSFIC is generally coordinated with the schedule of need, market conditions, and other financial factors. The Agency requesting the funds for a capital project should communicate with the GSFIC Financing and Investment Division to ensure that the proposed project schedules and start of Project Implementation Phase are coordinated.

With the approval of project funds, the Funding Request Phase is complete and the project moves to those activities defined in *SCM Section Three: Project Implementation*.

Section Three: Project Implementation
Chapter 3.1: Project Delivery Method



A. PURPOSE

The Project Implementation section of the State Construction Manual (SCM) addresses the phase of the project after it has been formally funded or at least been approved for funding. This section includes those activities necessary for selection of the Management, Design and Construction Professionals of the project team completing the requisite Final Project Definition Phase activities, selecting the project delivery method, managing the design and construction process, and the Contract Closeout Phase activities.

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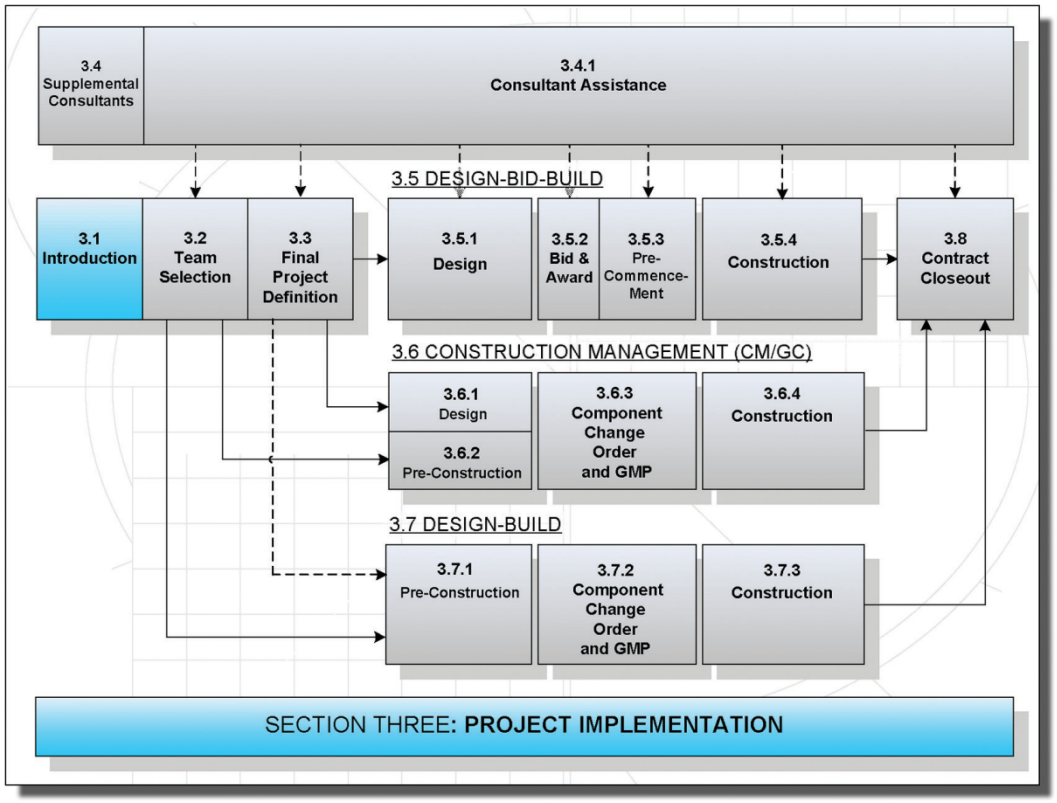


Figure 23: The Project Implementation Flow Diagram

The Final Project Definition process continues and validates the information previously described in *SCM Chapter 2.3: Initial Planning* and *SCM Chapter 2.4: Funding Request*. Ideally, the project's programmatic information, cost, project delivery methods, and similar information have been sufficiently addressed in the previous activities, leading to the agency's approval to move forward with the capital construction project and the funding in the State budget.

The Project Implementation Phase includes the final definition of the project. *Best practice* suggests that the finalization of the project program requirements, cost estimate, and implementation schedule should be best reconciled by the selected Design Professional and Construction Professional at the initiation of the design activity, validating all project objectives are achievable.

B. PROJECT DELIVERY OPTIONS

Multiple project delivery options are now available to most Georgia public agencies. Within the State of Georgia, the three primary delivery methods are:

1. Design-Bid-Build (DBB),
2. Construction Management/General Contractor (CM/GC), and
3. Design-Build (DB).

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The choice of a delivery method impacts the project team composition, the budget, the schedule of the project management plan, and how risks inherent to the project risk will be assigned. While no one project delivery option is perfect for all applications, one option may be better suited than another based on the unique requirements for an agency's particular project. The requirements for each project should be evaluated to determine which of the various project delivery options would most likely produce the best outcome for the State. Factors to be evaluated that affect the choice of delivery options include:

- An accelerated completion schedule,
- A schedule that requires overlapping phases,
- The clarity of scope definition and program,
- A potential for change in scope and program,
- The agency's internal project management resources,
- A desire/requirement for single or multiple contracts,
- Regulation of funding considerations, and
- Project complexity.

GEORGIA CONSTRUCTION PROJECTS DELIVERY OPTIONS
with Solicitation Methods for Design and Construction Professionals

Project Delivery Method	Solicitation Method	
	Construction Professional	**Design Professional**
Design-Bid-Build (DBB)	ITB or BVS	QBS
Construction Management/ General Contractor (CM/GC)	QBS	QBS
Design-Build (D/B)	QBS (one combined Design/ Build contract)	

ITB = Invitation to Bid
| Competitive Sealed Bids
QBS = Qualification Based Selection
| Non-priced Proposals
BVS = Best Value Selection
| Competitive Sealed Cost Proposal

Figure 24: Project Delivery Options

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The following is a brief overview of each delivery method:

B1. Design-Bid-Build

Design-Bid-Build is the most common project delivery option and is often referred to as the *traditional option*.

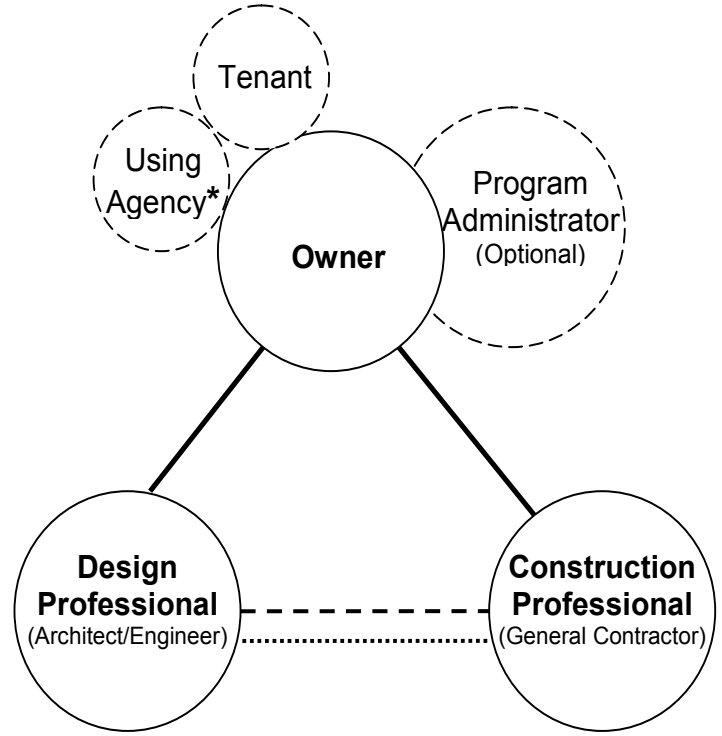
Design-Bid-Build: RELATION OF KEY STAKEHOLDERS

There are three prime stakeholders:

- The Owner
- The Design Professional
- The Construction Professional

There are two primary contracts:

- Owner/Design Professional
- Owner/Construction Professional



* if GSFIC is contractual Owner

Contract

Communications

Contractual Coordination Requirements

Figure 25: DESIGN-BID-BUILD: RELATION OF KEY PLAYERS

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The Design Professional completes a set of Construction Documents based on the Owner's program of requirements. The completed Construction Documents are used for construction bidding. A Construction Professional is selected based on the lowest responsible and responsive bid proposal. The Owner contracts for construction with the successful Construction Professional and the project is built.

The Design Professional is not the agent for the Owner and shall provide services to the extent provided in the Design Professional contract. While the Construction Professional selection is based on this lowest responsive bid proposal, there are opportunities for establishing a prequalified list of bidders based on objective pre-qualification criteria. The project schedule is dictated by the linear sequencing of each of the project phases.

Even though the basic Design-Bid-Build process is similar to the standard construction industry process, there are some features specific to the State of Georgia's process. The current Design-Bid-Build Design Professional Contract and the current Design-Bid-Build Construction Contract have specific language defining the difference between basic and additional service for the Design Professional and definitions of the requirements for both the Design Professional and Construction Professional for the Pre-Commencement, Material Completion, Final Completion, and Contract Closeout Phases. These documents place a greater emphasis on cost control and schedule management activities than earlier versions of documents used by GSFIC.

B2. Construction Management (CM/GC)

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The construction entity that takes responsibility in this project delivery method is typically chosen on the basis of qualifications, and this option of selection is available to the State of Georgia. With this option, the Construction Manager/General Contractor's (CM/GC) fee, estimated general conditions costs, and pre-construction services cost may be considered for the selection process.

The Design Professional and the CM/GC are under separate contracts. For the Design Professional, there is the current Design Professional Contract (CM/GC), and for the CM/GC, there is the current Construction Management Agreement (CM/GC). The Owner may utilize outside consultants for project management or other functions. The construction portion of the project cost may be defined as a lump sum bid or a Guaranteed Maximum Price (GMP) change order rather than a fixed bid. When a GMP is accepted prior to completion of design, this delivery method will often accelerate the schedule. The Design Professional initiates the design based upon the Owner's program of requirements. Prior to completion of the Construction Documents, the CM/GC is selected and placed under contract for preconstruction services to consult with the Design Team on project cost, project schedule, constructability, and quality control reviews.

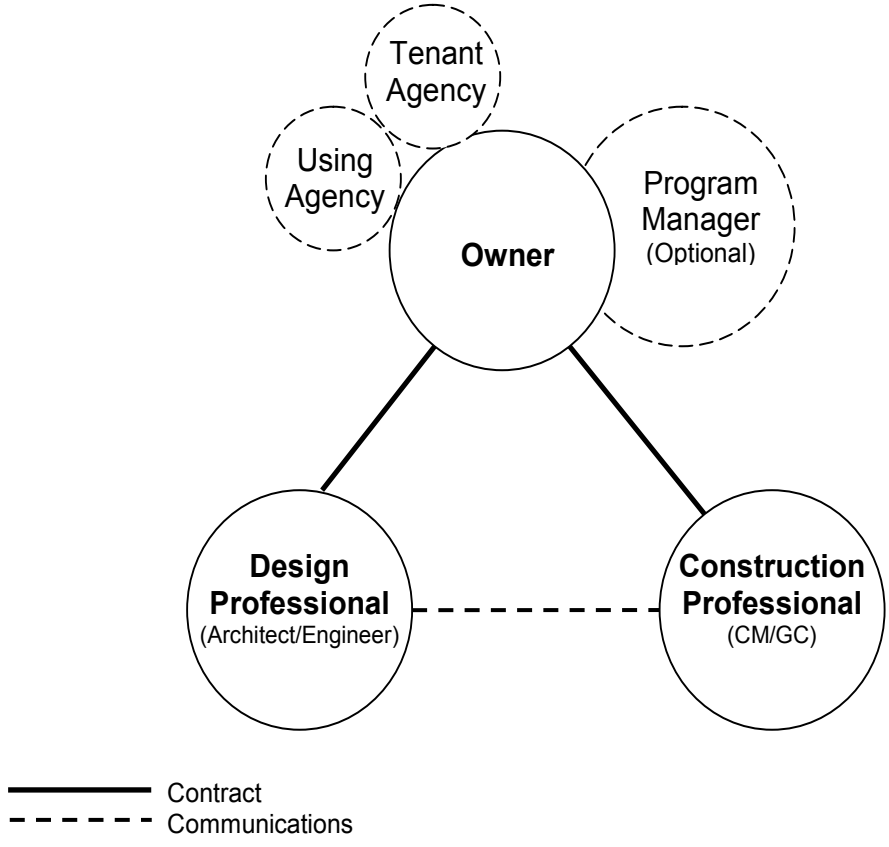
CONSTUCTION MANAGEMENT (CM/GC): RELATION OF KEY STAKEHOLDERS

There are three prime stakeholders:

- The Owner
- The Design Professional
- The Construction Professional

There are two primary contracts:

- Owner/Design Professional
- Owner/Construction Professional



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Figure 26: CM/GC: RELATION OF KEY PLAYERS

The Owner also contracts with the CM/GC who then contracts with various trade contractors for construction of the project based upon a Component Change Order (CCO), which authorizes phases of the work. The Design Professional is not the agent for the Owner and shall provide services to the extent provided in the General Conditions of the Construction Management Agreement (CM/GC).

This project delivery method can accommodate overlapping of the project phases and allows early award of construction packages as soon as the phased Construction Documents are completed. The Material Completion, Final Completion, and Contract Closeout activities are the same as for Design-Bid-Build.

B3. Design-Build

Under this project delivery method, the Design Builder is part of a single point of responsibility for both the design and construction of the project. For the Design Builder, there is the current Design-Build Construction Contract. Selection is usually qualification based and the construction cost component of the criteria is often in the form of a Guaranteed Maximum Price (GMP) Component Change Order (CCO) process. There are two prime players: the Owner and the Design Builder.

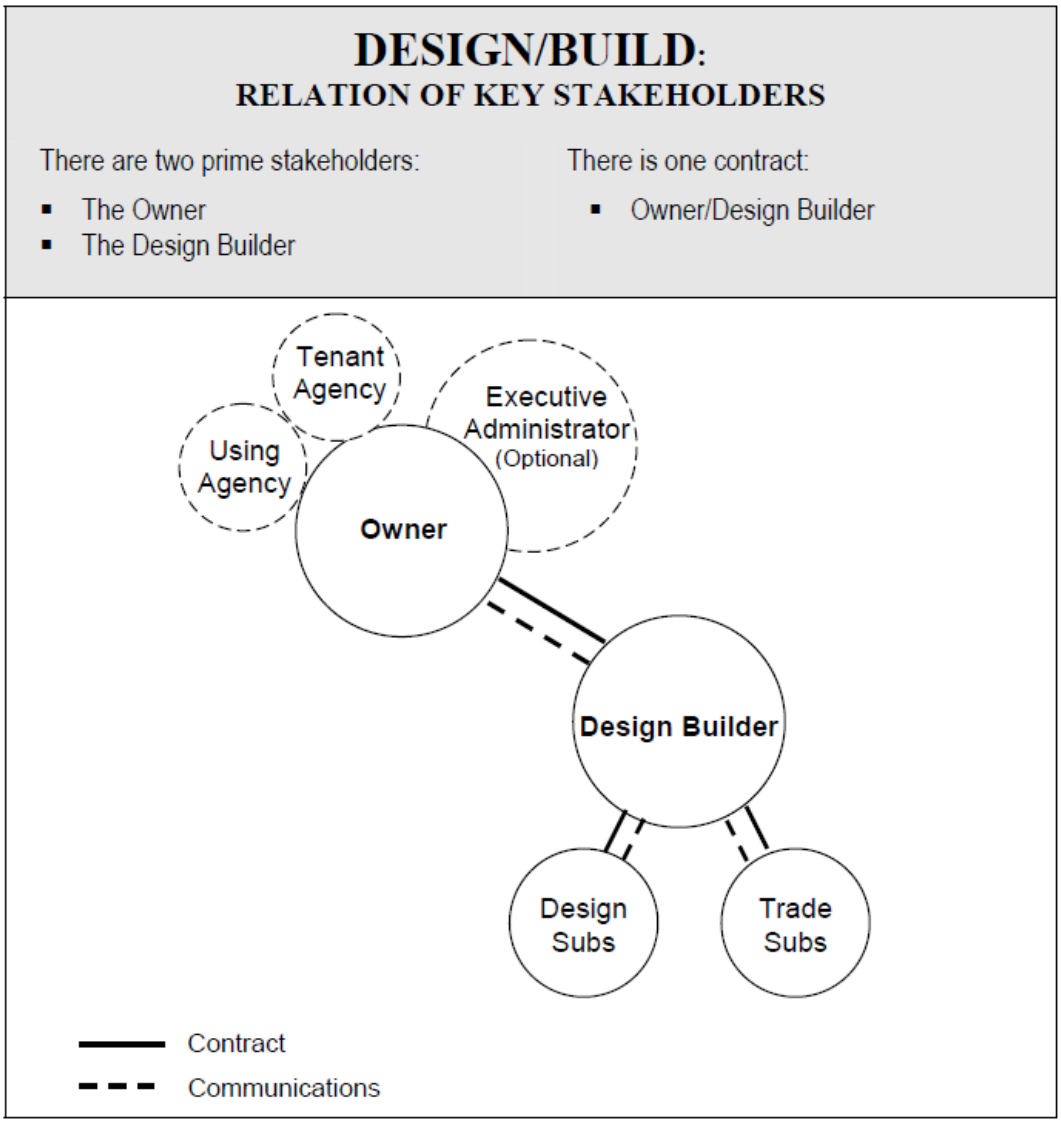


Figure 27: Design Build: Relation of Key Players

The Owner determines directly, or through consultants, the project's program of requirements and criteria that sufficiently describe the project. This program of requirements and criteria are delivered to the Design-Build firm to serve as the basis of the design for the project until the GMP Component Change Order is accepted. The GMP and the accompanying Construction Documents become the project definition when the GMP is accepted.

The Design Professional is not the agent of the Owner and has no authority to act on behalf of the Owner except to the extent provided in the General Requirements of the Contract unless otherwise specifically directed by the Owner in writing. The Design Builder is responsible for adequacy, accuracy, and completeness of design and subsequent delivery of the entire project. The Construction Professional component of the Design-Build firm provides pre-construction services for constructability and budget reviews.

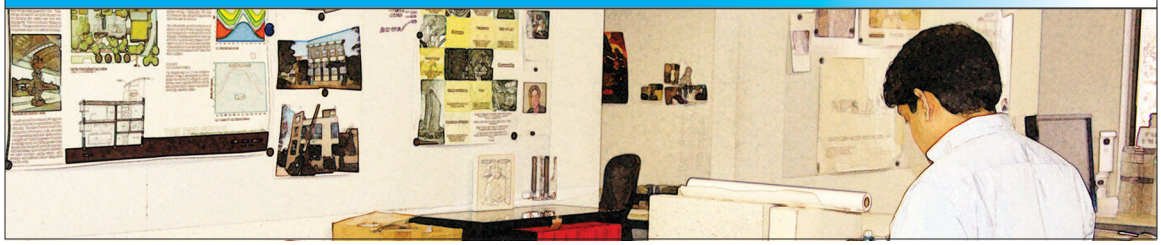
The Owner may hire an Executive Administrator, who is available for all delivery methods, to act as the Owner's representative to provide the management and oversight for the design and construction for the project.

This project delivery method can accommodate overlapping of the project phases and allows early award of the construction packages as soon as the phased Construction Documents are completed. The Material Completion, Final Completion, and Contract Closeout activities are the same as for Design-Bid-Build.

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SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.2: Team Selection



A. PURPOSE

The recommended Team selection procedures set forth in this section are designed to assist Georgia government entities in the selection of Professional Design, Management and Construction Services .

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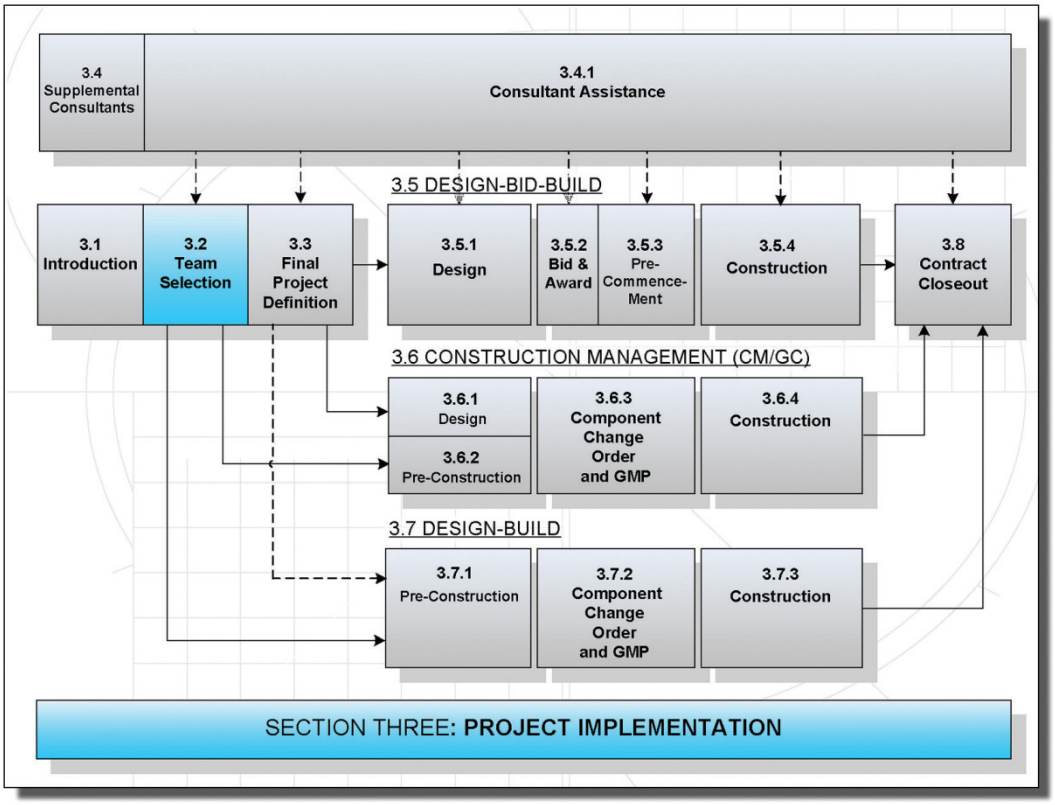


Figure 28: Project Implementation Flow Chart

A1. Authorization to Contract

Agencies have various needs, levels of experience, and authority for selecting and contracting with Design and Construction Professionals. Early in the development of a project, an agency may hire a professional consultant for any of the various activities associated with defining or developing a project, e.g., feasibility study, programming, site assessment, cost estimate, and similar activities.

It is recommended that the process to select firms for State construction-related services be managed by an experienced Contracting Officer certified by an accepted governmental contracting or procurement institute, association, or society.

Sometimes called the Issuing Officer, the Contracting Officer usually serves as the Selection Manager and is responsible for procurement schedule coordination, materials distribution, and meeting facilitation (including bid openings, evaluation meetings, and interviews). In addition, the Selection Manager or its designee is the *sole point of contact* for interested firms and prospective proposers from the advertisement of the procurement opportunity through the announcement of contract award. This role is extremely important because a single point of contact: (1) helps maintain the integrity of the procurement process, (2) reduces the risk of undue influence or pressure on the agency or the Selection Committee, and (3) maintains a consistent and orderly flow of information at the appropriate time and in the appropriate manner.

Ultimately, if a project is to become a reality, a construction contract is necessary. Not all agencies are authorized to engage in construction contracting.

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GSFIC and BOR routinely procure various services related to design and construction. State of Georgia entities embarking on *construction* projects that are not procured or administered by GSFIC or BOR should make certain that they are legally empowered to do so and determine if they are eligible to use the following procedures. Differing internal and external advertising and bidding parameters, dollar amount thresholds, and/or procurement limitations may exist from one State entity to another. For questions related to construction services procurement or the procedures set forth in this section, contact GSFIC or BOR at:

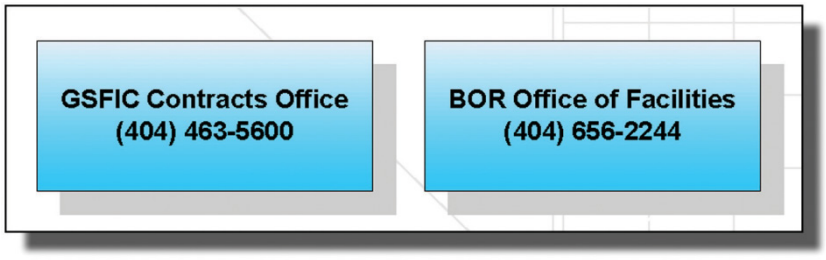


Figure 29: Contact Telephone Numbers for GSFIC and BOR

The selection of a team is ultimately codified in a contract between the selected firm and the Owner of the project. GSFIC typically serves as the *Owner* for all construction projects financed, in whole or in part, with State General Obligation (GO) Bond funds; however, contracting authority is delegated to some State agencies, such as the BOR. GSFIC also serves as the Owner for any construction projects administered by GSFIC, regardless of fund source. The BOR serves as the Owner for construction projects for the University System of Georgia which are funded with non-public dollars (e.g., private donor monies, grants, and similar funding).

These procedures are based on GSFIC's and BOR's methods, since both GSFIC and BOR administered construction projects comprise the overwhelming majority of construction projects conducted by the State.

A2. Selection Methods

The State uses the following procurement methods:

1. Invitation to Bid (ITB)

   Owner makes award to the firm submitting the lowest responsible and responsive bid.

2. Best Value Selection (BVS)

   Awarded to the firm deemed by the Owner to have submitted the best value proposal. The Owner uses weighted criteria to evaluate a combination of total cost and other factors in the selection. At the Owner's sole discretion proposals may be subject to negotiation if all proposers submit pricing over the budget.

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3. Qualifications Based Selection (QBS)

   Awarded to the firm deemed by the Owner to be the most qualified firm, without the consideration of cost or fee. The Owner uses weighted criteria to evaluate qualifications-related factors in the selection. An actual offer of a contract is subject to negotiation between Owner and proposer.

(a) Invitation to Bid (ITB)

Competitive bidding is traditional in Design-Bid-Build Construction Professional selection, and can be used for selecting general contractors, FF&E vendors and other firms when the contract documents and/or scope are defined. To solicit any interested firms, the Owner advertises and issues an ITB through a solicitation on the Department of Administrative Services Georgia Procurement Registry. A bid is an offer to provide labor, materials, equipment, and services for the construction of a specific project for a specified price. The premise of competitive bidding in public construction is that it will allow for fair and open competition by bidders. A responsive bid is an unequivocal offer to do everything required by the Bidding and Contract Documents, without exception. A responsible bid is one that demonstrates that the bidder meets the minimum qualifications required by the Contract Documents to complete the work.

(b) Best Value Selection (BVS)

For certain construction-related services, the Owner may be interested in receiving cost information along with information related to the qualifications, and/or project methodologies proposed by the submitting firm. The premise is that a complex evaluation of the combination of these factors will result in the selection of the firm that has submitted the best value proposal.

To solicit any interested firms, the Owner advertises and issues a Request for Qualifications/Request for Proposal (RFQ/RFP). A proposal is submitted for consideration by the Owner, in full response to the Owner's request. Upon receipt and review of responses, the Selection Committee will determine the party(s) and proposal that, in the judgment of the Selection Committee, is in the best interest of the Owner (if any is so determined), according to the evaluation criteria stated in the RFP.

The best practice for competitive consideration of best value is to determine, while developing the solicitation documents, the degree of relative importance that the project cost has to qualifications. It is then necessary to establish a weight for cost evaluation versus qualifications, usually expressed as a percentage of the overall evaluation.

To limit any undue or improper consideration of project cost, the consideration of qualifications information should be "blind" to the project cost by the use of the following controls:

1. The scores and ranking of the qualifications information of firms, including any interviews, must be completely finalized prior to opening the separately sealed cost proposals.
2. The cost proposals are scored using a predetermined scale.
3. The cost scores are combined with the final qualifications ranking for an overall selection of a top-ranked or best-value proposal.
4. The Selection Committee shall use industry recognized best practices to ensure the selection committee is able to complete a fair and open process free from any political influence.

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(c) Qualifications Based Selection (QBS)

Qualifications-Based Selection (QBS) is a type of selection for services based on qualifications and past performance for those services. That is not to say that fees are unimportant. Fees are important in the contracting process, but not in the *selection* process. Instead, QBS allows firms to compete initially solely upon their qualifications and demonstrated expertise.

In order to maximize the competitive opportunity for firms as well as promote an efficient evaluation, a two-step process is recommended for qualifications-based selection. In step one, firms are invited, via a publicly-advertised *Request for Qualifications* (RFQ) solicitation document, to submit *Statements of Qualifications*. These submittals should contain comprehensive qualifications and experience data relevant to the project at hand. Upon evaluation by the Selection Committee, three to five firms determined to be especially qualified are invited to prepare project proposals and submit to a formal interview.

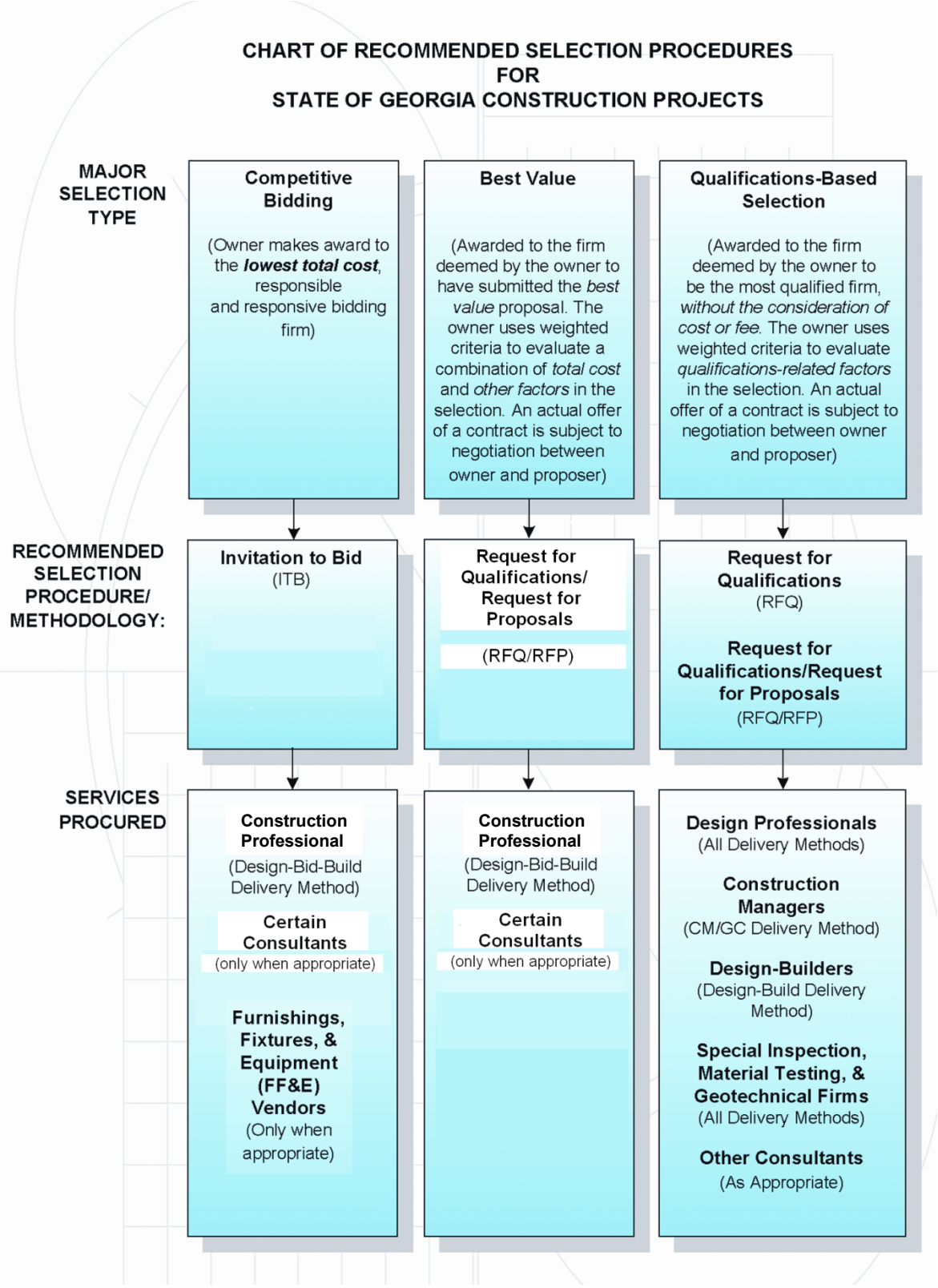
Among other information requested, the project proposal includes proposed team qualifications and experience data that specifically relates to the project at hand, and other project-related plans and methods.

Finalist firms are further ranked by the evaluation of the project proposals interview. At the interview, firms will present their proposed fees in a sealed envelope. After the committee determines the top-ranked firm, only that firm's fee proposal will be opened, and a meeting with the firm to negotiate the final fees will be arranged. Having settled fees, the firm may be offered a contract to sign. If there is no agreement on fees or contract with the top-ranked firm, negotiations with that firm will be terminated. The State will then proceed to negotiate in the same manner with the second-ranked firm, and so on, until an agreement is reached. Any unopened fee proposals shall be returned unopened to the firms that submitted them upon the execution of a contract with the successful firm.

The selection of Construction Manager/General Contractors (CM/GCs) and Design Builders (DB) should be qualifications-based for a variety of important reasons that include: (1) the vast majority of the cost risk associated with projects using CM/GC and Design-Build services is directly related to the quality of services, and therefore to the qualifications of the CM/GC or Design-Build firm; (2) proposed fee percentages associated with CM/GC and Design-Build services often tend to fall in a "normal" range, and even a partial consideration of the fees in CM/GC and Design-Build selection will tend to dilute the meaningful comparison of competing firms; (3) differentiation between competing firms' fee proposals as they relate to actual Owner costs is fraught with difficulty without detailed negotiation with all proposers on project costs, which is not practicable; and (4) CM fees represent a small percentage of the construction cost. The cost of work is, by far, the largest cost factor.

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TABLE 1: RECOMMENDED SELECTION PROCEDURES



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B. SELECTION PROCEDURES

Provided, below, are locations in the manual for the recommended selection procedures for various construction-related services. Note that the General Contractor selection procedures are located in a Subchapter of *SCM Chapter 3.5: Design-Bid-Build*.

1. Chapter 3.2 (B1): Selection of Consultants (including the Design Professional, Design Team, Executive Administrator, Program Manager, Commissioning Agent and other General Consultants).
2. Chapter 3.2 (B2): Selection of Construction Manager/General Contractors (CM/GCs) or Design Builders.
3. Chapter 3.2 (B3): Selection of Special Inspection, Material Testing, and Geotechnical firms.
4. Chapter 3.2 (B4): Selection of Vendors for Furnishings, Fixtures & Equipment (FF&E).
5. Chapter 3.5.2 (Bid & Award): Selection of Construction Professionals.

The selection procedures detailed in this manual describe the most thorough and best practices in the industry for use on large and complex projects. Judgment and care should be used in the streamlining of these processes to address smaller projects, as necessary.

Consideration must be given to meeting the spirit and intent of these procedures and to ensure that requirements of the Georgia Code for Public Works contracting and qualifications-based selection are met.

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B1. Selection of Consultants

Selection of Consultants (including the Design Professional, Design Team, Executive Administrator, Program Manager, Commissioning Agent and other general consultants)

The recommended selection procedures set forth in this section are designed to assist Georgia State government entities using the project delivery methods used by the State.

These procedures are based on GSFIC and BOR's use of Qualifications-Based Selection (QBS) methods. Since both GSFIC and BOR-administered construction projects comprise the overwhelming majority of construction projects conducted by the State, and the selection of a consultant is qualifications based for a variety of important reasons, differentiation between competing firms' fee proposals as they relate to actual Owner costs is fraught with difficulty without detailed negotiation with all proposers, which is not practicable. See SCM Chapter 3.2 B1 (n): Variations in the Standard Selection Steps.

The selection of a consultant is usually qualifications-based for the following reasons: (1) It is required by state statute; (2) The vast majority of the cost risk associated with consulting services in State construction projects is directly related to the quality of consulting services, and therefore to the qualifications of the consultant; (3) Fees for basic services fall in a normal range and can be ascertained from a range of fees based on a project type; and/or (4) The required scopes of services are often not completely foreseen at time of selection.

The following items are essential elements and tasks of the qualifications-based selection process, arranged in the suggested order in which they should be completed. Basic instructions for completing these tasks are included. These are intended to be applicable to consultant selection generally, but some projects may require differing tasks and instructions.

(a) Gathering Information

Prior to the selection of a consultant, agencies should gather critical information and confirm the necessary direction of the existing project program. Major items to confirm (and revise if necessary) include the following:

1. Confirm and revise, if necessary, any predesign studies, program analyses, or program executive summaries.
2. Make certain that the overall schedule has been updated or, if not, necessary adjustments have been made.
3. Ensure that funding has been allocated for the required service. Entities should indicate in the advertisement the extent of services that the available funding is intended to cover.
4. Make certain that the consulting services scope has been properly defined and updated.
5. Identify the appropriate project delivery method.

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6. Confirm that the Project Implementation Budget has been reconciled with the appropriated funds.
7. Ensure that the management plan has been identified.

If any of the above items are not completed, agencies should take necessary steps to reconcile the appropriate items before initiating the selection process.

(b) Selection Committee Appointment

Prior to advertisement of a construction project procurement opportunity, the appropriate Owner/Agency head(s) or their designee(s) should identify appropriate staff members to serve as a Selection Committee. Selection Committees for major construction services should be comprised of varied, unbiased, responsible, and professional individuals. The committee may include representatives from the Owner's professional staff, facility operations/maintenance, agency management, or other internal stakeholders in the project.

The size of the actual voting committee should be an odd number and is generally limited to three to five individuals, not including the Selection Manager. The Selection Manager shall be a non-voting member of the Selection Committee whose responsibility is to guide and facilitate the process.

It is important that committee makeup remain as consistent as possible in order to maximize information assimilation and maintain a consistent overall evaluation process. Verify that there are no real or potential conflicts of interest before finalizing the committee members. In addition to the voting members and the Selection Manager, support staff may be enlisted to aid in the gathering of procurement-related information and contribute to the evaluation process as necessary.

The Selection Committee must be properly orientated in the process, which should be managed and structured in a way that makes the process as simple and intuitive as possible. However, a significant amount of time and effort is required of a Selection Committee member, and a commitment must be made to allocate time for review of qualifications and proposals and to attend required meetings.

(c) Evaluation Criteria and Scoring Documents

When developing project specific criteria, the Selection Manager, Using Agency, and/or Committee Members should consider which characteristics, experience, and qualifications are needed to complete an evaluation of the firms. A small number of major categories of evaluation criteria should be determined to provide an understanding of which basic attributes are generally considered important by the committee. *Stability of Firm*, *Relevant Experience/ Qualifications of Firm*, *Location of the Firm*, *Performance of the Firm*, and *Suitability of the Firm* are examples of major categories of criteria that are typically used in many selections and are the categories into which most specific project-related criteria will typically fall.

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Detailed, or "granular" criteria (e.g., years of experience of the proposed cost estimator in projects of similar complexity) may be grouped as a component of a major category Appropriate weights shall be assigned to the major criteria categories and communicated to all firms in the RFQ.

In some solicitations/selections, *previous performance* of the firms may be a major criteria category for either the first step (RFQ) of evaluation or in the second step (Selection of Finalists), in which case it will probably be desirable to check references of firms in the appropriate phase. The Selection Manager may provide a Reference Check Matrix containing questions deemed pertinent by the Selection Committee. The form serves as a scoring tool employing information received from the submitting firm's references.

Also, if desired, worksheets may be developed that list the expected deliverables, grouped by major or granular criteria, to assist members in cumulatively assessing the merits of firms during review of submittals. However, such cumulative assessment may also be accomplished in many cases by members simply using the existing RFQ documents or other guides during their individual reviews. It is advisable to allow committee members' latitude in their detailed individual review to utilize to their own study/review techniques.

It is not recommended to formulate extensive matrices, thus increasing the possibility of error and limiting group diversity and the decision-making competence of qualified, professional members. In total, the review and scoring process should not be unnecessarily "dumbed-down" or "computerized." Instead, Selection Committee members should be properly orientated in the process requirements by the Selection Manager.

The Selection Manager should develop scoring forms for both the RFQ and subsequent steps, for use by the voting members of the committee, that reflect the established major criteria categories and weighting and provide for an accurate scoring summary based on the sum of the individual ranking by each member, not on the scores of the firms. More information on scores and ranking is provided in SCM Chapter 3.2 (f): *Evaluation of Statements of Qualifications and Selection of Finalists*. The scoring form should be developed to make the form as intuitive for the scorer as possible, with clear indicators of scorer number, project number, proposing firms, criteria, weighting/points, scores, rank, and sections for notation. An overall committee scoring summary may also be a part of the scoring form, or developed as a separate document. Often, the scoring summary document will serve as a freely-shared record for those interested in the outcome of a selection, and as a tool for debriefings with unsuccessful proposers. The names of the committee members must not be included on the scoring forms and scoring summary documents. Rather, a number should be assigned to each committee member and the individual's number will be a part of the scoring record.

(d) The Solicitation Document (RFQ)

The Selection Manager in collaboration with the Selection Committee will determine or establish the following:

- A schedule of events for the selection,
- Finalize evaluation criteria,
- Establish required deliverables of prospective proposers,
- Establish any minimum qualifications required,
- Determine any unique directions or selection strategies necessary for the individual project.

MFC

This information will be used to develop the RFQ document. The sample Request for Qualifications provides examples of major criteria categories and specific criteria, deliverables, and the schedule of events. Interested firms should be given appropriate time to respond to the RFQ. The RFQ should communicate the schedule for the decision-making process, and the Selection Manager must make certain that every effort is made to adhere to the listed schedule of events.

In order to maximize the competitive opportunity for firms as well as promote an efficient evaluation, a *two-step process* is recommended for qualifications-based selection. In step one, firms are invited, via a publicly advertised Request for Qualifications (RFQ) solicitation document, to submit Statements of Qualifications. These submittals should contain comprehensive qualifications and experience data.

Upon evaluation by the Selection Committee, firms determined to be especially qualified are invited in the second step, by issuance of an instructive Notice to Finalists, to prepare specific consulting services proposals and submit to an interview.

Among other information requested, the consulting services proposal should include proposed team qualifications and experience data that specifically relate to the project at hand, and other project-related plans and methods.

Consulting services for a project can be comprehensive or limited to select services. Because the eventual consulting services are often variable depending on the project complexity, it is important to allow flexibility for Selection Committees in requesting the appropriate information in the second step as the project needs become clearer. Such clarification can typically occur during the period of the search for a consultant. Therefore, it is the practice to NOT issue the RFQ and the Notice to Finalists combined in a single document (RFQ/Notice to Finalists) as it is with the selection of the CM/GC. By not issuing detailed requirements up front to prospective consultants, Selection Committees can more easily communicate additional or unique requirements of all finalists in the second step in the process, customized to the current needs for the Selection Committee. See SCM Chapter 3.2 B1 [n]*: Variations in the Standard Selection Steps*.

(e) Advertisement

Once the RFQ is completed and approved for release, a publicly advertised Request for Qualifications announcing the procurement opportunity is prepared by the Contracting Officer and posted on the internet for public viewing at the Georgia Department of Administrative Service's Georgia Procurement Registry. The advertisement should be posted at least fifteen (15) calendar days prior to the due date for Statements of Qualifications in response to the RFQ. The RFQ is posted along with the advertisement in a manner prescribed by DOAS. In addition, if it is deemed advantageous, the public notice may be published in an appropriate general circulation newspaper or other medium in the vicinity of the project location. Newspaper advertisements should be written as succinctly as possible and should reference the DOAS Web site as the means for finding project details and appropriate documents. For efficiency, more than one project may be advertised in a single newspaper notice.

MFC

The notice on the Georgia Procurement Registry should provide the following information:

1. The Contracting Officer or person to whom requests for the RFQ should be directed,
2. The location of the project,
3. The name of the project,
4. The type of service being procured for the project,
5. The anticipated period of performance,
6. A brief description of the project, including the general character of the project (e.g., classrooms, laboratory, prison, library, and similar characteristics),
7. The approximate physical size of the project,
8. The project's estimated cost,
9. The due date for all responses to the RFQ,
10. State policy information concerning Minority-Owned Business Enterprise (MBE) and Women-Owned Business Enterprise (WBE) contracting opportunities,
11. Any other basic requirements of the responses, including number of copies to be furnished.

The notice should specify the contact to whom all inquiries are to be directed (normally the Contracting Officer or Selection Manager for the procurement). After the project has been advertised in the Georgia Procurement Registry, interested firms *should not conduct any communications involving the solicitation/project with any person other than the specified single point of contact for the procurement*. Failure to adhere to this restriction may result in the disqualification of the firm's submittal.

The RFQ document and any addenda may be posted electronically on the Georgia Procurement Registry, or directly distributed by other means such as E-mail. Regardless of document distribution method, the Contracting Officer or Selection Manager must keep an accurate list of all inquirers and respondents to the advertisement. The list may include specific contact and address information and should be maintained as a part of the overall project procurement record.

(f) Evaluation of Statements of Qualifications and Selection of Finalists

As the deadline for receipt of Statements of Qualifications approaches, the Selection Manager should remind the Selection Committee about the imminent submittals, and other pertinent information (e.g., critical meeting dates, evaluation locations, and other pertinent information). To be helpful, the Selection Manager could provide the voting members with a convenient and concise Guideline for Evaluation (Step I) document that summarizes member duties/deadlines and provides a quick-reference to the specific deliverables expected in the submittals and to all of the evaluation criteria.

Upon receipt of the submittals, copies of all Statements of Qualifications received and validated by the Selection Manager should be immediately distributed to the Selection Committee with corresponding scoring forms.

MFC

The Selection Committee should confirm that all firms meet minimum qualifications. Subsequently, each member of the Selection Committee should review each firm's submittal carefully, frequently referring to the stated evaluation criteria and required deliverables in the RFQ.

If applicable in this RFQ (first) step, usually only if previous performance is a first-step criteria, the Selection Manager may also provide a Reference Check Matrix for a reference check with questions deemed pertinent by the Selection Committee. The form may serve as a scoring tool using information received from the submitting firm's references. The Selection Manager may assign the responsibility for checking the references of the finalist firms to individual committee members.

The person or persons checking references may contact Owner, Design Professional, MBE, WBE, and trade contractor references, among others.

Each member should score the submittals using the provided scoring form. This should be a preliminary score. Before members turn in scoring forms, an evaluation meeting should take place, giving members an opportunity to discuss the merits of the submittals as they relate to the RFQ criteria and deliverables.

Each individual member should present a synopsis of their assessment of the submittals and give any unique perspectives to the criteria that they wish to share. After all members of the committee have presented, an open discussion should follow. At this point, other support staff or consultants may be invited to answer specific questions that committee members may have, but they should refrain from offering unsolicited information unless requested by the committee to speak openly. Upon determining that the committee has received enough information to submit individual scoring, a committee member may move to submit scoring for compilation.

Upon receiving all individual committee member scores, the Selection Manager will calculate all the scores on the Scoring Summary and immediately report the final ranking of firms to the committee. The final ranking is determined by the sum of individual ordinal ranking of the firms, not by the sum of the individual scores. This prevents the difference between one member's opinion of a score and another's opinion of the same score from skewing the results. Three to five firms may be selected as finalists.

The decision on whether to select three, four, or five finalists rests with the committee. The committee may use factors such as a disparity between the firms' sums of individual ranking, or other relevant criteria. Further discussion may be necessary to arrive at a consensus on this decision. Upon conclusion of this ranking, the Selection Manager will ask for the committee's approval of the resulting list of finalists. From the point of the approval forward, the committee should consider all of the finalist firms as equally qualified, and simply eligible for the remaining process. Not until the next step should the committee draw any differentiation between the remaining firms, which will be done by the evaluation of project proposals and interviews.

(g) Notice to Finalists

The Selection Manager should promptly post the list of selected finalists as an update to the original advertisement on the Georgia Procurement Registry. All selected finalist firms should be contacted by written notice, to allow the finalist firms to prepare for any imminent requirements. E-mail transmission may be an appropriate way to make some notifications, but the firm's acknowledgement of receipt is crucial. The Notice to Finalists should include a requirement for the firms to prepare a written response to the Selection of Finalists request and to plan to submit to an interview by the Selection Committee.

MFC

In addition, the notification should specify the steps and requirements in the remainder of the selection process, including the following:

1. Statement of appreciation and congratulations to the finalists for their efforts and success in becoming eligible for further consideration,
2. Schedule of events for the remainder of the selection process,
3. When and where additional current program or Project Development documents will be made available to finalists and when and where the standard procedures and a specimen contract may be obtained,
4. Place/time/host for a mandatory pre-proposal conference and/or mandatory site visits (if appropriate),
5. Schedule/location for interviews (Sequencing of interviews may be determined by a drawing at site visit or other random means.),
6. Invitation to finalists to submit a project proposal, and exact requirements of finalists for their proposals,
7. Criteria for the remainder of the evaluation, including the criteria for the evaluation of project proposals and interviews.

If a pre-proposal conference and/or site visit has been deemed appropriate, the Selection Manager and/or other representative(s) of the Owner and agency representative should attend/walk the site with representative firms. However, all questions regarding the project must be submitted to the Selection Manager, or designee of the Selection Manager, in writing or in electronic format by a date established in the *schedule of events* in order to allow any Owner or agency responses to be sent to all finalist firms.

The Notice to Finalists should include any requirements or limitations on presentation methods or topics.

(h) Evaluation of Project Proposals

Each of the finalist firms must submit their project proposals before the interviews, in accordance with the *schedule of events* indicated in the Notice to Finalists, to allow for appropriate review by Selection Committee members prior to interviewing finalists.

If applicable in the second step of the evaluation (usually only if *"previous performance"* is a second-step criteria category), and immediately after the finalists are determined, the Selection Manager may also provide a Reference Check Matrix containing questions deemed pertinent by the Selection Committee. The form may serve as a scoring tool using information received from submitting firm's references. The Selection Manager may assign the responsibility for checking the references of the finalist firms to individual committee members. The person or persons checking references may contact Owner, Design Professional, MBE, WBE, and trade contractor references, among others.

MFC

As the deadline for receipt of project proposals approaches, the Selection Manager should issue reminders to the Selection Committee about the imminent submittals, critical meeting dates, and similar milestones. It is helpful at this point, for the Selection Manager to issue a short Guideline for Evaluation (Step II) to the voting members as a reminder of duties/deadlines, a quick reference to the specific deliverables expected in the submittals, and a reminder of the evaluation criteria.

Copies of all project proposals received and validated by the Selection Manager should be immediately distributed to the Selection Committee with corresponding scoring forms.

Each member of the Selection Committee should review each firm's submittal carefully, frequently referring to the stated evaluation criteria and required deliverables in the Notice to Finalists or Guideline for Evaluation (Step II). Each member should individually score the submittals using the provided scoring form. The forms should be brought to an evaluation meeting similar to the earlier meeting in the RFQ step, or to a single meeting that may be held after the interviews for evaluation discussion of both project proposals and interviews.

The evaluation meeting should give members an opportunity to discuss the merits of the submittals as they relate to the stated criteria and deliverables. Each individual member should present a synopsis of their assessment of the submittals to offer any unique perspectives to the criteria they wish to share. After all members of the committee have presented, an open discussion should follow.

Other support staff or consultants may be invited to answer specific questions that committee members may want to ask, but may not offer unsolicited information unless requested by the committee to speak openly.

Upon determining that the committee has received enough information with which to submit individual scoring, a committee member should move to submit scoring, and if all members agree, the completed scoring forms are given to the Selection Manager (or, if the meeting is held after the interviews, members proceed to interview evaluation discussion). The Selection Manager should check the scoring for obvious errors. The scoring is calculated, and the highest-ranking firm is announced to the committee.

The committee's last actions prior to interviewing finalists is to determine the questions to ask during the interview and any desired changes to the format for the interviews from that described in the Notice to Finalists. If applicable, the results of the reference checks for the second stage of the selection are distributed to all members of the Selection Committee. Prior to the oral presentation and interview, the committee members review all of these materials.

(i) Interviews

The basic premise in the interview process is that each of the finalist firms to be interviewed is acknowledged by the committee to be sufficiently qualified to provide the consulting services.

The detailed information that each firm provides during the interview is intended to provide differentiation in the minds of the committee members between the finalists firms, and to allow the committee to identify the firm that excels with regard to listed criteria and committee expectations.

MFC

The Selection Manager should serve as facilitator for the entire interview process. Interviews should take place in one or more rooms dedicated for the interviews for the day. A separate meeting room should be provided exclusively for committee members for committee discussion. It is advisable to have refreshments available to the committee members due to the length of the sessions and to allow time between sessions for breaks.

All finalist firms must be interviewed in accordance with the Notice to Finalists and any subsequent instructions to finalists. The order of the interviews should be predetermined at random, by a drawing at the site visit, or other earlier time. The recommended time allotted to each firm for the interview process should not exceed ninety minutes, comprised of time for setup; presentation (usually 30 minutes); questions and answers; and knock-down. Actual time allotted for each activity will be determined by the Selction Manager.

Electronic presentations, such as PowerPoint presentations, may be allowed (but not required), but if the firm plans an electronic presentation, the presenter must be prepared with their own laptop and projector for quick setup within the allotted set-up time. Presentations are to include the information requested in the Notice to Finalists.

The presentation may involve flip charts or boards along with oral presentation. All members of the Selection Committee must be present during all of the presentations and interviews. Other Owner guests may be present in the audience for training purposes or Selection Committee support, but must obey all instructions of the Selection Manager. Finalist firms at their discretion should bring Key Personnel to the interview in a number appropriate to the size and type of project subject to any limitations in the Notice to Finalists. Finalist firms are not allowed to address any questions prior to the beginning of the presentation or after the interview to anyone other than their designated contact.

Since the intent of the formal interview process is to provide the Selection Committee with in-depth information from the firm in order to make a final selection of the best-suited firm for the contract award, firms should be pre-instructed (in the Notice to Finalists) to focus their presentations on the detailed plan for quality consulting services of the project and any unique characteristics or services the firm offers.

Firms are discouraged from reviewing general company history and past experience previously submitted in Statements of Qualifications unless this information is particularly relevant to the project-specific plan.

The Selection Manager must keep time and strictly enforce the time limits of the interview sessions by politely prompting presenters and committee members. After each oral presentation, the Selection Committee is allowed to ask questions of the firm. The questions should not be overly scripted, but should be relevant to the project and correspond to the stated criteria for the evaluation of the interviews.

The questions must be generally consistent from session to session. Relevant improvised or follow-up questions may be asked by the Selection Committee members, but all members should be generally allowed an equal amount of time for questioning.

Upon conclusion of questioning, the Selection Manager should ask the firm to verify that any consultants proposed on the project team and the key personnel identified in the initial submittal are still anticipated to make up the final team that will provide the services, if selected. Each firm should be advised that, if selected, the final team that it has presented would become the basis of the contract negotiations. Any changes in the proposed project team after this point can be made only with the expressed permission of the Owner.

MFC

(j) Sealed Fee Proposal (Optional)

Although detailed discussion and negotiation with the eventual successful consulting services firm will take place immediately after selection, it may be beneficial to receive fee proposals, at the time of the interview, from finalist firms. The fee proposal serves as a starting point for negotiation and discussion. In the purely qualifications-based selection process, only the fee proposal of the firm deemed best-qualified after final evaluation is opened by the Selection Manager.

If required, fee proposals shall be submitted at the conclusion of the interview session in a sealed envelope as directed by the Selection Manager. Any detailed itemization of the proposed fee that cannot be expressed in the form should be attached to the Fee Proposal Form.

(k) Final Evaluation

The Selection Committee must meet soon after the interviews to discuss the merits of the presentations and responses of the firms to questions. The Selection Manager should ask each member to give a synopsis opinion of each of the firms, and should engage all of the members to openly discuss the positive and negative impressions on the criteria for the evaluation of the interviews. The committee should be allowed to ask any necessary questions of support staff and consultants. Final discussion and scoring, however, should take place only in the presence of the voting Selection Committee members and the Selection Manager.

Prior to receiving completed scoring forms from all members, the Selection Manager should ask the members if they have been provided enough information through the process for a definitive selection. If the committee agrees that enough information has been provided, the final scoring forms are calculated using the sum of individual rankings of the finalist firms.

Using this sum, in conjunction with the results of the evaluation of project proposal forms, a final ranking is established and communicated to the committee. The committee must then approve the final ranking.

If applicable, when the final ranking is approved, the selection results may be shared with a principal representative of the agency prior to the announcement of the highest-ranked firm, with an official recommendation to begin negotiations with the highest-ranked firm.

(l) Negotiation and Final Contract Draft

Upon receiving authorization to begin negotiations with the highest-ranked firm, the Selection Manager should informally contact all finalist firms to notify them of identity of the highest-ranked firm and of the Owner's intent to begin discussions with the highest-ranked firm. All firms should be thanked properly for their participation.

The Selection Manager should provide all qualifications information, project proposal, and proposed fee information of the highest-ranked firm to the Owner's negotiation team.

For GSFIC and BOR-administered projects, the negotiating team may be comprised of GSFIC or BOR project management staff, GSFIC or BOR senior staff, GSFIC or BOR legal staff, agency project staff, and the Selection Manager.

MFC

The Selection Manager convenes a planning meeting to develop a negotiation strategy and goals, and plans a subsequent introductory meeting with the highest-ranking firm and the negotiating team. The Selection Manager, the familiar contact for the firms up to this point, should provide direction for the discussion in the introductory meeting. However, in subsequent meetings in which project details are discussed and determined, the Owner's project manager should provide negotiation scheduling and lead the discussion. The Selection Manager may assume a limited role at this point.

The introductory meeting should simply be an opportunity for the highest-ranked firm to verbally present an overview of their fee proposal and for the negotiation team to ask questions or request clarifications of the fees. These submissions will be used by the project manager and the negotiation team to re-address direction, develop any additional questions, and possibly determine any cost or fee limit strategies. All responses by the firm may be provided at the introductory meeting, but must also be submitted by the firm in written detail by a set time as directed by the negotiation team. In turn, the highest-ranked firm may ask questions of the negotiation team concerning the project.

The project manager should use benchmarks such as historical data, industry trends, and/or unique demands of the project or the project type to determine cost and fee goals. The project manager will lead the team through the subsequent negotiations with the firm, and keep detailed records of any agreed-upon terms and conditions not addressed in the specimen contract.

The negotiation team should not establish an absolute deadline for successful negotiation with one firm, but should establish a desired timeline for negotiation goals that should be communicated to the firm.

A reasonable time for negotiation of consulting services in a complex project, given initial fee discussions as a base, should be forty-five (45) days or less. However, the Owner may require a much shorter period or allow longer duration. If the team cannot arrive at an agreement with the highest-ranked firm within the Owner's desired timeline or other reasonable time, or the parties otherwise have obvious irreconcilable project differences, the negotiation team may cease negotiations with the highest-ranked firm (in an official letter) at any time and choose to begin negotiations with the second highest-ranked firm. If however, the negotiation team is able to reach a reasonable agreement with the highest-ranking firm that is in line with negotiation and project goals, the project manager or other appropriate Owner's representative may prepare a final draft contract.

The draft should be reviewed by appropriate internal staff, including legal and financial reviews. Upon proper internal review and/or amendments, the final contract draft may be offered to the successful firm for execution.

(m) Notification of Final Award & Firm Debriefing

After a contract has been executed, all finalists firms should be notified in writing of the award and any unopened fee proposals of the finalists shall be returned. If requested, the Selection Manager may agree to provide general debriefings to unsuccessful firms. If there is a significant number of requests or if the work load prohibits separate debriefings, the Selection Manager may choose to schedule one debriefing for all requests.

MFC

Debriefings can serve to assist the firms in preparing for future opportunities, instill the firm's confidence in the public trust responsibility of the Owner, and validate the legitimacy of the selection process. The Selection Manager may agree to such a debriefing prior to full execution of the contract, or may require such meetings to be scheduled after a contract is fully executed with the successful firm. If the Selection Manager agrees to a debriefing, the Selection Manager must focus the discussion during debriefings to actual selection procedures undertaken. Any discussion during debriefings about competitive presentations and/or proposals should be limited to positive, objective points primarily related to the successful firm's submittals and interviews.

Discussion of deficiencies and positive aspects of the presentation will be provided as part of the debriefing. *Any information provided should be based on the consensus of the group, avoiding any reference to any individual selection team members.*

(n) Variations to the Standard Selection Procedures

(i) Combining both QBS steps into one Request for Qualifications (RFQ)

In cases where expediency is important, the Selection Committee may opt to combine the request for written responses into one (RFQ) step with one evaluation by the Selection Committee, while still using Qualifications Based Selection. In such case, it is recommended that the requirements normally included in the RFQ and Notice to Finalists be combined, condensed, and issued as one RFQ document. The Selection Committee still determines three to five finalist firms for formal interviews, and allows ample time to evaluate the written submittal prior to the formal interview and evaluation.

(ii) Interviewing Fewer Selected Finalists

In other cases where expediency is important, the Selection Committee may opt to reserve the right, in the initial RFQ, to interview a smaller number of selected finalists after thorough review of qualifications. This is not generally recommended, and is typically not appropriate for selection of prime project team members such as a Design Professional.

(iii) Use of Telecommunications

MFC

The selection process may be executed using teleconferencing or videoconferencing to expedite or facilitate the sequences outlined in these procedures, wherever practicable. However, it is important that all of the same critical steps will be followed, and that only the means of communication is impacted.

RFQ/RFP vs. ITB Process Comparison & Checklist				
#	QBS – 2 Step Process (CM/GC)	Consultant/DP Selection Process (1) Step)	Invitation to Bid Process 1 Step Process	✓ ✓
	Step 1 RFQ	N/A	N/A	
1	Receive Agency Request Form or Purchase Requisition to begin work.	Receive Agency Request Form or Purchase Requisition to begin work.	Receive Agency Request Form or Purchase Requisition to begin work.	
2	Meet with using agency to define and confirm scope of work.	Meet with using agency to define and confirm scope of work.	Meet with using agency to review bid specifications, scheduling and responsibilities	
3	Prepare draft documents for internal and using agency review.	Prepare draft documents for internal and using agency	Prepare draft documents for internal and using agency	
4	Confirm Selection Committee participants.	Confirm Selection Committee participants.	N/A	
5	Receive user approval.	Receive user approval	Receive user approval	
6	Advertise solicitation to GPR	Advertise solicitation to GPR	Advertise solicitation to GPR	
7	Issue answers to questions received. (Addenda issued)	Issue answers to questions received. (Addenda issued)	N/A	
8	RFQ Due Date	RFQ Due Date	N/A	
9	RFQ responses issued to Selection Committee	RFQ responses issued to Selection Committee	N/A	
10	Selection Committee convenes and short lists respondents	Selection Committee convenes and short lists respondents	N/A	
11	Short listed firms notified of next steps	Short listed firms notified of next steps	N/A	
12	Non-Short-Listed firms dismissed	Non-Short-Listed firms dismissed	N/A	
13	**Step 2 – RFP**	N/A	N/A	
14	Additional RFP information distributed to short listed firms	Additional RFP information distributed to short listed firms (if needed).	N/A	
15	Pre-Proposal Conference Site visit for short listed firms (if necessary)	N/A	Pre Bid Conference – Site Visit	
16	Question and Answer period Ends – Addenda issued (if any)	N/A	Question and Answer period Ends – Addenda issued (if any)	
17	RFP due date	N/A	Bid Due Date Bid Opening	
18	Presentation notification	Presentation notification distributed	N/A	
19	N/A	N/A	Bids Evaluated	
20	N/A	N/A	Award Letter with Document Requirement Issued	
21	Presentations held before Selection Committee	Presentations held before Selection Committee	N/A	
22	Selection Committee ranks short listed firms	Selection Committee ranks short listed firms	N/A	
23	Priced Proposal opened (if applicable)	N/A	N/A	
24	Top ranked firm is issued notice and contract for review and negotiations	Top ranked firm is issued notice and contract for review and negotiations	N/A	
25	Contract Finalized/Executed by Contractor	Contract Finalized/Executed by Consultant or DP	Contract Finalized/Executed by Contractor	
26	Contract routed internally for approval	Contract routed internally for approval	Contract routed internally for approval	
27	Contract Executed	Contract Executed	Contract Executed	
28	Begin Work	Begin Work	Begin Work	

MFC

RFQ/RFP vs. ITB Process Comparison & Checklist

B2. Selection of Construction Managers (CM/GCs) or Design Builders

The recommended selection procedures set forth in this section are designed to assist Georgia State government entities using the CM/GC or Design-Build project delivery method used by the State.

These procedures are based on GSFIC and BOR's current use of Qualifications-Based Selection (QBS) methods, since GSFIC and BOR-administered construction projects comprise the overwhelming majority of construction projects conducted by the State. The selection of the construction manager/ general contractor (CM/GC) or Design Builder should be qualifications-based for a variety of important reasons such as: (1) the vast majority of the cost risk associated with projects using CM/GC or Design-Build services is directly related to the quality of services, and therefore to the qualifications of the CM/GC or Design Build firm; (2) proposed fee percentages associated with CM/GC or Design Build services often tend to fall in a "normal" range, and even a partial consideration of the fees in CM/GC or Design-Build selection will tend to dilute the meaningful comparison of competing firms; and (3) because the required scopes of services are often not completely foreseen at time of selection, differentiation between competing firms' fee proposals as they relate to actual Owner costs is fraught with difficulty without detailed negotiation with all proposers on project costs, which is not practicable.

For Design-Build selections, evaluation criteria may differ from that of CM/GC in many ways, from possible special emphasis on evaluating design proficiency to possible requested conceptual information received in submittals. Proper RFQ/RFPs for Design Builders will require a great amount of principal A/E qualifications info, design experience, and similar information, as well as typical builder experience and qualifications data. Therefore, the deliverables and the evaluation criteria may differ greatly between the Design Build and CM/GC service selections, but in the rest of the selection process, the two service selections closely mirror one another.

MFC

The following items are essential elements and tasks of the QBS process, arranged in the suggested order in which they should be completed. Basic instructions for completing these tasks are included. These are intended to be applicable to CM/GC and Design Builder selection, but some projects may require differing tasks and instructions.

(a) Gathering Information

Prior to the selection of a CM/GC or Design Builder, agencies, with the possible assistance of their Executive Administrator or Program Manager (as applicable), should gather critical information and confirm the necessary direction of the existing project program.

Major items to confirm (and revise, if necessary) include:

1. Confirm and revise, if necessary, any predesign studies, program analyses, or program executive summaries.

2. Make certain that the overall schedule has been updated or, if not, necessary adjustments have been made.

3. Ensure that funding has been allocated for the required service. Entities should indicate in the advertisement the extent of services that the available funding is intended to cover.

4. Make certain that the consulting services scope has been properly defined and updated.

5. Guarantee that the project delivery method has been identified and deemed appropriate.

6. Confirm that the Project Implementation Budget has been reconciled with the appropriated funds.

7. Ensure that the management plan has been identified. Confirm that an Executive Administrator or Program Manager (as applicable) is hired, or a selection process is underway.

If the above items are not completed, agencies should reconcile the appropriate items above deemed critical to continuation of the CM/GC or Design Builder selection before initiating the selection process.

(b) Selection Committee Appointment

MFC

Prior to advertisement of a construction project procurement opportunity, the appropriate Owner/Agency head(s) or their designee(s) should appoint appropriate staff members to serve as a Selection Committee. Selection Committees for major construction services should be cross-functional teams, comprised of varied, unbiased, responsible, and professional individuals. The committee may include representatives from the Owner's professional staff, facility operations/maintenance, agency management, or other internal stakeholders in the project.

The size of the actual voting committee should be an odd number and is generally limited to three to five individuals, not including the Selection Manager. The Selection Manager shall be a non-voting member of the Selection Committee whose responsibility is to guide and facilitate the process.

It is important that the committee makeup remain as consistent as possible in order to maximize information assimilation and maintain a consistent overall evaluation process. Any committee assembled to make a final selection of primary construction firms for State of Georgia projects should consist of State officials and employees only.

Verify that there are no real or potential conflicts of interest before finalizing committee members. In addition to the voting members and the Selection Manager, support staff may be enlisted to aid in the gathering of procurement-related information and may otherwise contribute to the evaluation process as necessary. The Selection Committee must be properly orientated in the process, which should be managed and structured in a way that renders the process as simple and intuitive as possible. However, a significant amount of time and effort is required of a Selection Committee member, and a commitment must be made to allocate time for review of qualifications and proposals and to attend required meetings.

(c) Evaluation Criteria and Scoring Documents

When developing project specific criteria, the Selection Manager, Using Agency, and/or Committee members should consider which characteristics, experience, and qualifications are needed to complete an evaluation of the firms. A small number of major categories of evaluation criteria should be determined to provide an understanding of which basic attributes are generally considered important by the committee. *Stability of Firm*, *Relevant Experience/Qualifications of Firm*, *Location of the Firm*, *Performance of the Firm*, and *Suitability of the Firm* are examples of major categories of criteria that are typically used in many selections and are the categories into which most specific project-related criteria will typically fall.

Detailed, or "granular" criteria (e.g., years of experience of the proposed cost estimator in projects of similar complexity) may be grouped as a component of a major category. Appropriate weights shall be assigned to the major criteria categories and communicated to all firms in the RFQ.

In contrast to CM/GC selection, proper RFQ/RFPs for Design Builders will certainly require a great amount of principle A/E qualifications info, design experience, and similar information, as well as typical *builder* experience and qualifications data. Therefore, the deliverables and the evaluation criteria may differ greatly between the Design-Build and CM/GC service selections, but in the rest of the selection process, the two service selections closely mirror one another.

In some solicitations/selections, previous performance of the firms may be a major criteria category for either the First Step (RFQ) of Evaluation or in the Second Step (RFP), in which case it will probably be desirable to check references of firms in the appropriate phase. The Selection Manager may provide a Reference Check Matrix containing questions deemed pertinent by the Selection Committee. The form serves as a scoring tool employing information received from the submitting firm's references.

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Also, if desired, worksheets may be developed that list the expected deliverables, grouped by major or granular criteria, to assist members in cumulatively assessing the merits of firms during review of submittals. However, in many cases such cumulative assessment may also be accomplished by members simply using the existing RFQ/RFP documents or other guides during their individual reviews. It is advisable to allow committee members' latitude in their detailed individual review to utilize to their own study/review techniques. It is not recommended to formulate extensive matrices, thus increasing the possibility of error and limiting group diversity and the decision-making competence of qualified, professional members. Looked at as a whole, the review and scoring process should not be unnecessarily "dumbed-down" or "computerized." Instead, Selection Committee members should be properly orientated in the process requirements by the Selection Manager.

The Selection Manager should develop scoring forms for both the RFQ and subsequent steps, for use by the voting members of the committee, that reflect the established major criteria categories and weighting and provide for an accurate scoring summary based on the sum of the individual rankings by each member, not on the scores of the firms. More information on scores and rank is provided in SCM Chapter 3.2 B2(f): Evaluation of Statements of Qualifications and Selection of Finalists.

The scoring form should be developed in a way that renders the form as intuitive for the scorer as possible, with clear indicators of scorer number, project title, project number, proposing firms, criteria, weighting/points, scores and rank, and sections for notation. An overall committee scoring summary may also be a part of the scoring form, or a separate document. Often, the scoring summary document will serve as a freely-shared record for those interested in the outcome of a selection, and as a tool for debriefings with unsuccessful proposers. The names of the committee members must not be included on the scoring forms and scoring summary documents. Rather, a number should be assigned to each committee member, and the individual's number will be a part of the scoring record.

(d) The Solicitation Document (RFQ/RFP)

The Selection Manager must collaborate with the Selection Committee to determine or establish the following:

- A selection schedule of events,
- Finalize evaluation criteria,
- Establish required deliverables of prospective proposers,
- Establish any minimum qualifications required,
- Determine any unique directions or selection strategies necessary for the individual project.

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This information will be used to develop the RFQ/RFP document. The sample Request for Qualifications/Request for Proposal provides examples of major criteria categories and specific criteria, deliverables, and the schedule of events. Interested firms should be given appropriate time to respond to the RFQ and RFP. The RFQ/RFP should communicate the schedule for the decision-making process, and the Selection Manager must make certain that every effort is made to adhere to the listed schedule of events.

In order to maximize the competitive opportunity for firms as well as promote an efficient evaluation, a *two-step process* is recommended for qualifications-based selection. In step one, firms are invited, via a publicly-advertised Request for Qualifications (RFQ) solicitation document, to submit Statements of Qualifications. These submittals should contain comprehensive qualifications and experience data not specific to the project at hand. In step two, upon evaluation by the Selection Committee, firms determined to be especially qualified are invited, by issuance of an official Notice to Finalists letter by the Selection Manager, to prepare specific Design-Build proposals and submit to an interview.

Among other information requested, the project proposal should include proposed team qualifications and experience data that specifically relate to the project at hand, and other project-related plans and methods.

To provide information to prospective proposers regarding selection process expectations, it is the practice of GSFIC to issue the RFQ and the RFP combined in a single document (RFQ/RFP). However, Selection Committees may communicate additional requirements of all proposers at any step in the process by addendum or official notification as deemed necessary. For variations to the Two-Step selection, see *SCM Chapter 3.2 B2 (n): Variations in the Standard Selection Steps*.

(e) Advertisement

Once the RFQ/RFP is completed and approved for released, a public notice announcing the procurement opportunity is prepared by the Contracting Officer and posted on the internet for public viewing at the Georgia Department of Administrative Services' (DOAS) Georgia Procurement Registry Website.

The advertisement should be posted at least thirty (30) calendar days prior to the due date for Statements of Qualifications in response to the RFQ/RFP. The RFQ/RFP is posted along with the advertisement in a manner prescribed by DOAS. In addition, if it is deemed advantageous, the public notice may be published in an appropriate general circulation newspaper or other medium in the vicinity of the project location. Newspaper advertisements should be written as succinctly as possible and should reference the DOAS Website as the means for finding project details and appropriate documents. For efficiency, more than one project may be advertised in a single newspaper notice.

The notice on the Georgia Procurement Registry should provide the following information:

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1. The Contracting Officer or person to whom requests for the RFQ/RFP should be directed
2. The location of the project
3. The name of the project
4. The type of service being procured for the project
5. The anticipated period of performance
6. A brief description of the project, including the general character of the project (e.g., classrooms, laboratory, prison, library, and similar characteristics)
7. The approximate physical size of the project
8. The project's estimated cost
9. The due date for all responses to the RFQ/RFP.
10. State policy information concerning Minority-Owned Business Enterprise (MBE) and Women-Owned Business Enterprise (WBE) contracting opportunities
11. Any other basic requirements of the responses, including number of copies to be furnished.

The notice should specify the contact to whom all inquiries are to be directed (again this is

normally the Contracting Officer or Selection Manager for the procurement). After the project has been advertised in the Georgia Procurement Registry, *interested firms should not conduct any communications involving the solicitation/project with any person other than the specified single point of contact for the procurement*. Failure to adhere to this restriction may result in the disqualification of the firm's submittal.

The RFQ/RFP Website Documents and any addenda may be posted electronically on the Georgia Procurement Registry, or directly distributed by other means such as E-mail. Sometimes the documents will be available for pick-up. Regardless of document distribution method, the Contracting Officer or Selection Manager must keep an accurate list of all inquirers and respondents to the advertisement. The list may include specific contact and address information and must be maintained as a part of the overall project procurement record.

(f) Evaluation of Statements of Qualifications and Selection of Finalists

As the deadline for receipt of Statements of Qualifications approaches, the Selection Manager should remind the Selection Committee about the imminent submittals, and other pertinent information (e.g., critical meeting dates, evaluation locations, and any other important information).

It is helpful, at this point, for the Selection Manager to provide the voting members with a convenient and concise Guideline for Evaluation (Step I) document that summarizes member duties/deadlines and provides a quick-reference to the specific deliverables expected in the submittals and to all of the evaluation criteria.

MFC

Upon receipt of the submittals, copies of all Statements of Qualifications received and validated by the Selection Manager should be immediately distributed to the Selection Committee with corresponding scoring forms. The Selection Committee should confirm that all firms meet minimum qualifications. Subsequently, each member of the Selection Committee should review each firm's submittal carefully, frequently referring to the stated evaluation criteria and required deliverables in the RFQ.

If applicable in this RFQ (first) step (usually only if previous performance is a first-step criteria), the Selection Manager may also provide a Reference Check Matrix containing questions deemed pertinent by the Selection Committee. The form may serve as a scoring tool, containing information received from submitting firm's references. The Selection Manager may assign the responsibility for checking the references of the finalist firms to individual committee members. The person or persons checking references may contact Owner, MBE, WBE, and trade contractor references, among others.

Each member should individually score the submittals using the provided scoring form. This should be a preliminary score. Before members turn in scoring forms, an evaluation meeting should take place, giving members an opportunity to discuss the merits of the submittals as they relate to the RFQ criteria and deliverables.

Each individual member should present a synopsis of their assessment of the submittals, and bring forth any unique perspectives to the criteria that they wish to share. After all members of the committee have presented, an open discussion should follow. At this point, other support staff or consultants may be invited to answer specific questions from the committee, but they should refrain from offering unsolicited information unless requested by the committee to speak openly.

Upon determining that the committee has received enough information with which to submit individual scoring, a committee member may move to submit scoring for compilation. Upon receiving all individual committee member scores, the Selection Manager will calculate all the scores on the Scoring Summary and immediately report the final ranking of firms to the committee.

The final ranking is determined by the sum of individual ordinal rankings of the firms, not by the sum of the individual scores. This prevents the difference between one member's opinion of a score and another's opinion of the same score from skewing the results. Three to five firms may be selected as finalists.

The decision on whether to select three, four, or five finalist firms rests with the committee. The committee may use factors such as a disparity between the firms' sums of individual rankings, or other relevant criteria. Further discussion may be necessary to arrive at a consensus on this decision. Upon conclusion of this ranking, the Selection Manager will ask for the committee's approval of the resulting list of finalists. From the point of the approval going forward, the committee should consider all of the finalist firms as equally qualified, and simply "eligible" for the remaining process.

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Not until the next step should the committee draw any differentiation between the remaining firms, which will be done by the evaluation of project proposals and interviews.

(g) Notice to Finalists

The Selection Manager should promptly post the list of selected finalists as an update to the original advertisement on the Georgia Procurement Registry. All selected finalist firms should be contacted directly by phone, followed by written notice, to allow them to prepare for any imminent requirements. E-mail transmission may be an appropriate way to make some notifications, but the firm's acknowledgement of receipt is crucial. The Notice to Finalists should include a requirement for the firms to prepare a project proposal, a separate fee proposal and a requirement to submit to an interview by the Selection Committee. In addition, the notification should specify the steps in the remainder of the selection process, including the following:

1. Statement of appreciation and congratulations to the finalists for their efforts and success in becoming eligible for further consideration,

2. Schedule of events for the remainder of the selection process,

3. When and where additional current program or Project Development documents will be made available to finalists and the standard procedures and specimen contract obtained,

4. Place/time/host for a mandatory pre-proposal conference and/or mandatory site visits (if appropriate),

5. Schedule/location for interviews (Sequencing of interviews may be determined by a drawing at site visit or other random means.),

6. Invitation to finalists to submit a project proposal, and exact requirements of finalists for their proposals,

7. Fee proposal to be sealed in a separate envelope (optional),

8. Criteria for the remainder of the evaluation, including the criteria for the evaluation of project proposals and interviews.

If a pre-proposal conference and/or site visit has been deemed appropriate, the Selection Manager, or other representative of the Owner and agency representative(s), should attend/walk the site with finalist firms. However, all questions regarding the project must be submitted to the Selection Manager, or designee of the Selection Manager, in writing or in electronic format by a date established in the RFP schedule of events in order to allow any Owner or agency responses provided to be sent to all finalist firms. The Notice to Finalists should include any requirements or limitations on presentation methods or topics.

(h) Evaluation of Project Proposals

MFC

Each of the finalist firms must submit their project proposals in advance of the interviews, in accordance with the RFP schedule of events as indicated in the Notice to Finalists, to allow for appropriate review by Selection Committee members prior to interviewing finalists.

If applicable in this RFP second step (usually only if "previous performance" is a second step criteria category) and immediately after the finalists are determined, the Selection Manager may also provide a Reference Check Matrix containing questions deemed pertinent by the Selection Committee. The form may serve as a scoring tool using information received from the submitting firm's references.

The Selection Manager may assign the responsibility for checking the references of the finalist firms to individual committee members. The person or persons checking references may contact the Owner, Design Professional, MBE, WBE, and trade contractor references, among others.

As the deadline for receipt of project proposals approaches, the Selection Manager should issue reminders to the Selection Committee about the imminent submittals, critical meeting dates, and similar milestones.

It is helpful at this point, for the Selection Manager to issue a short Guideline for Evaluation (Step II) to the voting members as a reminder of duties/deadlines, a quick-reference to the specific deliverables expected in the submittals, and a reminder of the evaluation criteria.

Copies of all project proposals received and validated by the Selection Manager should be immediately distributed to the Selection Committee with corresponding scoring forms.

Each member of the Selection Committee should review each firm's submittal carefully, frequently referring to the stated evaluation criteria and required deliverables in RFP or Guideline for Evaluation (Step II), and individually score the submittals using the provided scoring form. The forms should be brought to an evaluation meeting similar to the earlier meeting in the RFQ step, or to a single meeting that may be held after the interviews for evaluation discussion of both project proposals and interviews.

The evaluation meeting should give members the opportunity to discuss the merits of the submittals as they relate to the RFP criteria and deliverables. Each individual member should present a synopsis of their assessment of the submittals, and bring forth any unique perspectives to the criteria that they wish to share. After all members of the committee have presented, an open discussion should follow.

Other support staff or consultants may be invited to answer specific questions that committee members may want to ask, but may not offer unsolicited information unless requested by the committee to speak openly. Upon determining that the committee has received enough information with which to submit individual scoring, a committee member should move to submit scoring, and if all members agree, the completed scoring forms are given to the Selection Manager (or, if the meeting is held after the interviews, members proceed to interview evaluation discussion). The Selection Manager should check the scoring for obvious errors. The scoring is calculated and the highest-ranking firm is announced to the committee.

The committee's last action prior to interviewing finalists is to determine the questions to ask during the interview, and determine if there are any desired changes to the format for the interviews from that which was described in the RFP and the Notice to Finalists. If applicable, the results of any documented reference checks for the RFP stage of the selection should be distributed to all members of the Selection Committee. Prior to the oral presentation and interview, the committee members should review all of these materials.

MFC

(i) Interviews

The basic premise in the interview process is that each of the finalist firms to be interviewed is acknowledged by the committee to be sufficiently qualified to provide the CM/ GC or Design-Build services.

The in-depth information that each firm provides during the interview is intended to provide differentiation in the minds of the committee members between the finalists firms, and to allow the committee to identify the firm that excels with regard to listed criteria and committee expectations.

The Selection Manager should serve as facilitator for the entire interview process. Interviews should take place in one or more rooms dedicated for the interviews for the day. A separate meeting room should be provided exclusively for committee members for committee discussion. All finalist firms must be interviewed in accordance with the RFP, the Notice to Finalists, and any subsequent instructions to finalists. The order of the interviews should be predetermined at random by a drawing at the site visit, or other earlier time. The recommended time allotted to each firm for the interview process should not exceed ninety minutes, comprised of time for setup; presentation (usually 30 minutes); questions and answers; and knock-down. Actual time allotted for each activity will be determined by the Selction Manager.

Electronic presentations, such as PowerPoint presentations, may be allowed (but not required), but if the firm is using electronic presentation, the presenter must be prepared with their own laptop and projector for quick setup within the allotted setup time. Presentations are to include information requested in the Notification to Finalists Letter. The presentation is not required to include building design(s) in model, computer or artist rendering. The presentation may involve flip charts or boards along with an oral presentation. All members of the Selection Committee must be present during all of the presentations and interviews. Other Owner guests may be present in the audience for training purposes or Selection Committee support, but must obey all instructions of the Selection Manager. Finalist firms, at their discretion should bring key personnel to the interview in a number appropriate to the size and type of project subject to any limitations in the Notice to Finalists. Finalist firms are not allowed to address any questions, prior to the beginning of the presentation or after the interview, to anyone other than their designated contact.

Since the intent of the formal interview process is to provide the Selection Committee with in-depth information from the firm in order to make a final selection of the best-suited firm for the contract award, firms should be pre-instructed in the Notification to Finalists to focus their presentations on the detailed plan for managing the construction, cost, schedule, and quality on the project and any unique characteristics or services the firm offers.

Firms are discouraged from reviewing general company history and past experience previously submitted in Statements of Qualifications and/or project proposals unless this information is particularly relevant to the project-specific plan.

MFC

The Selection Manager must keep time and strictly enforce the time limits of the interview sessions by politely prompting presenters and committee members. After each oral presentation, the Selection Committee is allowed to ask questions of the firm. The questions should not be overly scripted, but should be relevant to the project and easily correspond to the stated criteria for the evaluation of the interviews. The questions must be consistent from session to session. Relevant improvised or follow-up questions may be asked by the Selection Committee members, but all members should be allowed an equal amount of time for questioning.

Upon conclusion of questioning, the Selection Manager should ask the firm to verify that any consultants proposed on the project team and the key personnel identified in the initial submittal will make up the final team that will provide the services, if selected. Each firm should be advised that, if selected, the final team that it has presented would become the basis of the contract negotiations. Any changes in the proposed project team after this point can be made only with the express permission of the Owner.

Sealed fee proposals are to be handed to the Selection Manager by the firms at the end of the interview and before finalist firm leaves.

(j) Sealed Fee Proposal

Although detailed discussion and negotiation with the eventual successful CM/GC or Design-Build firm will take place immediately after award, it is beneficial to receive fee proposals early, at time of interview, from finalist firms. The fee proposal serves as a starting point for such negotiation and discussion. In this purely qualifications-based selection process, only the fee proposal of the firm deemed best-qualified after final evaluation is opened by the Selection Manager.

Fee proposals shall be submitted at the conclusion of the interview session in a separately sealed envelope as directed by the Selection Manager. The fee proposal form shall be submitted. Detailed itemization of the Total Maximum Overhead Allowance must be attached to the fee proposal form. An example of suggested format for itemization is included in the Project Cost Matrix.

(k) Final Evaluation

The Selection Committee should meet soon after the interviews to discuss the merits of the presentations and responses of the firms to questions. The Selection Manager should ask each member to give a synopsis opinion of each of the firms, and should engage all of the members to openly discuss the positive and negative impressions on the criteria for the evaluation of the interviews.

The committee should be allowed to ask any necessary questions of support staff and consultants. Final discussion and scoring, however, should take place in the presence of the voting Selection Committee members and Selection Manager.

MFC

Prior to receiving completed scoring forms from all members, the Selection Manager should ask the members if they have been provided enough information through the process for a definitive selection. If the committee agrees that enough information has been provided, the final scoring forms are calculated using the sum of individual rankings of the finalist firms.

Using this sum, in conjunction with the results of the evaluation of project proposals, a final ranking is established and communicated to the committee. The committee must then approve the final ranking.

If applicable, and when the final ranking is so approved prior to the announcement of the highest-ranked firm, the selection results may be shared with a principal representative of the agency, with an official recommendation to begin negotiations with the highest-ranked firm.

(l) Negotiation and Final Contract Draft

Upon receiving appropriate authorization to begin negotiations with the highest-ranked firm, the Selection Manager should informally contact all finalist firms to notify them of identity of the highest-ranked firm and of the Owner's intent to begin discussions with the highest-ranked firm. All firms should be thanked properly for their participation. An example of Notice to Unsuccessful Firms is included in the Appendix.

The Selection Manager should provide all qualifications information, project proposal, and proposed fee information of the highest-ranked firm to the Owner's negotiation team. For GSFIC or BOR-administered projects, the negotiating team may be comprised of GSFIC and BOR project management staff, GSFIC or BOR senior staff, GSFIC or BOR legal staff, agency project staff, and the Selection Manager.

The Selection Manager should convene a planning meeting to develop a negotiation strategy and goals and to plan a subsequent introductory meeting with the highest-ranking firm and the negotiating team. The Selection Manager, the familiar contact for the firms up to this point, should provide direction for the discussion in the introductory meeting. However, in subsequent meetings in which project details are discussed and determined, the Owner's Project Manager should provide negotiation scheduling and serve to lead the discussion. The Selection Manager may possibly assume a limited role at this point.

The introductory meeting should simply be an opportunity for the highest-ranked firm to verbally present an overview of their fee proposal, and for the negotiation team to ask questions or request clarifications of the fees. These submissions will be used by the project manager and the negotiation team to re-address direction, develop any additional questions, and possibly determine any cost or fee-limit strategies.

All responses by the firm may be provided at the introductory meeting, but must also be submitted by the firm in written detail by a set time as directed by the negotiation team. In turn, the highest-ranked firm may ask questions of the negotiation team with regard to the project.

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The project manager should use benchmarks such as historical data, industry trends, and/or unique demands of the project or the project type to determine cost and fee goals. The project manager will lead the team through subsequent negotiations with the firm, and keep detailed records of any agreed terms and conditions not addressed in the specimen contract.

The negotiation team should not establish an absolute deadline for successful negotiation with one firm, but a desired timeline for negotiation goals, which should be communicated to the firm.

A reasonable time for negotiation of a complex project, given initial fee proposal as a base, should be thirty (30) days or less. However, the Owner may require a much shorter period, or allow longer duration. If the team cannot arrive at an agreement with the highest-ranked firm within the Owner's desired timeline or other reasonable time, or the parties otherwise have obvious irreconcilable project differences, the negotiation team may cease negotiations with the highest-ranked firm (in an official letter) at any time, and choose to begin negotiations with the second highest-ranked firm.

If, however, the negotiation team is able to reach a reasonable agreement with the highest-ranking firm that is in line with negotiation and project goals, the project manager or other appropriate Owner's representative may prepare a draft contract.

The draft should be reviewed by appropriate internal staff, including legal and financial reviews. Upon proper internal review and/or amendments, the final contract draft may be offered to the successful firm for execution.

(m) Notification of Final Award & Firm Debriefings

After a contract has been executed, all finalists firms should be notified in writing of the award and any unopened fee proposals of the finalists' shall be returned. If requested, the Selection Manager may agree to provide general debriefings to unsuccessful firms. If there is a significant number of requests or if the work load prohibits separate debriefings, the Selection Manager may choose to schedule one debriefing for all requests.

Debriefings can serve to assist the firms in preparing for future opportunities, instill the firm's confidence in the public trust responsibility of the Owner, and validate the legitimacy of the selection process. The Selection Manager may agree to such a debriefing prior to full execution of the contract, or may require such meetings to be scheduled after a contract is fully executed with the successful firm. If the Selection Manager agrees to a debriefing, the Selection Manager must focus the discussion during debriefings to actual selection procedures undertaken. Any discussion during debriefings about competitive presentations and/or proposals should be limited to positive, objective points primarily related to the successful firm's submittals and interviews.

Discussion of deficiencies and positive aspects of the presentation will be provided as part of the debriefing. *Any information provided should be based on the consensus of the group, avoiding any reference to any individual selection team members.*

(n) Variations to the Standard Selection Procedures

(i) Combining both QBS steps into one Request for Proposals (RFP)

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In cases where expediency is important, a Selection Committee may opt to combine the request for written responses into one (RFP) step with one evaluation by the Selection Committee, while still using Qualifications-Based Selection. In such case, the recommendation is that the requirements normally included in the RFQ and RFP be combined and condensed and issued as one RFP document. The Selection Committee still determines only three to five finalist firms for formal interviews and allows ample time to evaluate the written submittal prior to the formal interview and evaluation.

(ii) Interviewing Fewer Selected Finalists

In other cases where expediency is important, the Selection Committee may opt to reserve the right, in the initial RFQ or RFP, to interview a smaller number of selected finalists after a thorough review of qualifications. This is not generally recommended, and is not typically appropriate for selection of prime project team members such as a Construction Professional, or Design Builder.

(iii) Use of Telecommunications

The selection process may be executed using teleconferencing or videoconferencing to expedite or facilitate the sequences outlined in these procedures, wherever practicable. However, it is important that all of the same critical steps will be followed, and that only the means of communication is impacted.

B3. Selection of Special Inspection, Material Testing, and Geotechnical Firms

Special Inspections, Material Testing, and Geotechnical services play a major role in ensuring the quality of State of Georgia construction projects. For DBB and CM/GC projects, these services are typically procured and contracted directly by the Design Professional. The Design Professional should use a QBS process.

The following guidelines are provided by GSFIC to aid Design Professionals in acquiring services from the most appropriately-qualified special inspection, material testing, geotechnical, and related agencies and firms for State of Georgia construction projects. GSFIC must be consulted with closely during this process and will, in most cases, assign a representative to serve in, and/or as a consultant to, the selection process.

The following section explains how the QBS approach has been modified to adapt to the introduction of an application procedure for basic prequalification of special inspection agencies, material testing agencies, and geotechnical consultants.

a) GSFIC Application Procedure for Basic Prequalification

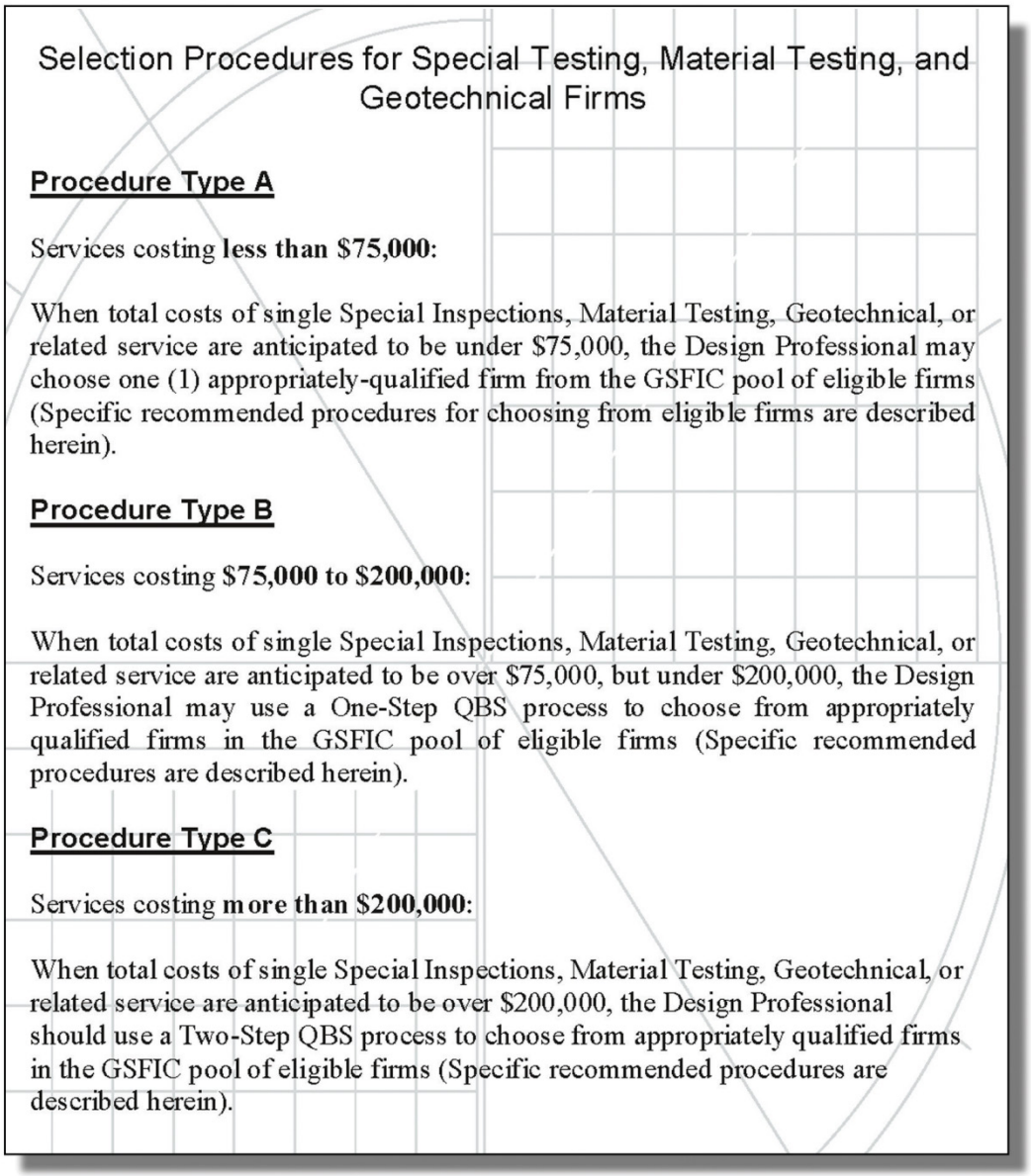
Special inspection, material testing, and geotechnical entities that wish to be considered for GSFIC-administered State projects, must submit an Application for Basic Pre-Qualification. In addition, the application process is intended to bolster the qualification levels of the Special Inspection, Material Testing, Geotechnical, and related industries in Georgia by providing an incentive for companies to attain professional accreditation and certification for continual improvement of these highly-demanding skilled services.

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GSFIC requires firms, who wish to be considered for GSFIC-administered State projects, to submit to this application process for basic pre-qualification or long-term eligibility for consideration of services. The application must be submitted by firms that are interested in being considered for services. Applications received will be reviewed by GSFIC for determination of the applicant's eligibility, based on the minimum requirements met by the applicant. Eligible applicants will be placed into a pool of "pre-qualified" service providers for a period of two years, contingent on the firm's continued eligibility. Applicants will be notified of eligibility status within sixty days of application. The pool of providers will be the source of Special Inspection, Material Testing, and Geotechnical firms that the GSFIC and Design Professionals will consider for inspection and testing services on GSFIC-administered State projects.

b) Recommended Selection Procedures

The Design Professional's selection of the firms for project services will be accomplished by a qualifications-based selection (QBS) process, in compliance with the GSFIC directive. The actual contract with these firms will be held by the Design Professional; therefore, GSFIC does not intend to dictate, in minute detail, the specific manner in which the selection process will take place. However, the following general parameters and procedures should be closely followed, and GSFIC strongly encourages Design Professionals to seek GSFIC consultation whenever necessary.



Selection Procedures for Special Testing, Material Testing, and Geotechnical Firms

Procedure Type A

Services costing **less than $75,000:**

When total costs of single Special Inspections, Material Testing, Geotechnical, or related service are anticipated to be under $75,000, the Design Professional may choose one (1) appropriately-qualified firm from the GSFIC pool of eligible firms (Specific recommended procedures for choosing from eligible firms are described herein).

Procedure Type B

Services costing **$75,000 to $200,000:**

When total costs of single Special Inspections, Material Testing, Geotechnical, or related service are anticipated to be over $75,000, but under $200,000, the Design Professional may use a One-Step QBS process to choose from appropriately qualified firms in the GSFIC pool of eligible firms (Specific recommended procedures are described herein).

Procedure Type C

Services costing **more than $200,000:**

When total costs of single Special Inspections, Material Testing, Geotechnical, or related service are anticipated to be over $200,000, the Design Professional should use a Two-Step QBS process to choose from appropriately qualified firms in the GSFIC pool of eligible firms (Specific recommended procedures are described herein).

Figure 30: Special Procedure Types

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Due to the range of projects and the varying service cost, complexity, and scope, GSFIC has established the following cost thresholds for Design Professionals in determining the correct selection procedures:

(i) Procedure Type A: Choosing one firm from the GSFIC pool of eligible firms

Because GSFIC requires and verifies the minimum qualifications of Special Inspections, Material Testing, and Geotechnical firms in the basic pre-qualification process, the pool of these eligible firms generally should meet requirements for services anticipated to cost **less than $75,000**.

The GSFIC minimum qualifications required and held by eligible firms include:

- **Special Inspection Services:** Special Inspection agency must (1) meet required qualifications of, and must adhere to, the GSFIC Special Inspection Guidelines, and (2) meet the requirements of ASTM E329-07ae1.
- **Material Testing Services:** Shall meet the requirements of ASTM E329-07ae1.
- **Geotechnical Services:** Geotechnical firm must (1) hold a valid certificate of authorization with the State of Georgia indicating that they are approved to provide engineering consulting services; (2) employ a Georgia-licensed professional engineer who has at least 10 years of experience in the field of geotechnical engineering as a full time employee to the firm; (3) have evidence of a record of successful projects, similar in scope to GSFIC projects, over the past 5 years; (4) maintain at least two million dollars of professional liability insurance; and (5) meet the requirements of ASTM E329-07ae1.

Although the eligible firms in the pool meet the above minimums, Design Professionals should take great care in choosing the firm that is most appropriately qualified for the project services anticipated. Criteria considered by the Design Professional in determining the firm may include, but not be limited to, the following:

- Relevance of service categories linked to incumbent project,
- Accreditation types and levels,
- Proximity of office/laboratory location to incumbent project,
- Field personnel's certification types and levels.

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The Design Professional shall promptly begin negotiations with the firm determined to be most appropriately qualified in order to reach a contract for a reasonable cost. If a contract cannot be reached for any reason, the Design Professional should formally break off negotiations with that firm, and begin negotiations with a second qualified firm, and so on, until a contract is reached.

Prior to contracting with the firm, the Design Professional must submit a one or two-page final selection summary report to GSFIC outlining:

- Brief description of selection procedure (e.g., *Procedure Type A* and other relevant details),
- List of firms considered,
- Recommendation and justification for the final selection,
- Evidence that the negotiated price is reasonable for the project.

(ii) Procedure Type B: Using a One-Step QBS Procedure

When total costs of single special inspections, material testing, geotechnical, or related services are anticipated to be over $75,000, but under $200,000, the Design Professional may use a one-step QBS process to choose from appropriately-qualified firms in the GSFIC pool of eligible firms. In the *one-step* process, three to five firms will be selected from the entire pool by the Design Professional and will be invited to submit Statements of Qualifications to the Design Professional for additional consideration. Criteria considered by the Design Professional in determining the three to five firms may include, but not be limited to, the following:

- Relevance of service categories linked to incumbent project,
- Accreditation types and levels,
- Proximity of office/laboratory location to incumbent project,
- Field personnel's certification types and levels.

In a Request for Qualifications, the Design Professional will formally request the three to five participants to submit additional information in the form of a Statement of Qualifications about their firms for QBS processing. Information requested and considered by the Design Professional in selecting a firm to perform services on the incumbent project may include the following deliverables/ criteria, or other deliverables/criteria as deemed appropriate:

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- Experience history on related projects,
- References (from Owner/Design Professional) of recent projects,
- Related tests performed and techniques used,
- Field and laboratory equipment inventory,
- Equipment calibration procedures,
- Field procedures,
- Current workload,
- Evidence of understanding of codes and standards,
- Description of procedures for handling and reporting discrepancies,
- Quality assurance practices,
- Individual field personnel's experience (overall and with provider),
- On-site inspection of the firms' laboratory and office facilities to verify certain competencies,
- The firms' staffing diagram and percentage of proposed project time per proposed team member.

In the one-step process, a qualified Selection Committee of three or five individuals representing the Design Professional will evaluate the submitted Statements of Qualifications using appropriate criteria (above or other). The Selection Committee should either (1) include an appropriate GSFIC representative, or (2) closely consult an appropriate GSFIC representative during the selection. The committee will individually review, score, and rank the submittals by weighing the criteria used for the selection. The deliverables, criteria, and corresponding weights must be pre-communicated to the submitting firms in the issued Request for Qualifications. The highest-ranked firm, using the sum of the individual Selection Committee member's rankings, will be the apparent awardee, subject to actual contract negotiation with the Design Professional. If a contract cannot be reached for any reason with the highest-ranked firm, the Design Professional must formally break off negotiations with the highest-ranked firm and may negotiate with the second highest-ranked firm and so on, until an agreement is reached.

Prior to contracting with the firm, the Design Professional must submit a one or two-page final Selection Summary Report to GSFIC outlining:

- Brief description of selection procedure (e.g., "Procedure Type B" and other relevant details),
- List of firms considered and submitting firms,
- Recommendation and justification for final selection,
- Evidence that the negotiated price is reasonable for the project.

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(iii) Procedure Type C: Using a Two-Step QBS Procedure

For larger and more complex scopes of project services involving Special Inspections, Material Testing, Geotechnical, or related firms that are anticipated to be over $200,000, the Design Professional should use a Two-Step QBS process to choose from appropriately-qualified firms in the GSFIC pool of eligible firms.

Because a thorough selection process is necessary to maximize the competitive opportunity for firms as well as promote an efficient evaluation, a two-step process is recommended for qualifications-based selection for larger scopes of services.

In the *two-step* process, the section of the entire GSFIC pool of eligible firms whose services are relevant to the project (such as *structural steel* if structural steel inspection is being procured) should be directly solicited with a Request for Qualifications by the Design Professional, and those firms will be invited to submit Statements of Qualifications to the Design Professional for additional consideration.

In a Request for Qualifications, the Design Professional will formally request all interested, appropriate participants from the pool to submit additional information in the form of a Statement of Qualifications for QBS processing. Information requested and considered by the Design Professional in selecting a firm to perform services on the incumbent project may include the following deliverables/criteria, or other deliverables/criteria as deemed appropriate for the project:

- Relevance of service categories linked to incumbent project,
- Accreditation types and levels,
- Proximity of office/laboratory location to incumbent project,
- Field personnel's certification types and levels,
- Experience history on related projects,
- References (from Owner/Design Professional) of recent projects,
- Related tests performed and techniques used,
- Field and laboratory equipment inventory,
- Equipment calibration procedures,
- Field procedures,
- Current workload,
- Evidence of knowledge and understanding of codes and standards,
- Description of procedures for handling and reporting discrepancies,
- Quality assurance practices
- Individual field personnel's experience (overall and with provider),
- Onsite inspection of the firms' laboratory and office facilities to verify certain competencies.

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In the two-step process, a qualified Selection Committee of three or five individuals representing the Design Professional will evaluate the submitted Statements of Qualifications using appropriate criteria (above or other). The Selection Committee will include an appropriate GSFIC representative.

The committee will individually review, score, and rank the submittals by weighing the criteria used for the selection. The deliverables, criteria, and corresponding weights must be pre-communicated to the submitting firms in the issued Request for Qualifications. The three to five highest-ranked firms, using the sum of the individual Selection Committee member's rankings, will be the apparent finalists.

The Design Professional will invite the finalists to submit project proposals and submit to an interview by the Selection Committee. Among the information requested, the project proposal should include proposed team qualifications and experience data that specifically relate to the project at hand, and other project-related plans and methods.

Deliverables and criteria for evaluation of the proposals and interviews may include the following (or other project-specific information):

- Firm's staffing diagram and percentage of proposed project time per team member,
- Firm's proposed techniques and methodologies for the project,
- Detailed project plans and schedule for project.

The Committee will review, score, and rank the project proposals and interviews individually by weighing the criteria used for the selection. The deliverables, criteria, and corresponding weights must be pre-communicated to the submitting firms in the issued Request for Project Proposal or Notice to Finalists. The highest-ranked firm, using the sum of the individual Selection Committee member's rankings, will be the apparent awardee, subject to actual contract negotiation with the Design Professional. If a contract cannot be reached for any reason with the highest-ranked firm, the Design Professional must formally break off negotiations with the highest-ranked firm and may negotiate with the second highest-ranked firm and so on, until an agreement is reached.

Prior to contracting with the firm, the Design Professional must submit a one or two-page final Selection Summary Report to GSFIC outlining the following:

- Brief description of selection procedure (e.g., "Procedure Type C" and other relevant details),
- List of firms considered and submitting firms,
- Recommendation and justification for final selection,
- Evidence that the negotiated price is reasonable for the project.

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B4. Additional Procedural Information for Design Professionals

For more specific guidance on managing a selection, including committee roles, development of solicitation documents, scoring documents and responsible review of submittals, Design Professionals should consult SCM Chapter 3.2 (B1): Selection of Consultants.

(a) State Entity Management of Selection

In cases where the State entity is contracting directly with the Special Inspection, Material Testing, and Geotechnical firm, it is recommended that the overall process of selection mirror closely the procedures prescribed in the SCM for other general consultants. One notable exception is the exclusive use of the existing pool of prequalified firms that are eligible for consideration for GSFIC-administered projects. Consult SCM Chapter 3.2 (B1): Selection of Consultants.

Note: For more information on selection procedures, see GSFIC's Design Guidelines for Design Professionals for Selecting Special Inspections, Geotechnical, Material Testing and/or Related Services.

B5. Selection of Vendors for Furnishings, Fixtures, and Equipment (FF&E)

The recommended selection procedures set forth in this section are designed to assist Georgia State government entities using the project delivery methods used by the State.

A. Selection of Vendors for Furnishings, Fixtures and Equipment (FF&E)

(i) Procedures for Selecting Vendors of Furnishings, Fixtures and Equipment (FF&E) Vendors

These procedures are based on current GSFIC and BOR methods, since GSFIC and BOR administered construction projects comprise the overwhelming majority of construction projects conducted by the State. A general overview of selection may be summed up as follows:

First, FF&E items are properly specified for the project, usually by the Design Professional with close coordination with the agency. A competitive bidding-based solicitation document is developed by the Owner in the form of an Invitation to Bid, incorporating schedules of the specified equipment on which the vendors bid. The ultimate selection of the FF&E vendor is based on cost, and therefore contracts for provision of FF&E (or *loose equipment*) items are generally awarded to the lowest-cost responsible and responsive vendor. Reference SCM Chapter 3.2 (A2): Selection Methods for more information on competitive bidding.

A. Use of "Best Value" Selection with RFP

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In other cases where expediency is extremely important, and ONLY if fully authorized by GSFIC or BOR, the Owner may be interested in issuing an RFP to receive cost information in conjunction with information related to the qualifications and/or project methodologies proposed by the submitting FF&E vendor. The premise is that a complex evaluation of the combination of cost, fee, and other factors will result in the selection of the firm that has submitted the *best value* or *best interest* proposal. *This is not generally recommended for most selections*. Reference *SCM Chapter 3.2 A2: Selection Methods* for more information.

B. Requirements for the Selection and Specifications of Loose Equipment

The agency should be heavily involved in, and is ultimately responsible for, the selection of the loose equipment to be included in the project budget of a new building project.

Prior to the preliminary plan and budget estimate approval, those involved in planning loose equipment should discuss the furniture and equipment requirements with the project Design Professional and/or Owner (GSFIC or BOR) to determine the loose equipment budget.

Development of the equipment list, specifications, and plans should then proceed. The agency shall produce, or shall have produced, an equipment layout plan for the project. The Design Professional may produce such a plan showing the furniture in place as part of the plan development (Some dealers may provide this service.).

The evaluator should rely on information contained in the manufacturer's latest catalog or from information obtained from the manufacturer only. Do not rely on previously written specifications for information to be inserted on a requisition sheet. Manufacturing changes quickly render any preceding specifications obsolete. The estimated price of the item should be the estimated bid price and not the catalog list price.

If applicable, include the list price on forms sent to the GSFIC or BOR offices for review and on final copy. Forward a draft copy of the requisition to the Using Agency for review as soon as possible. The draft will be returned with comments noted. A final FF&E schedule may then be prepared.

Capital Outlay Bond monies may not be utilized for items that meet the following criteria:

- Expendable items (items that may be easily removed from the facility, depleted, or supply-type items),
- Items with a life span of less than five years,
- Intangibles, such as service and maintenance, storage, cleaning and/or repairs,
- Leased equipment,
- Coin-operated machines
- Accessories and/or decorating items such as mirrors, rugs, and similar items,
- Carpets and draperies (included in the general contract),
- Items requiring attachment to buildings (included in the general contract).

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Items requiring plumbing connection (quick connect), direct-wired electrical connection, and direct connection to vent or exhaust, gas supply, and similarly connected items *may* be specified, *but* it is the responsibility of the agency to make certain that the appropriate utilities are in place in the facility *and* that the required connection is plainly and clearly indicated so that there will be no conflict upon installation of the equipment.

A complete requisition form for each different item of equipment should be produced in accordance with the following:

(a) Manufacturer's Name and Address

Give full name and mailing address (including zip code) of the *manufacturer* of the equipment, not the vendor or supplier. In making a selection from a catalog, be sure to use the *manufacturer's* name, not the catalog name.

(b) Manufacturer's Model Number

Give the manufacturer's exact current number designation of the item desired. Model numbers of many manufacturers are comprised of letter and number designations, many of which indicate a specific component, finish, fabric, configuration, or similar designations. An inaccurate model number may conflict with the description of the item given or may cause the wrong product to be purchased. Do not give catalog numbers taken from catalogs but specific model numbers. If the item is comprised of

several different components requiring more than one model number, please indicate the model number for each (i.e., A102-T top, 632-B base).

(c) Description of Item

Describe the basic materials of the item and give exact dimensions. Also describe any performance standards or special requirements concerning this item. Continuing the example above, the correct description might be a *conference table, 72" wide x 36" deep x 32" high; plastic laminate top with vinyl bull-nose edge on cast aluminum base with nylon glides*. If electrical power is required, indicate the electrical characteristics required, i.e., voltage, phase, and any other electrical characteristics, and carefully check the plans to make certain that the proper power requirements have been provided to the exact area needed. This would be the appropriate place to indicate any utility information.

(d) Finish

For each exposed surface requiring a finish treatment, indicate the material, finish number (if applicable), color and/or color name, and if any finish component is outsourced (produced by another manufacturer), supply that manufacturer's name and number.

(e) Upholstery Material

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A full description of each fabric/upholstery on the item including content, pattern, number designation, grade, color, color description, and fabric treatments, including any flame-retardant requirements requested by the agency, must be given. Also, any outsourced fabric, other than manufacturer's standard, must include the name of the fabric manufacturer. COM (customer's own material) fabrics may be specified to be applied on any item as long as the list price of the item, including the COM fabric price, does not exceed the guidelines. The GSFIC does not purchase fabric separately from the items specified; any COM material must be specified for application to the item desired. Use a separate requisition for each different fabric or combination of fabrics. If no fabric choice is offered on an upholstered item, state the manufacturer's standard.

(f) Quantity

Give the total number of the item specified that will be required for the entire project. This should be coordinated with the Design Professional's *final* plans.

(g) Unit Budget Price

Give the best estimate of the bid selling price including delivery and installation:

1. If the equipment bid date is approximately one year hence, then a 40 percent discount from the list price should be used to determine the Unit Budget Price.

2. If the equipment bid date is approximately two years hence, then a 30 percent discount from the list price should be used to determine the Unit Budget Price.

3. If the equipment bid date is approximately three years hence, then a 20 percent discount from the list price should be used to determine the Unit Budget Price.

   The budget prices used should be verified with a local vendor or manufacturer's representative, especially specialized equipment that usually has a much lower discount schedule.

(h) Total Budget Price

The Total Budget Price is the product of the quantity and the Unit Budget Price.

(i) Distribution

Under the heading *Room Number Taken from Final Plans*, list the rooms, using the number and name of the space as shown on the Design Professional's final plans in which the specified item is to be installed. Under the heading *Quantity*, give the quantity of the item placed in the various rooms listed.

Where the space provided on the requisition is insufficient, attach additional pages (including any manufacturer's specification sheets or drawings) as necessary.

Check the equipment list against the following before submission:

1. Check manufacturer's name, address, zip code, model number, finish, upholstery, distribution, quantity, extension of unit budget prices, and totals.

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2. Check type of equipment for compliance with *Paragraph H* herein.

3. Check to verify that all equipment requisitioned is loose, not attached to the building.

4. Check requisition against Construction Documents for the following:

   - Duplications,
   - Electrical, plumbing, gas, vent and exhaust connections,
   - Location of equipment, i.e., not obstructing windows, doorways, and similar location identifiers,
   - Dimensions of equipment including portability of moving equipment to final location (through doorways, stairs, elevators, and similar difficult passages)

5. Check for inclusion of all pages.

6. Forward the original and one copy of the requisition to the Design Professional and the Board of Regents.

(ii) Advertisement and Use of Invitation to Bid (ITB) for FF&E

Once the Invitation to Bid is completed and approved for release, a public notice announcing the procurement opportunity is prepared by the purchasing or Contracting Officer and posted on the Internet for public viewing at the Georgia Department of Administrative Services' (DOAS) Georgia Procurement Registry website. The advertisement should be posted at least thirty calendar days prior to the due date for Statements of Qualifications in response to the RFQ. The RFQ is posted, along with the advertisement, in a manner prescribed by DOAS. In addition, if it is deemed advantageous, the public notice may be published in an appropriate general circulation newspaper or other media in the vicinity of the project location.

Newspaper advertisements should be written as succinctly as possible and should reference the DOAS website as the medium for project details and appropriate documents. For efficiency, more than one project may be advertised in a single newspaper notice.

The notice should specify the sole person to whom all inquiries are to be directed (normally the Purchasing or Contracting Officer for the procurement).

(iii) Bidding and Award

Bids are received in a manner prescribed by the Invitation to Bid and the FF&E general conditions. Award shall be made to the lowest-cost responsive and responsible vendor(s) who can supply the products in the stated acceptable time period.

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Section Three: Project Implementation
Chapter 3.3: Final Project Definition



A. PURPOSE

Final Project Definition is the continuation of the activities of section 2.0, Project Development Phase. This chapter will review the activities which will result in the development and publication of approved project requirements coordinated with funding allocations and which meet the Owner's Strategic Plans, goals and objectives. The Final Project Definition phase should occur when the project is funded for the start of design and potential construction.

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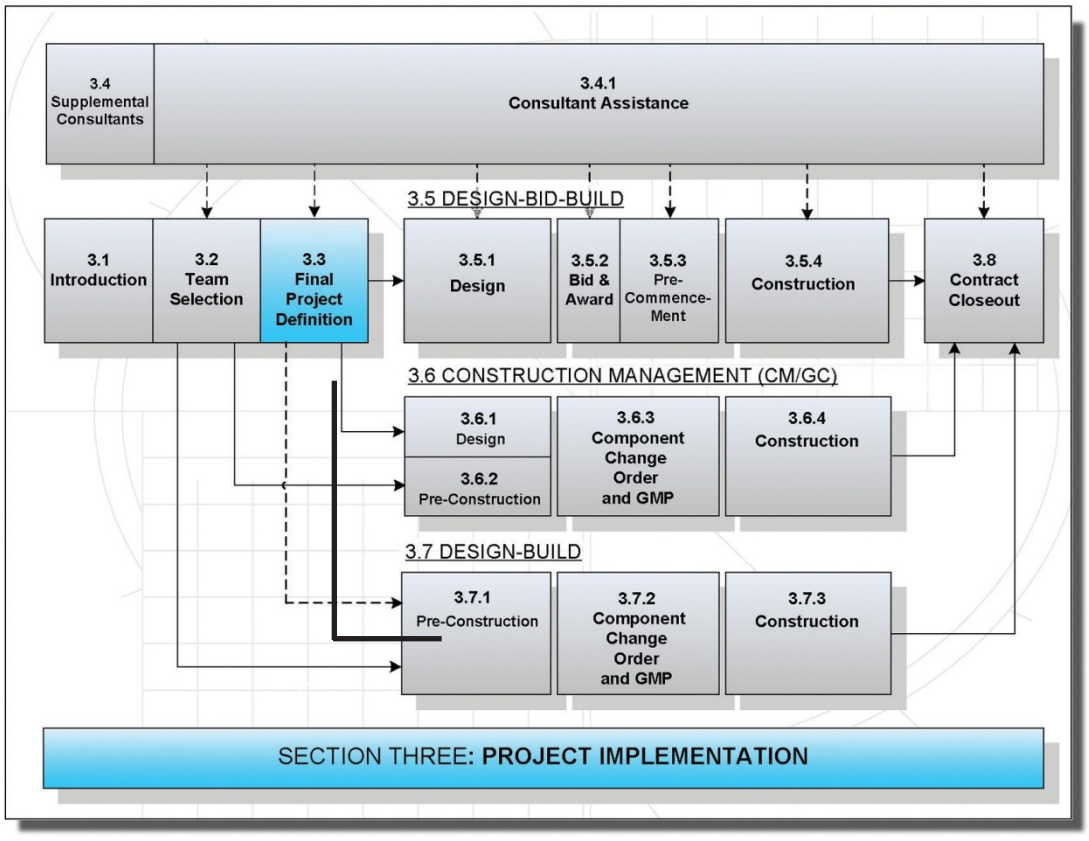


FIGURE 3.1: PROJECT IMPLEMENTATION FLOW DIAGRAM

It is recommended that a Design Professional with experience in the particular project type complete the Final Project Definition activities. The Final Project definition Phase should occur when the project is funded for design and potential construction. It is not generally recommended that the Final Project Definition activities (or the project's design) proceed without a construction funding date. Delays between the completion of the Final Project Definition activities and project funding may significantly affect the correlation of scope and construction cost.

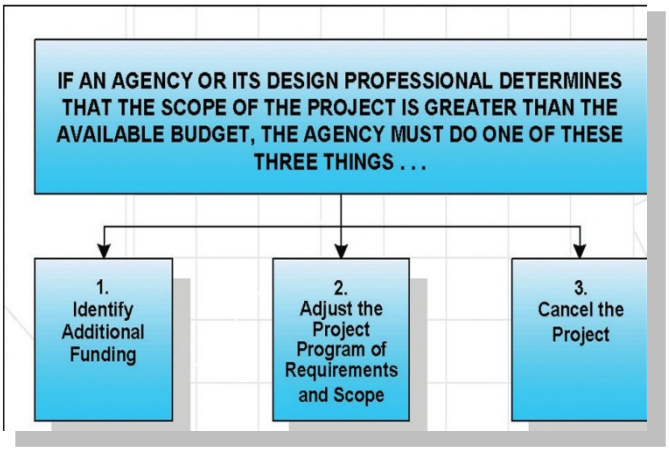


Figure 3.2: Decision Tree for Aligning Projects

B. OBJECTIVE

The objective of the Final Project Definition Phase activities is to identify the scope, schedule and budget of a proposed project which supports user, agency and owner approval to proceed into design and construction. This information will be used to verify the project approved is the project provided and that any modification of scope, schedule and/or budget must be addressed and approved in this phase before proceeding into design.

C. GENERAL CRITERIA

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The goal is to evaluate the documentation prepared for Sections 2.1-3.1, update and add to this information through the Final Project Definition activities and obtain approval to proceed to Design. See Definition Section to review potential Final Project Definition activities. The Project Manager should reconcile the materials presented in the Funding Request as required by the agency. The agency will review the Project Development Checklist; update the Capital Project Funding Request Worksheet and the Executive Summary.

C1. Final Programming

Final Programming is to be based upon a budget developed and provided by the owner/using agency. Programming can only proceed with an approved budget. Programming is an inclusive activity which involves the Owner, Agency and the User.

Through scheduled interviews with identified parties, the written program is developed and includes a listing of the number and types of spaces, their area requirements, occupant requirements and the spaces required to support them. Programming includes developing and documenting the adjacency needs of the program elements. When the written program is approved by the Owner, Agency and User, it is used to develop a construction cost estimate and may be based on the square footage of the project. The goal is for the cost estimate during programming to match the budget established by the Owner. Upon final approval, the project will proceed into the design phase.

C2. Reconcile Program and Budget

The Agency is to update the program and budget information developed in SCM Chapter 2.4: Funding Request based on the approved program developed in the Final Project Definition 3.3. If there is a delay in the construction, escalation should be used to reconcile the budget to the time of construction.

C3. Design Narrative

The Agency is to update the Design Narrative based on the narrative developed in the Funding Request. (SCM Chapter 2.4: Funding Request).

C4. Management of Project

The Agency is to update this information from that prepared in the Funding Request. (SCM Chapter 2.4: Funding Request).

C5. Project Delivery Method and Funding Sources

The Agency is to update this information from that prepared in the Funding Request. (SCM Chapter 2.4: Funding Request).

The following should be decided at this stage:

- Finalize the delivery method,
- Finalize the schedule, and
- Finalize the funding.

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(a) Delivery Methods (Design/Bid/Build, CM/GC, Design-Build)

The Agency is to finalize the delivery method, based on the information provided in SCM Chapter 3.1 Project Delivery Methods. The project delivery method is selected by a collaborative basis which may include the Owner/Using Agency and GSFIC or BOR and will be based upon the project location, size, budget, complexity and schedule.

(b) Schedule

The Agency is to prepare a realistic project general funding schedule and design and construction schedule. The schedule is to be based on the Project Delivery Method and the size and complexity of the project. It should be tied to real dates and show any important dates which will affect the project schedule, such as demolition of buildings, start of school, etc. See section SCM 3.1 Project Delivery Methods for Schedule Templates (requires Microsoft project software).

(c) Funding Sources/Alternative Funding

The Agency is to update Funding Sources from that prepared for SCM Chapter 2.4: Funding Request. The goal is to finalize the funding sources.

Potential revenue should be discussed in this section. List all revenue sources individually (parking fees, dormitory rent, and other sources), and calculate the total. Where State General Obligation (GO) Bonds are anticipated for project funding, any revenue generating aspect of a project must be examined with the GSFIC early in the project development process. Verify that these discussions have taken place and any issues resolved.

(c) 1. Risk Factors

The Agency is to update this information from that prepared for SCM Chapter 2.4:Funding Request. The goal is to identify and resolve any outstanding issues which would affect the project.

Risk factors can include:

1) A Program that differs significantly from the original scope or budget;

2) Market construction cost escalation that was not addressed in the original budget;

3) A shortened schedule duration which could drive up costs.

4) Turnover of using agency staff that was involved in the programming and overall project definition;

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5) Geotechnical findings that would change construction assumptions such as spread footings vs. deep foundations.

C6. Special Performance Requirements

The Agency is to update this information from that prepared in SCM Chapter 2.4: Funding Request. The goal is to identify any special systems or needs required by the project and ensure it is included in the program and budget. Special Requirements include but are not limited to the following:

The use of a special system to tie into an existing system:

- The use of a single vendor to provide a service or project element,
- Governmental approvals and requirements,
- Special requirements for historic or renovation projects,
- Special AV, communications or technology requirements, etc.

C7. Sustainable Design

The Agency is to update in written form their goals and needs regarding sustainable design and if any certifications are required. This should be reconciled with the project management and delivery system, scope, schedule and budget and coordinated with SCM Chapter 2.4; Funding Request.

C8. Loose Equipment and Furniture, Fixtures, and Equipment

The Agency is to update this information from that prepared in SCM Chapter 2.4: Funding Request. The FFE information may be gathered in the Programming and Budgeting Phase dependent upon who will be specifying, purchasing and installing the FFE, including existing items. The goal is to clearly identify the FFE as Cost of Construction (typically built-in or attached to the building) or part of a Loose Furniture and Equipment budget and to identify who is responsible to specify, purchase and install. This should be reconciled with the Schedule and the Budget.

C9. Technology

The Agency is to update this information from that prepared in SCM Chapter 2.4: Funding Request. The goal is to identify what is needed, who will specify, purchase and install, and how it is funded. The IT information may be gathered in the Programming and Budgeting Phase dependent upon who will be specifying, purchasing and installing. This should be reconciled with the Schedule and the Budget. Information regarding IT Guidelines is available at: Georgia Technology Authority (GTA) Website.

C10. Site Analysis

The Agency is to update this information from that prepared in SCM Chapter 2.4: Funding Request. See SCM Section 2.3 C8. Site Selection and Analysis for a detailed explanation.

C11. Project Construction Budget

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The Agency is to update this information from that prepared in SCM Chapter 2.4: Funding Request. The project construction budget developed by the Owner and Agency, is referred to as the Stated Cost Limitation, or SCL. The Project Construction Cost Estimate developed by the Design or Design-Build Professional cannot exceed the SCL. The Project Construction Estimate, based on the approved Program and other factors, should be prepared in CSI Uniformat/Building Systems Format. Reference the Office of Planning and Budget OPB Website for further assistance. It is recommended an independent professional estimator complete this estimate.

As a minimum, the Project Construction Budget would include the following items:

1. In the *executive summary,* provide an outline of the general tasks, describe the project and project scope. Summarize the results of the estimate compared to the initial budget. The executive summary should also include a description of the costing methodology (including historical cost data) used to generate the estimate.
2. Complete a Capital Project Funding Request Worksheet. Identify total costs and funding sources/amounts, construction cost (SCL), design and other consultant's fees, special costs, FF&E, contingencies, and escalation.
3. Furnish notes concerning the estimate. Provide an outline of the criteria, allowances, and assumptions used to produce the estimate. Notes should be grouped by building systems.

   Note: *This section is not meant to "dictate" the design or aesthetics of a project, but rather to provide an indication of the estimator's assumptions and a basis for the conceptual estimate.*

4. Provide a Project Cost Summary (based upon the CSI UniFormat breakdown), which is a summary of information from the estimate per building system.

5. Supply *estimate detail***.** Generally, at this phase, CSI UniFormat is recommended.

6. Provide *exhibits* such as meeting minutes, existing agency and consultant information, studies and reports, and other information as appropriate.

Note: *The level of consultant support, if needed, to complete Final Project Defini- tion should be based on the capabilities of the agency's staff as well as the selected project team and the complexity of the project. It is highly recommended that the Final Project Definition activities be completed by the Design Team's estimator, the Design Builder (with reconciliation by the Executive Administrator/Owner's repre- sentative) or that the agency hire an "independent" estimator to complete this task.*

(a) Operations and Maintenance Impacts

Update this information from that prepared in SCM Chapter 2.4: Funding Request. If the agency is starting its project development activities in this phase, use the requirements identified in the previous phase (See *Operation and Maintenance Impacts* in Project Development) where a detailed explanation is available. If all requirements have not been addressed or additional information is available, modify this section to include those items.

C12. Total Project Budget

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The Agency is to update this information from that prepared in SCM Chapter 2.4: Funding Request. The total project budget includes the SCL and all professional services, fees and items to be purchased by the Owner and/or Agency for the Project. See the Total Project Cost Worksheet (Figure 18) It is recommended the Agency use an independent professional consulting firm to prepare this document if the Agency does not have the expertise in-house.

a) Total Project Cost

Prepare an estimate using the Total Project Cost Worksheet (Figure 18).Update this information from that prepared in *SCM Chapter 2.4: Funding Request*. If the agency is starting its project development activities in this phase, use the requirements identified in the previous phase (See Total Project Cost in *Section Two: Project Development*) where a detailed explanation is available).

If all the requirements have not been addressed in the previous phase or additional information is available, modify this section to include those items.

The Total Project Cost estimate combines the construction cost with all Design Team and engineering fees, special consultants, land acquisition, and loose equipment activities and costs. The project cost should total all aspects of the project in order to obtain the complete project cost. If the agency does not have adequate expertise to prepare the Total Project Cost estimate, a professional consulting firm should assist with the preparation of the document.

C13. Final Project Definition Report

The Agency will provide a Final Project Definition Report that includes the following:

1. The Executive Summary, defined in SCM Section 2.3 C1. Executive Summary;

2. A Completed Capital Project Funding Request Worksheet;

3. Notes which provide information regarding assumptions used to produce the Construction Budget and Total Project Budget;

4. Construction Cost Estimate in CSI Uniformat, the goal of which is to match the SCL (Stated Cost Limitation);

5. Exhibits which support reports, i.e.: minutes, reports etc.

Note: The level of consultant support to complete this report is based on the capabilities of the agency staff and the complexity of the project.

D. APPROVALS

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It is recommended that the Final Project Definition Phase activities be prepared by a Design Professional team with the assistance of the agency. It is for use by, and approval of the agency and to authorize the Design Professional to proceed with project design.

Section Three: Project Implementation

Chapter 3.4: Supplemental Consultants



A. SUPPLEMENTAL CONSULTANTS

Supplemental consultants are utilized to help the GSFIC/Owner, and agency project management team. Some supplemental consultants contract for services directly with the Owner and some contract through the Design Professional. Supplemental Consultants are usually selected at or near to the selection of the Design Professional as indicated in Figure 33.

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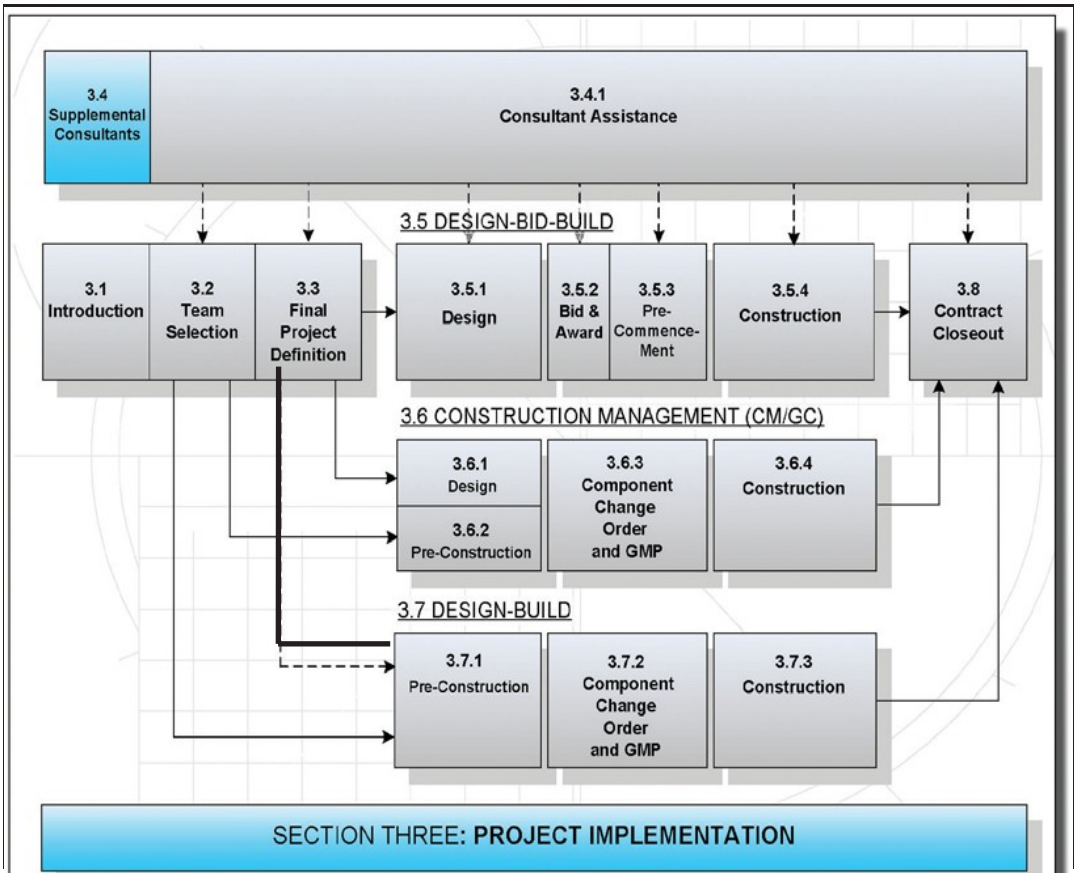


FIGURE 3.3: THE PROJECT IMPLEMENTATION PROCESS FLOW CHART

B. GEOTECHNICAL ENGINEERING, LAND SURVEYING, AND TESTING SERVICES

The Design Professional has the responsibility to obtain all information concerning the physical conditions of the site. Typically the Design Professional procures and contracts directly with the geotechnical engineer, land surveyor, and testing agency.

The Owner pays the cost of the services required to obtain this information. The cost for the services is not part of the Design Professional's fee. A separate line item for this cost is included in the Total Project Budget.

The Design Professional selects the geotechnical engineer and land surveyor best suited to the project and determines the scope of services for the project. Procedures require that the Design Professional secure a quotation of a not-to-exceed fee from each selected firm, and forward that copy of the quoted fee and scope of services to the GSFIC and the agency for authorization. The Design Professional may, at its discretion, submit more than a single proposal; however, multiple submissions are not required for authorization. Selection shall be based on qualifications and experience, not on lowest price.

C. SPECIAL INSPECTIONS

Special inspections are the monitoring of the material and workmanship critical to the integrity of the building structure. Special inspections include reviewing the work of the Construction Professional and its team to make certain that they are following approved plans and specifications while observing relevant codes and reference standards. Multiple special inspectors may work on one project. Typically, the Design Professional provides and contracts the services for special inspections. Design professionals must use qualifications-based selection (QBS) for procuring special inspections services. Specifically, the procedures must generally be in accordance with OCGA Section 50-22-6 and with the GSFIC Special Inspection Guidelines.

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D. OWNERS REPRESENTATIVE

In instances when the GSFIC or agency personnel do not have the technical expertise necessary to successfully manage and monitor the planning, design, and construction activities for a project, a consultant may be hired as an Owner's representative to perform as a staff extension of the GSFIC's or agency's project management team. The Owner's representative may be contracted with as a Program Manager, Executive Administrator, or a professional construction consultant utilizing a limited services contract with a defined scope of services. Observe the requirements of OCGA § Section 50-22, and use a Two-Step QBS process similar to the selection of Design Professionals to select an Owner's representative Program Manager.

Reference *SCM Chapter 3.2: Team Selection* for the selection processes for consultants.

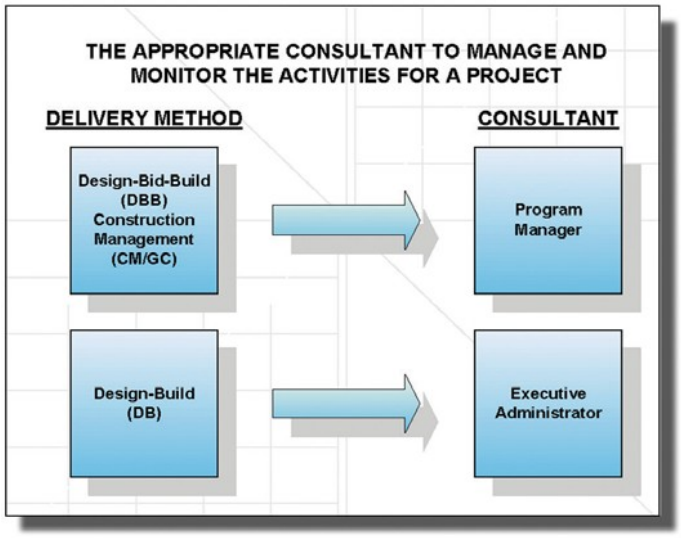


FIGURE 3.4: APPROPRIATE CONSULTANTS PER DELIVERY METHOD

E. BUILDING COMMISSIONING

Building Commissioning is a planned, collaborative, and systematic process of review and testing to confirm that the building systems and components demonstrate a state of dynamic and interactive operation in accordance with the building occupant's design intent. Building Commissioning begins during the Design Phase of a project with the development of a Building Commissioning plan and inclusion of Building Commissioning specifications in the Contract Documents. GSFIC has developed a State Building Commissioning Guide to assist Agencies in project planning and implementation for commissioning.

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Generally, an independently contracted third-party consultant who is contracted directly to the Owner/User Agency provides the commissioning services. Also, the Design Professional team, Construction Professional, or an in-house staff of commissioning specialists can provide commissioning services. But there may be a conflict of interest when anyone other than an independently contracted third party consultant provides commissioning services. *Best practice* would suggest that the Building Commissioning consultant provide peer reviews of the systems and components being prepared during schematic design and constructability reviews of the Design Development and Construction Documents. This peer review helps to assess the Construction Professional's ability to construct the project with an analysis of the construction drawings before they are released for construction. Building commissioning consultants should be selected by qualifications-based selection (QBS) in accordance with OCGA Section 50-22-6. For procedures for selection of the commissioning consultant, reference *SCM Chapter 3.2 (B1): Team Selection*.

The Energy Efficiency and Sustainable Construction Standards for State Buildings was developed in 2009 in accordance with the Energy Efficiency and Sustainable Construction Act of 2008 O.C.G.A § 50-8-18. This document provides a technical resource for State

Agencies, design professionals, contractors, and building operators. The Standards include Building Commissioning as a required component to ensure that all commissioned systems perform in accordance with the intended design.

F. SPECIALTY CONSULTANTS

For projects where the GSFIC or agency may have limited experience to provide project management services or when projects require specific technical skills, contract with a professional construction consultant for specific scope of services to augment the GSFIC or agency's project management team. Specialty consultants provide services that include the following:

- Laboratory design
- Clean room design
- Sustainable consulting
- Value engineering
- Cost estimating
- Scheduling
- Dispute resolutions
- Change order negotiations
- Peer reviews
- Constructability reviews

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- Compliance inspections
- Construction administration
- Food Service/Kitchen Operations
- Laundry Operations
- Acoustical and Audio/Visual design
- Pool design
- Security design
- Theater Consultation
- Library/Media Consultation
- Subsurface Utility Engineering
- Landscape and Irrigation Consultation
- Interior Design

- Furnishings
- Signage and Way finding
- Historic Preservation Services
- Site Specific Seismic Studies
- Building Energy Modeling Studies
- Traffic Analyses
- Hazardous Materials Consultation/Surveys
- Renderings/Models/Videos

If the agency elects to retain a specialty consultant, the agency must procure the consultant in accordance with the requirements of OCGA Section 50-22-1; however, where the anticipated contract amount will not exceed $75,000 there will be no public notice requirement or identification of the selection process as provided for in OCGA Section 50-22-1. Where the contract amount is anticipated to exceed $75,000, the specialty consultant must be selected by qualifications-based selection (QBS) in accordance with OCGA Section 50-22-6. For procedures for the selection of specialty consultants, reference SCM Chapter 3.2: Team Selection, B1: *Selection Procedures for Consultants*.

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SECTION THREE: PROJECT IMPLEMENTATION

Subchapter 3.4.1: Consultant Assistance



A. CONSULTANT ASSISTANCE

Consultant assistance is a service-delivery process that continues throughout all phases of the design and construction procurement process according to the scope of work and schedule of services. Consultant assistance usually concludes at the completion of contract closeout (See Figure 35 and Section 3.8 Contract Closeout).

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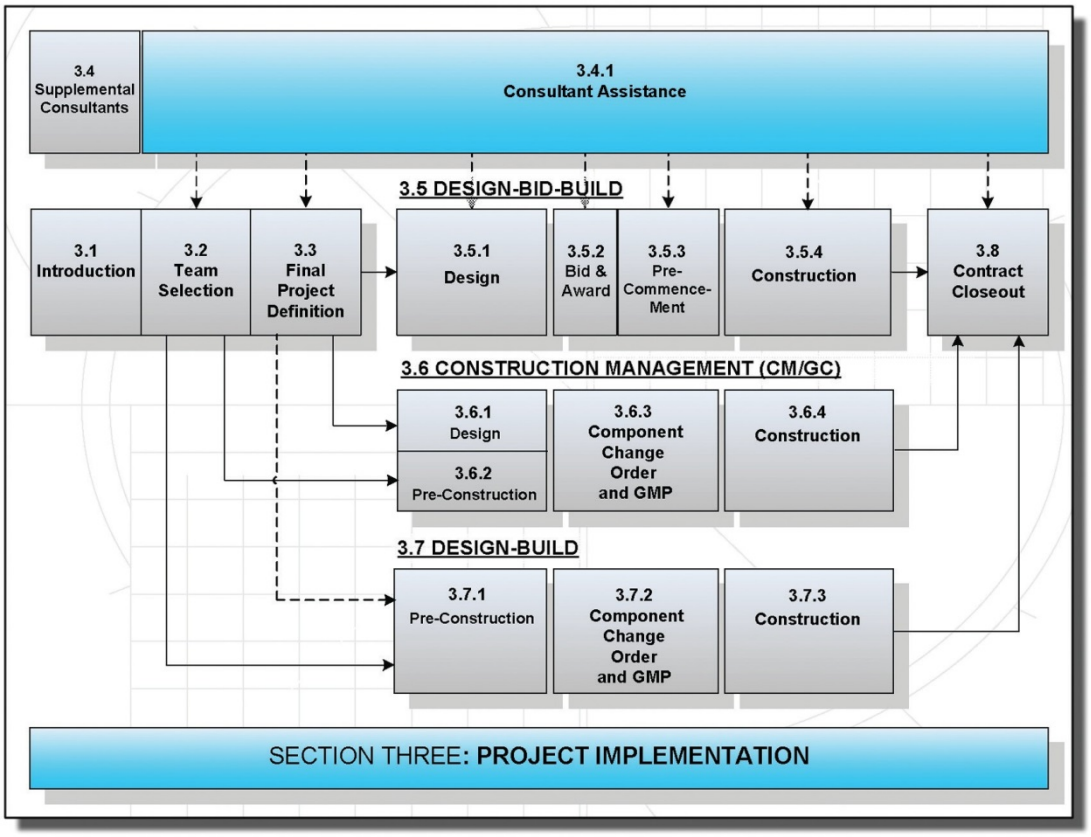


FIGURE 35: THE PROJECT IMPLEMENTATION PROCESS FLOW CHART

B. OWNERS REPRESENTATIVE

B1. The Owner's Representative as Program Manager

The Owner's representative as Program Manager represents the Owner (GSFIC and/or agency) throughout all phases of the project, including planning, design, construction, building acceptance, and closeout of the project to make certain that all elements of the work meet the required quality, design standards, and the Overall Project Schedule.

The Owner's representative as Program Manager will function as a staff extension of the Owner's (GSFIC's, agency's) project management team and will have a contractually defined delegation of authority to act on the Owner's behalf. The Owner's representative as Program Manager will provide its best expertise and resources. Services are provided in three phases.

(a) Phase One

Phase one shall consist of the review and augmentation of existing Final Project Definition Documents and coordinating the development of the program from which the Design Professional will design the project. The goal is to develop detailed design criteria for (1) quality, (2) serviceability (include as applicable, system performance requirements), (3) Building Commissioning methods, and (4) criteria, into a complete and verified agency's program. This enables the Design Professional, in coordination with the Construction Professional, to produce complete Construction Documents in accordance with the Design Professional's (the party that will actually manage and operate the finished project) program.

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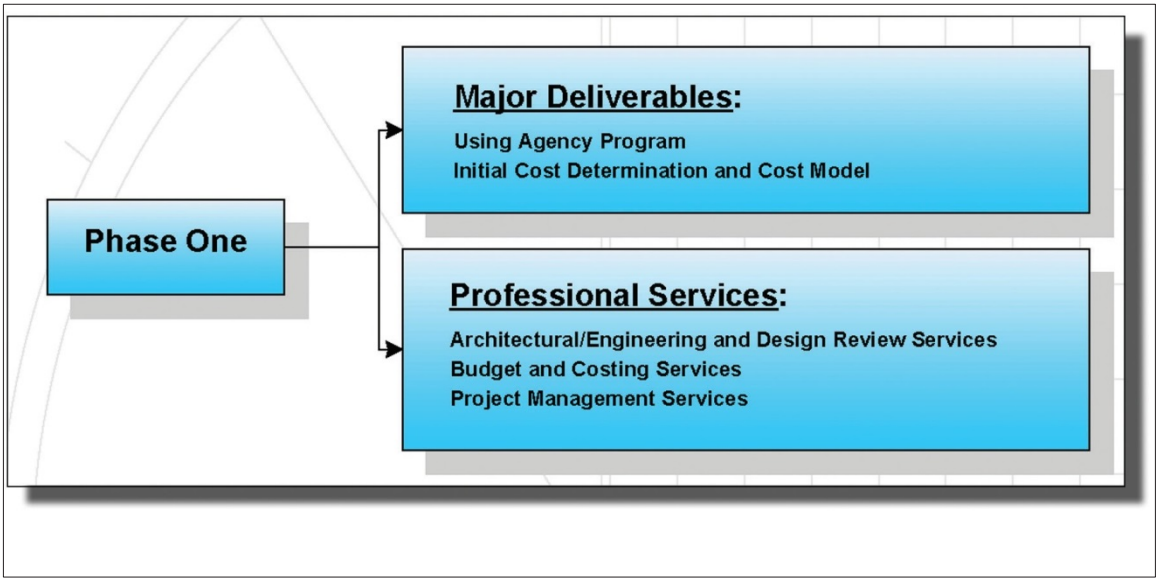


FIGURE 36: OR/PM PHASE ONE ACTIVITIES

(b) Phase Two

Phase two shall consist of the periodic review of the documents prepared by the Design Professional in coordination with the Construction Professional (contingent upon delivery method) to make certain that the Construction Documents are proper and correct developments of the Design Professional's program.

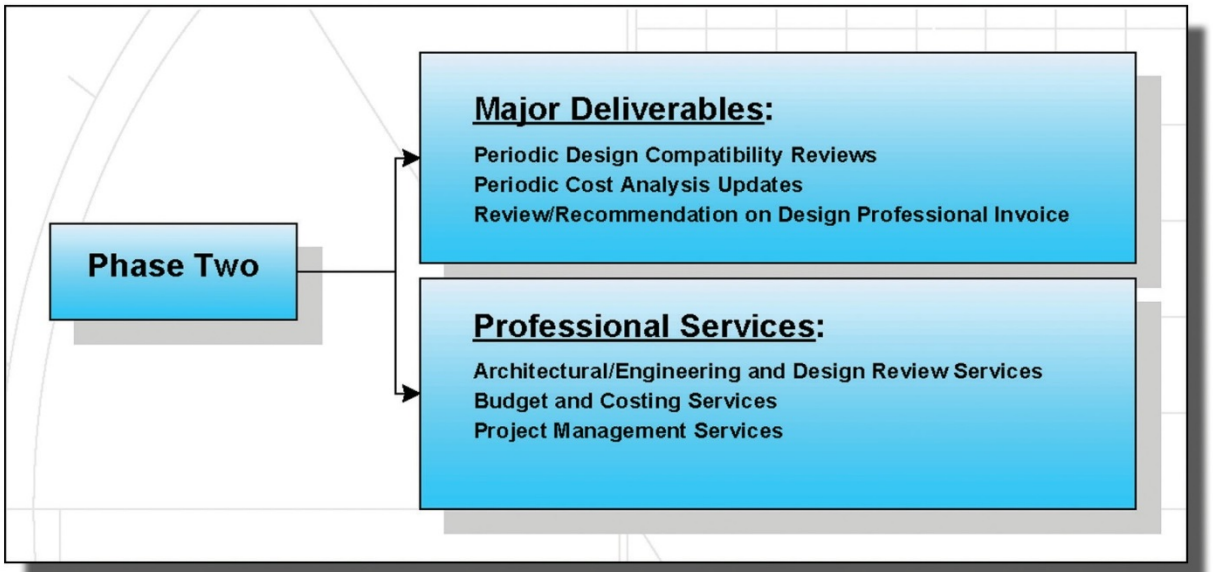


FIGURE 37: OR/PM PHASE TWO ACTIVITIES

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(c) Phase Three

Phase three shall consist of monitoring the construction of the project to make certain that the work is installed in accordance with the requirements of the Construction Documents and all applicable codes and regulations. This includes monitoring and management of, as appropriate, all change orders and pay requests, and the implementation of the Building Commissioning established in the Design Professional's program.

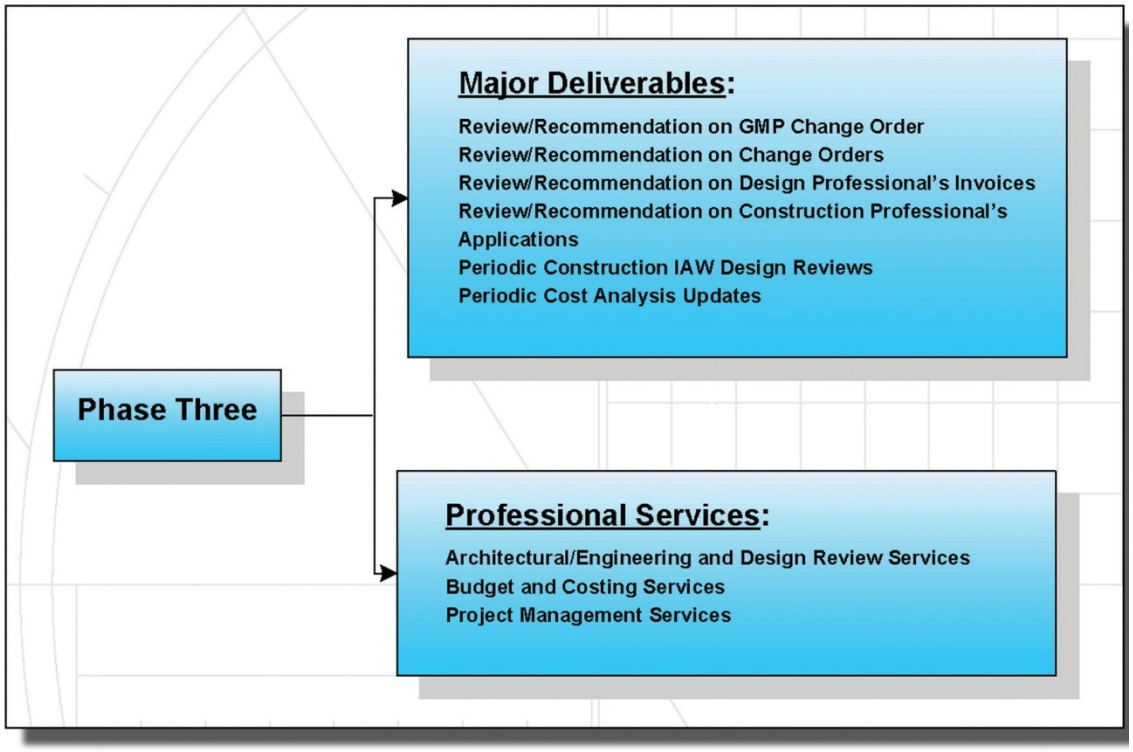


Figure 38: OR/PM Phase Three Activities

The above phases are not mutually exclusive but will overlap as the project progresses, particularly phases two and three. It is the Program Manager's responsibility to make certain that no duties are overlooked or unnecessarily duplicated during periods of overlap.

The Program Manager shall manage the Total Project Budget, which includes both the design and construction budget. During *Phase One*, the Program Manager shall, as a part of its budget and cost control services, review and process all proposed program changes for agency and Owner approval. The Program Manager shall regularly submit progress reports, including cost information, to the Owner as the Design Professional's (the party that will actually manage and operate the finished project) program is developed. During all phases, the Program Manager shall process the Design Professional's payment invoices according to the established contractual amount. The Program Manager shall advise the Owner in matters concerning the approval of payments.

As the Design Professional's design progresses, the Program Manager shall maintain the Program Manager's cost and budget analysis regularly and keep the Owner apprised of the design progress, change requests, and the potential budgetary consequences.

The Program Manager will use its best efforts to deliver to the Owner all the information that the Owner needs to (1) make certain that the Design Professional's program is accomplished with the established level of construction quality, (2) control the Total Project Budget, and (3) ensure that construction of the project is completed within the budget as it may be amended. An Owner's Representative *Program Manager Contract* with a detailed scope of service can be found at the BOR Web site.

B2. The Owner's Representative as Executive Administrator

The Owner's representative as Executive Administrator represents the Owner (GSFIC and/or agency) throughout all phases of the project, including planning, programming, design, and construction of the project. The Owner's representative as Executive Administrator will provide its best expertise and resources. Services are provided in three phases.

(a) Phase One

Phase one shall consist of the review and augmentation of the existing Final Project Definition Documents, and coordinating the development of the program from which the Design Professional will design the project. The goal is to develop detailed design criteria for (1) quality, (2) serviceability (include as applicable, system performance requirements), (3) Building Commissioning methods, and (4) criteria into a complete and verified Design Professional's program. This will enable the Design Professional, on behalf of the Design Builder, to produce full and complete Construction Documents in accordance with the Design Professional's (the party that will actually manage and operate the finished project) program.

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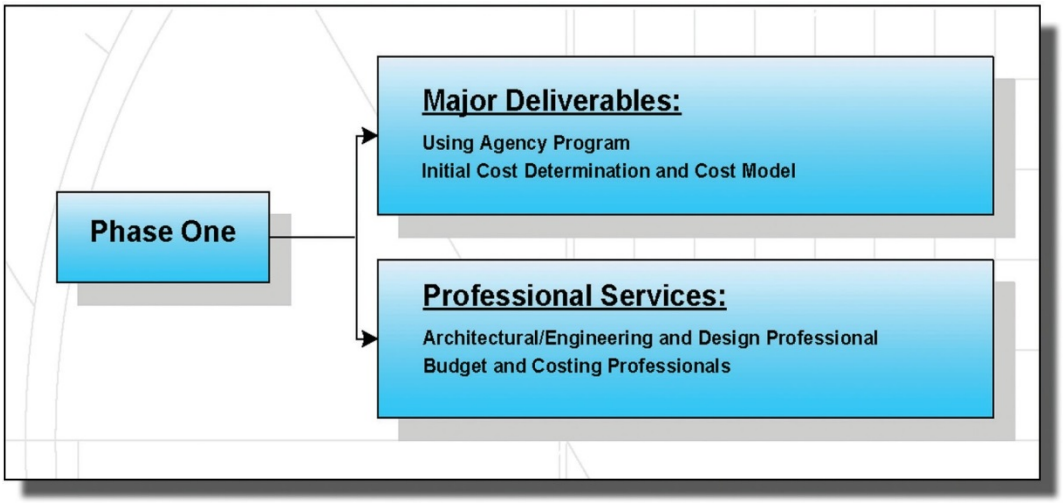


FIGURE 39: OR/EA PHASE ONE ACTIVITIES

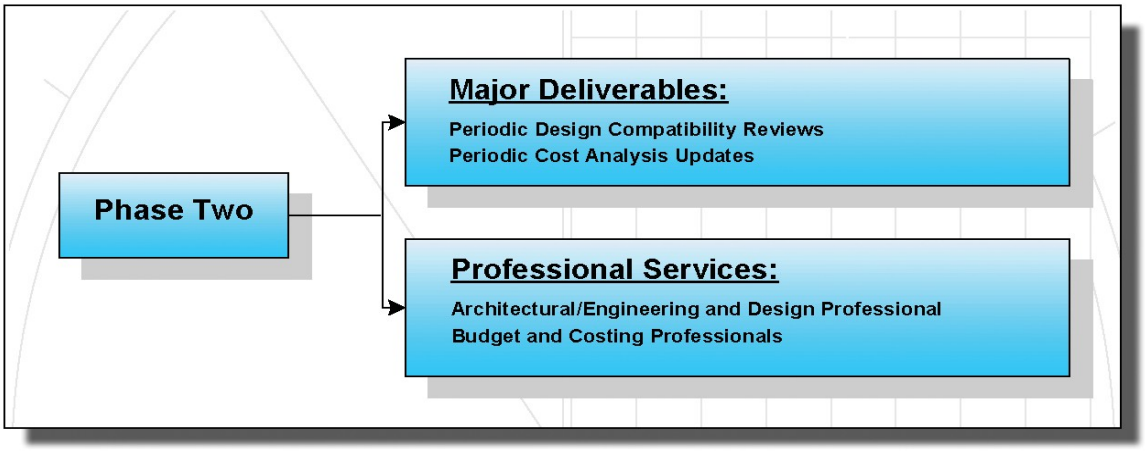


Figure 37: OR/PM Phase Two Activities

(b) Phase Two

Phase two shall consist of the periodic review of the documents prepared by the Design Professional on behalf of the Design Builder to make certain that the Construction Documents are proper and correct developments of the Design Professional's program.

(c) Phase Three

Phase three shall consist of monitoring the construction of the project to make certain that the work is installed in accordance with the requirements of the Construction Documents; in addition, make certain that a Guaranteed Maximum Price (GMP) is established and the costs are accurate, reasonable, and within the GMP. This phase includes review and process, as appropriate, of all change orders and applications for payment, and the implementation of the Building Commissioning program established in the Design Professional's program.

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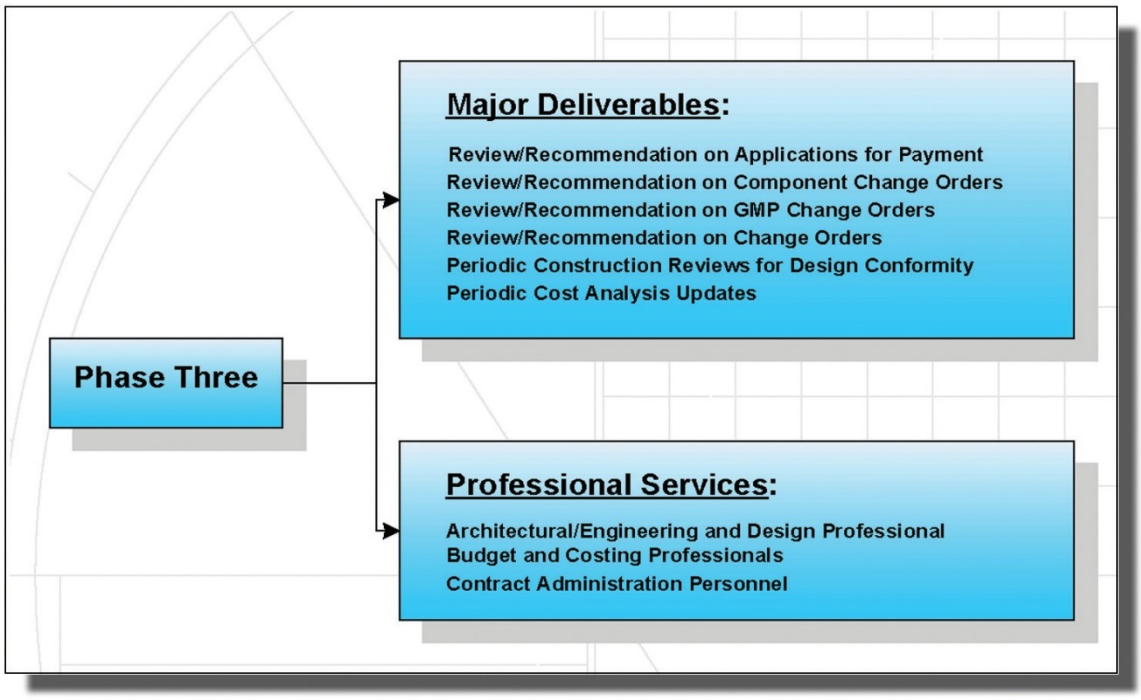


FIGURE 41: OR/EA PHASE THREE ACTIVITIES

The phases are not mutually exclusive, but will overlap as the project progresses.

The Executive Administrator shall manage the Total Project Budget, which includes the construction budget. During Phase One, the Executive Administrator shall, as a part of its budget and cost control services, review, coordinate, and process all proposed program changes for agency and Owner approval.

The Executive Administrator shall regularly submit progress reports, including cost information, to the Owner as the Design Professional's program is developed. During phases two and three, the Executive Administrator shall monitor the Design Builder's applications for payment according to the established contract amount and advise the Owner as to approval of payments.

As the Design Builder's design process progresses, the Executive Administrator shall regularly continue its cost and budget analysis and keep the Owner informed of the design progress, change re- quests, and the potential budgetary impact. The Executive Administrator will use its best efforts to deliver to the Owner all the information that the Owner needs to (1) make certain the Design Professional's program is accomplished with the established level of construction quality, (2) control the Total Project Budget, and (3) make certain that construction of the project is completed within the total budget.

An *Owner's Representative Executive Administrator Contract* with a detailed scope of services can be found at the BOR Web site.

C. GEOTECHNICAL ENGINEERING, LAND SURVEYING, AND TESTING SERVICES

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During the Final Project Definition activities, the Design Professional shall obtain a boundary line survey from the Owner that defines all easements, right of way covenants, and U.S. government contracts that relate to the land in the plat of the boundary line survey. The Design Professional shall obtain a complete and accurate survey of all site conditions from the land surveyor.

The survey must indicate: (1) the grades and lines of streets, pavements, adjoining properties, contours of the site; and (2) complete information as to sewer, water, gas, electricity service, telephone service, and any other utilities or services on the site. The survey may include existing vegetation at the option of the agency.

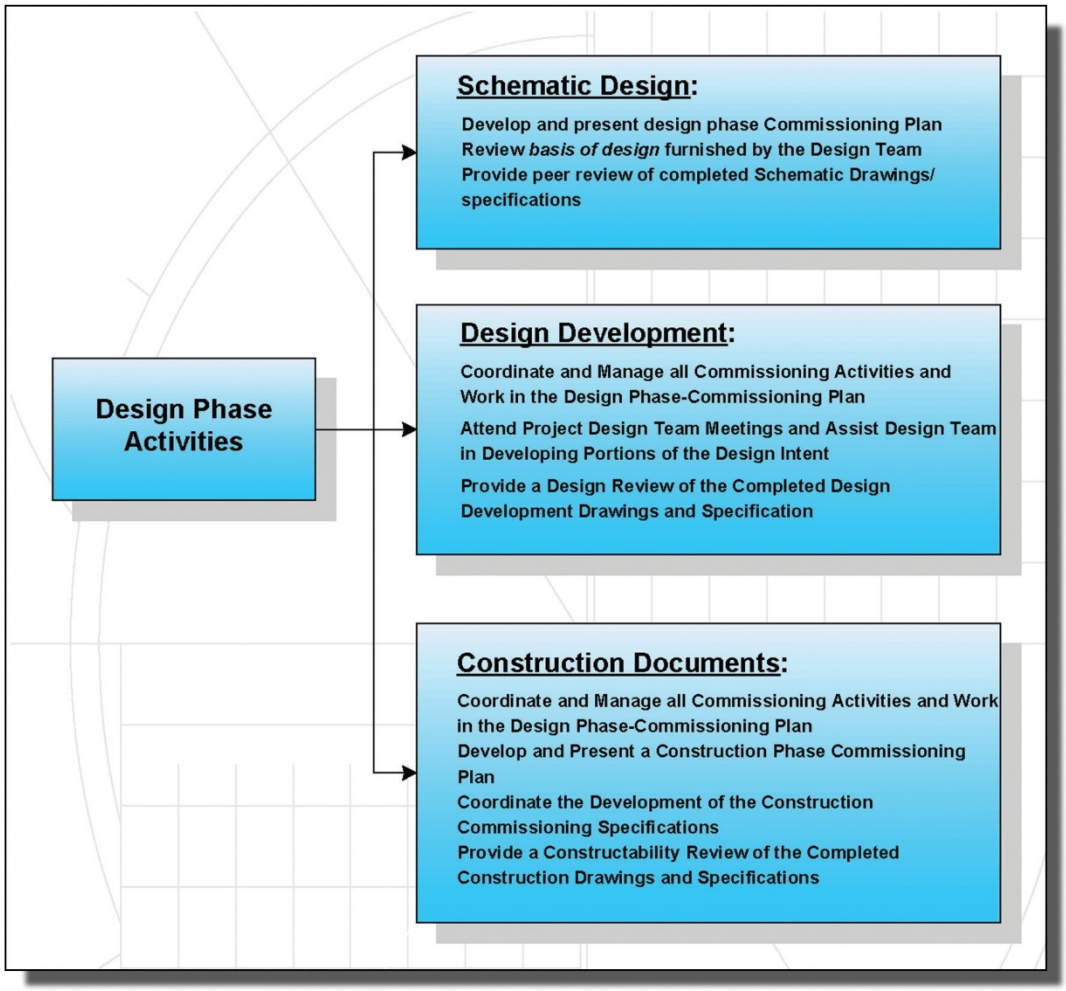
The plat of survey of the site conditions will bear the signature, seal, and registration number of the person who performed the survey and contain certification that the plat is a correct and true representation of the condition of the property and similar certifications. For complete language of the certification of the survey, see Exhibit G of the *Design Professional Contract.*

The Design Professional shall obtain a report from the geotechnical engineer on subsurface conditions that includes a test boring program, seismic exploration, laboratory testing program, and electrical resistance testing. The geotechnical engineer shall provide a Stage One Statement regarding the existing sub-surface conditions before design and a Stage Two Statement regarding the adequacy of the completed design relative to the subsurface conditions. For complete language of both the Stage One and Stage Two Statement of the geotechnical engineer, see Exhibit G of the Design Professional Contract.

D. BUILDING COMMISSIONING

The Building Commissioning consultant represents the Owner (GSFIC and/or agency) and is responsible for delivering, coordinating, and implementing the Design Phase and Construction Phase Commissioning Plan.

(a) Design Phase Activities



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FIGURE 42: BUILDING COMMISSIONING DESIGN PHASE ACTIVITIES

(b) Construction and Acceptance Phase Activities

1. Coordinate and direct the commissioning activities in a logical, sequential, and efficient manner using the following:
   - Consistent protocols and forms
   - Centralized documentation
   - Clear and regular communications and consultations with all necessary parties
   - Frequently updated timelines and schedules
   - Technical expertise

2. Coordinate the commissioning work with the Construction Professional and Owner's representative to make certain that commissioning activities are included in the master schedule.

3. Revise the Construction Phase Commissioning Plan as necessary.

4. Plan and conduct a commissioning scope meeting, which acquaints the Construction Professional with the process.

5. Request and review additional information required to perform commissioning tasks, including operations & maintenance (O&M) materials and Construction Professional start-up and checkout procedures.

6. Before start-up, gather and review the current control sequence and interlocks. Work with Construction Professional and Design Professional until sufficiently clear and detailed testing procedures have been created.

7. Review and approve normal Construction Professional submittals applicable to systems being commissioned for compliance with commissioning needs concurrent with the Design Professional reviews.

8. Write and distribute pre-functional tests and checklist.

9. Develop an enhanced start-up and initial systems checkout plan with the Construction Team (subcontractors).

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   - Attend selected planning and job site meetings to obtain information on construction progress.

   - Review the construction meeting minutes for revisions/substitutions relating to the commissioning process.

   - Assist in resolving any discrepancies.

10. Perform site visits, as necessary, to observe components and system installations, including:

   - Witness the HVAC piping test and flushing procedures to be confident that proper procedure was followed.

   - Ensure that this testing is documented and includes the documentation in O&M manuals.

11. Notify the Owner's representative of any deficiencies in results or procedures.

12. Witness all or part of any ductwork testing and cleaning procedures to be confident that proper procedures were followed. Ensure that this testing is documented and included the documentation in O&M manuals. Notify the Owner's representative of any deficiencies in results or procedures.

13. Approve prefunctional test and checklist completion through reviews of the pre-functional checklist reports, selected site observation, and spot-checking.

14. Approve system start-up through reviews, start-up reports, and selected site observation.

15. Review the test and balance (TAB) execution plan.

16. Oversee sufficient functional testing of the control system, and approve it to be used for TAB before TAB is executed.

17. Approve air and water systems balancing through spot-testing, reviews of completed reports, and selected sites observation.

18. Coordinate, witness, and approve manual functional performance tests performed by Construction Professionals.

19. Coordinate retesting as necessary until satisfactory performance is achieved.

20. Maintain a master deficiency and resolution log and a separate testing record. Ensure the Owner's representative is provided with written progress reports and test results for the recommended actions.

21. Witness performance testing of smoke controls and life safety systems by others as well as all other Owner-contracted tests or manufacturer personnel's tests over which the com- missioning consultant may not have direct control. Document these tests, and include this documentation in the commissioning records in the O&M manuals.

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22. Review equipment warranties to make certain that the Owner's responsibilities are clearly defined.

23. Oversee and approve the training of the Owner's operational personnel.

24. Compile and maintain a Commissioning Record and Building Systems book(s).

25. Review and approve the preparation of the O&M manual.

26. Provide the Final Commissioning Report.

(c) Warranty Period Activities

1. Coordinate and supervise required seasonal or deferred testing and deficiency corrections.
2. Return to the site ten months into the twelve-month warranty period and review the current building operations with the facility staff as well as the condition of outstanding issues related to the original and seasonal commissioning. At this time, do the following:
    - Interview the facility staff and identify problems or concerns they have operating the building as originally intended.
    - Make suggestions to the Owner for improvements and explain how to record these changes in the O&M manuals.

- Identify areas that may come under warranty or under the original construction contract.
- Assist facility staff in developing reports, documents, and request for services to remedy outstanding problems.

3. Assist the facility staff in implementing the preventative maintenance plan, detailed operating plan, energy and resource management plan, and/or as-built documentation.

E. SPECIALTY CONSULTANTS

Consultant assistance for specialty consultants will be based upon the scope of work and schedule of services that are required to successfully meet the needs of the project.

For additional information regarding the benefits of specialty consultants and for guidance in determining the scope of services for *best practice*, see the following:

(a) Sustainable and Energy Conservation Design

Leadership in Energy and Environmental Design (LEED) Standards: *www.usgbc.org*.

(b) Value Engineering, Values Analysis and Value Management

SAVE International: Training and Procedures: *www.value-eng.org*.

(c) Cost Estimating

The Association for Advancement of Cost Engineering: Recommended Practices: *www.aacei.org*.

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American Society of Testing Materials: *Standard Practice for Performing and Reporting Cost Analysis during the Design Phase of a Projec*t; ASTM E 1804-07: *www.astm.com*

(d) Scheduling

Project Management Institute: College of Scheduling: *www.pmi.org*.

(e) Partnering

U.S. Army Materiel Command:*https://www.amc.army.mil/*.

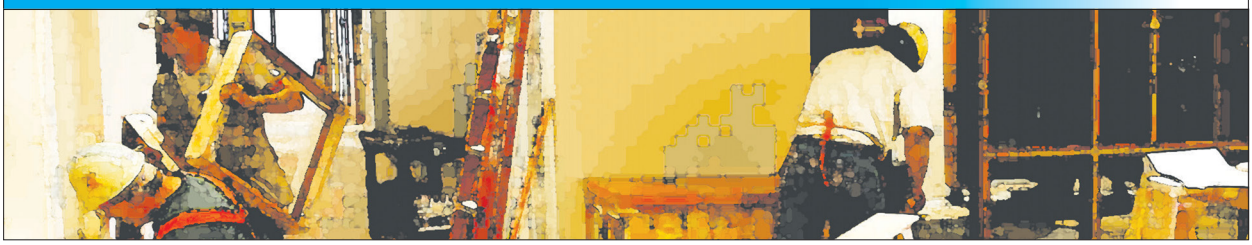
American Arbitration Association: *http://www.adr.org*.

F. COMMISSIONING RESOURCES

1. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE): *www.ashrae.org*
2. ASHRAE Guideline 0 2005: The Commissioning Process, American Society of Heating, Refrigerating and Air Conditioning Engineers, 2005
3. ASHRAE Guideline 1 1996: The HVAC Commissioning Process, American Society of Heating, Refrigerating and Air Conditioning Engineers, 1996
4. ASHRAE Guideline 4 1993: Preparation of Operations & Maintenance Documentation for Building Systems, American Society of Heating, Refrigerating and Air Conditioning Engineers, 1993
5. Building Commissioning Association (BCxA): *www.bcxa.org*
6. Building Commissioning Guide, Office of Energy Efficiency and Renewable Energy Federal Energy Management Program, U.S. Department of Energy: *www.eere.energy.gov*
7. The Building Commissioning Handbook, Second Edition by John A. Heinz & Rick Casault, The Building Commissioning Association, 2004: *www.bcxa.org*

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Chapter 3.5: Design-Bid-Build



A. FORWARD

Design-Bid-Build (DBB) is historically the most common project delivery option used by the State. The majority of the procedures, forms, certifications, and other contract documentation have been developed under the DBB procurement system. For guidance in determining the most appropriate project delivery option for a project, see *Project Delivery Options in SCM Chapter 3.1: Introduction*.

The DBB process is a linear sequencing of five major tasks:

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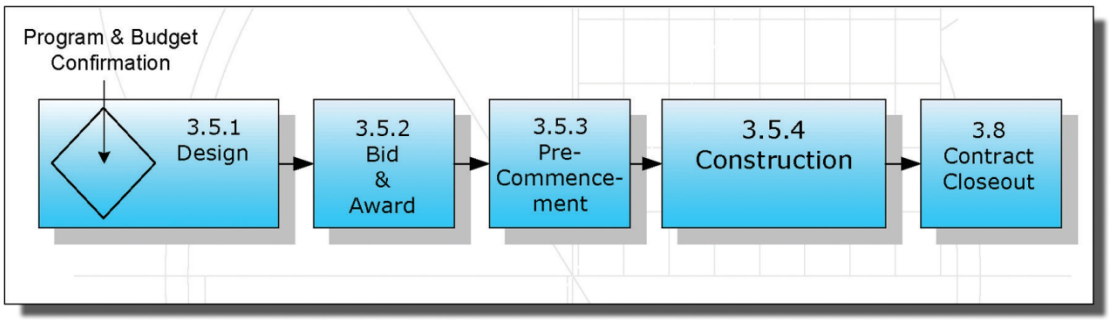


Figure 43: The Design-Bid-Build Process

The first four tasks are described in this section. Contract closeout is described in *SCM Chapter 3.8: Contract Closeout*.

SECTION THREE: PROJECT IMPLEMENTATION

CHAPTER 3.5: DESIGN-BID-BUILD

SUBCHAPTER 3.5.1: DESIGN PHASE



Prior to beginning the design, the agency will enter into a contract with a Design Professional selected in accordance with the team selection procedures and requirements described in *SCM Chapter 3.2: Team Selection*. The Design Professional Contract will include the legal terms and conditions that identify the Design Professional's scope of work, role, and responsibilities.

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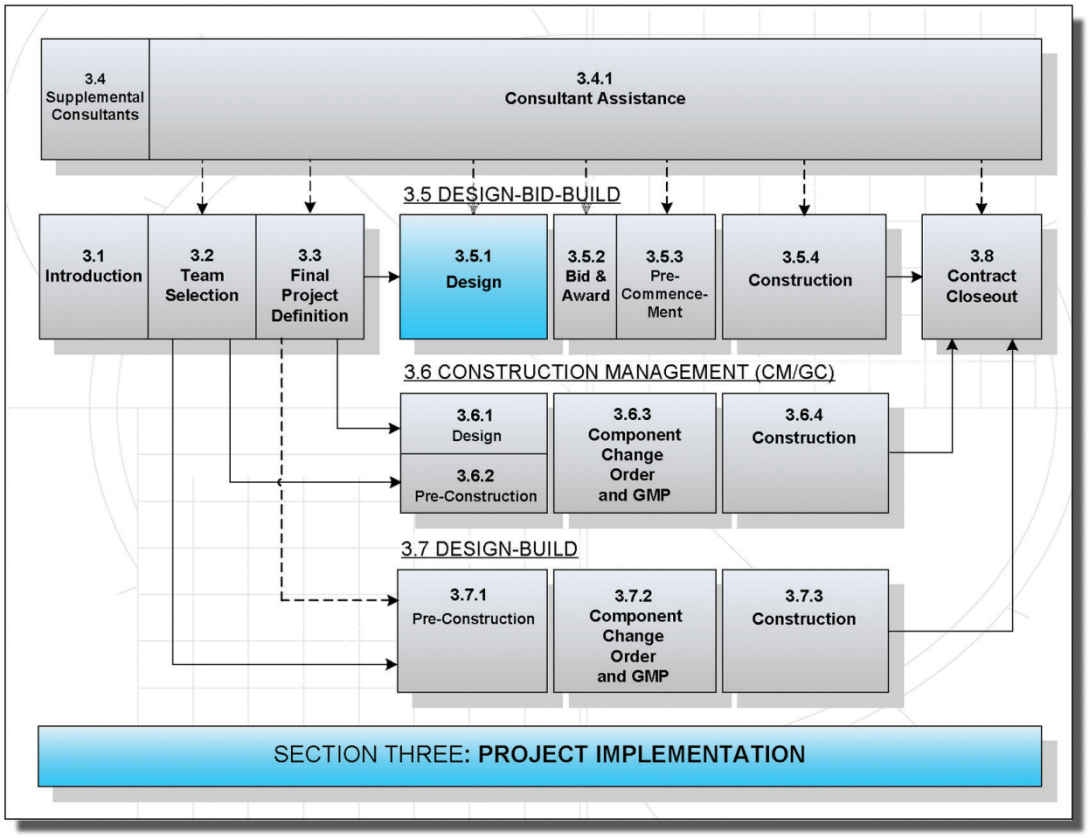


Figure 44: Project Implementation Flow Chart

A copy of the Design Professional Contract for the Design-Bid-Build project delivery method can be found at the GSFIC website.

The Design Professional shall not proceed with the performance of professional services until the Design Professional receives a copy of the Final Project Definition Documents or program of requirements from the Owner/Agency.

A. THE DESIGN-BID-BUILD TEAM

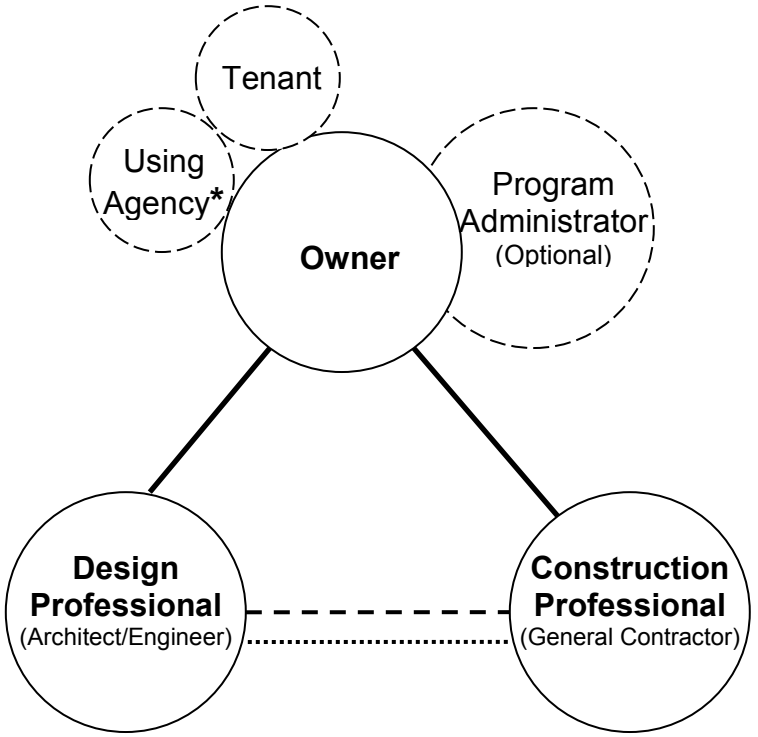
Design-Bid-Build: RELATION OF KEY STAKEHOLDERS

There are three prime stakeholders:

- The Owner
- The Design Professional
- The Construction Professional

There are two primary contracts:

- Owner/Design Professional
- Owner/Construction Professional



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Figure 25: Design-Bid-Build: Relation of Key Players

Under the Design-Bid-Build project delivery process, the agency executes two separate independent contracts: Owner/Design Professional and Owner/Construction Professional (See Figure 25). The Design Professional is responsible for providing and executing the contracts of the Design Team (basic engineering sub-consultants). The Design Professional may also be required to include specialty consultants as an additional service. The agency may elect to hire a Program Manager to act as the Owner's representative and may hire other specialty consultants. See *SCM Chapter 3.4: Supplemental Consultants* and *SCM Subchapter 3.4.1: Consultant Assistance* for contracting requirements and scope of work for the Program Manager and other specialty consultants. The Construction Professional would execute the contracts of the Construction Team (trade contractors and material suppliers).

The Design Professional is under contract prior to the Construction Professional's selection and is responsible for the timely production of Contract Documents of a design that meets the Owner/Agency's scope of work and program of requirements at or below the Stated Cost Limitations. The Design Professional is required to list up to five deductive alternatives to ensure a successful bid and contract award (See *SCM Subchapter 3.5.1 [K]: Cost Containment*).

B. OWNER'S RESPONSIBILITIES

The agency may furnish if available the following project information to the Design Professional:

- Final Project Definition (predesign study) Documents, including a cost estimate and milestone schedule. *SCM Chapter 3.3: Final Project Definition*
- Project topographical survey
- Written legal description of the project site
- Land/utility survey of the project site
- Preliminary geotechnical reports on the project site
- Phase I Environmental Site Assessment (ESA) GEPA Site Evaluation

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If the Owner/Agency doesn't furnish the above information, or if the information is inadequate, the additional information shall be provided in a timely manner by the Owner/ agency or provided by the Design Professional as an *additional service* described in Section Three of the Design Professional Contract.

C. DESIGN PHASE SERVICES

The Design Professional's Design Phase basic service usually includes all normal and customary professional services of the Design Professional and its Design Team (architectural, civil, structural, mechanical, electrical, plumbing, and fire protection consultants) required in connection with the schematic design, design development, Construction Documents, and bid and award services.

The successful design of the project relies heavily on the data developed during the SCM *Section Two: Project Development* and then finalized in the *SCM Chapter 3.3: Final Project Definition*.

Prior to beginning design, the Design Professional should review and validate the Final Project Definition documents, confirming that the project scope of work and program of requirements is compatible with the Stated Cost Limitations (SCL) and the Preliminary Design and Construction Schedule. If parts of the project's scope of work or program of requirements are not compatible with the SCL/budget, the Design Professional shall reconcile those differences prior to the initiation of the design, and follow up with written approval of the reconciliation. It is *best practice* to proceed with design only after the project scope of work and program of requirements are reconciled.

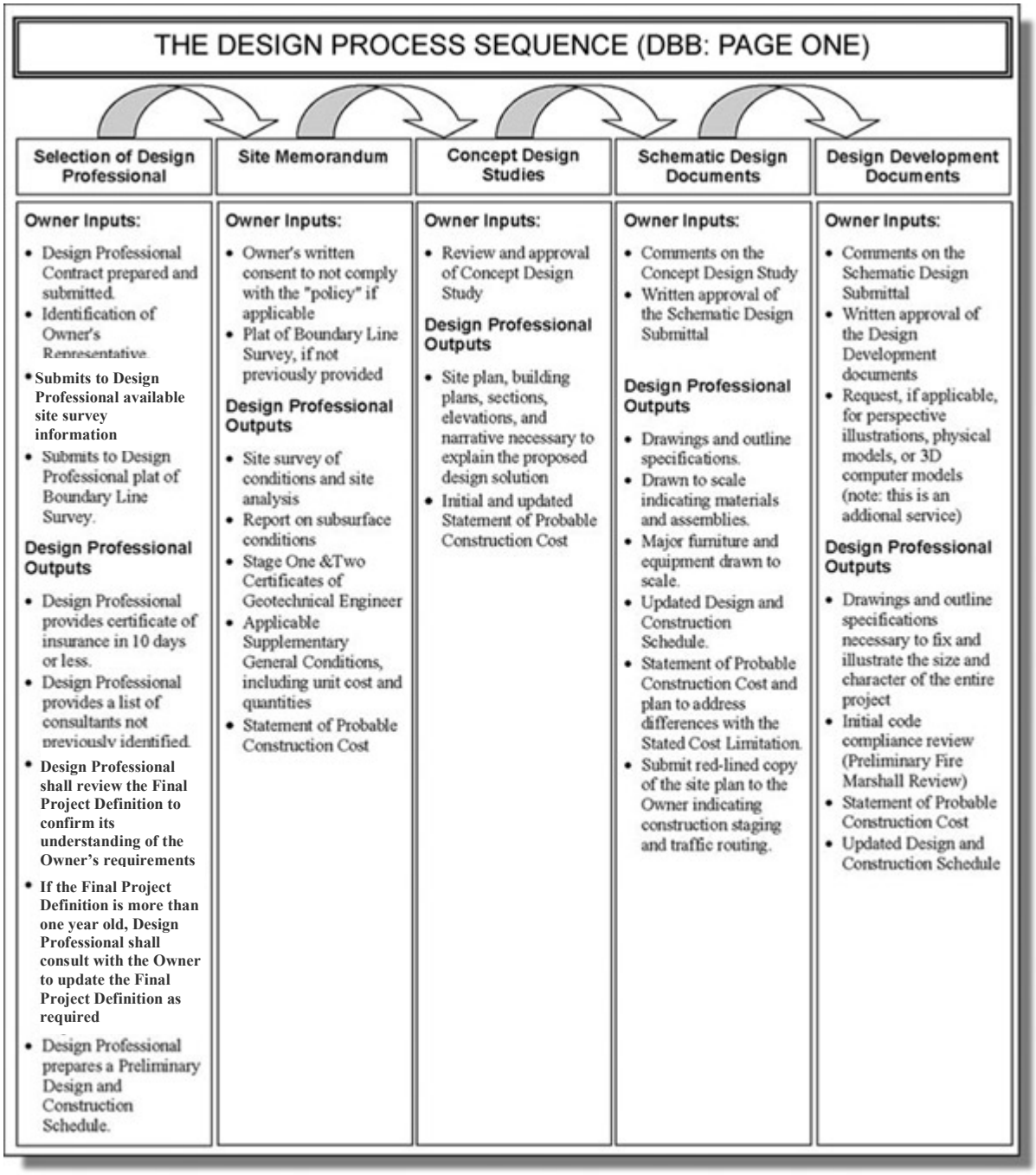
Examples of possible problems that may arise due to change in the project scope of work and program of requirements include the following:

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- Delay of project funding
- Changes in scope due to changes in the function of the facility
- Changes in the required project delivery schedule or project delivery method
- Discovery of unforeseen and unfounded elements for successful operations of the facility, such as utility extensions
- Changes in code requirements and regulations such as high impact glazing and seismic conditions
- Changes in external economic conditions such as cost escalation and material availability due to natural weather disasters, terrorist threats, and other worldwide economic influences
- Discovery that the agency Stated Cost Limitations (SCL) is not compatible with the project scope of work and program of requirements
- The need for additional quality assurance services, such as Building Commissioning and Value Engineering services

The table below summarizes the Design Process Sequence for a typical project.

Table 2: The Design Process Sequence



THE DESIGN PROCESS SEQUENCE (DBB: PAGE ONE)

Selection of Design Professional	Site Memorandum	Concept Design Studies	Schematic Design Documents	Design Development Documents
Owner Inputs: • Design Professional Contract prepared and submitted. • Identification of Owner's Representative. • **Submits to Design Professional available site survey information** • Submits to Design Professional plat of Boundary Line Survey. **Design Professional Outputs** • Design Professional provides certificate of insurance in 10 days or less. • Design Professional provides a list of consultants not previously identified. • **Design Professional shall review the Final Project Definition to confirm its understanding of the Owner's requirements** • **If the Final Project Definition is more than one year old, Design Professional shall consult with the Owner to update the Final Project Definition as required** • Design Professional prepares a Preliminary Design and Construction Schedule.	**Owner Inputs:** • Owner's written consent to not comply with the "policy" if applicable • Plat of Boundary Line Survey, if not previously provided **Design Professional Outputs** • Site survey of conditions and site analysis • Report on subsurface conditions • Stage One &Two Certificates of Geotechnical Engineer • Applicable Supplementary General Conditions, including unit cost and quantities • Statement of Probable Construction Cost	**Owner Inputs:** • Review and approval of Concept Design Study **Design Professional Outputs** • Site plan, building plans, sections, elevations, and narrative necessary to explain the proposed design solution • Initial and updated Statement of Probable Construction Cost	**Owner Inputs:** • Comments on the Concept Design Study • Written approval of the Schematic Design Submittal **Design Professional Outputs** • Drawings and outline specifications. • Drawn to scale indicating materials and assemblies. • Major furniture and equipment drawn to scale. • Updated Design and Construction Schedule. • Statement of Probable Construction Cost and plan to address differences with the Stated Cost Limitation. • Submit red-lined copy of the site plan to the Owner indicating construction staging and traffic routing.	**Owner Inputs:** • Comments on the Schematic Design Submittal • Written approval of the Design Development documents • Request, if applicable, for perspective illustrations, physical models, or 3D computer models (note: this is an addional service) **Design Professional Outputs** • Drawings and outline specifications necessary to fix and illustrate the size and character of the entire project • Initial code compliance review (Preliminary Fire Marshall Review) • Statement of Probable Construction Cost • Updated Design and Construction Schedule

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D. PROJECT START-UP

To begin the design process, the Design Professional schedules a project kickoff meeting with the Owner/Agency. At this meeting, the project team participants are introduced and the general project parameters are reviewed. The Design Professional should prepare the meeting agenda, produce and distribute minutes of the meeting.

One of the Design Professional's primary responsibilities is code compliance. Unique to State projects, there is no State building official other than the State Fire Marshall who is responsible for *Life Safety*, *Elevator*, *Building Accessibility*, and *Fire Safety Rules Regulations and Codes*. The Design Professional is responsible for meeting all applicable code requirements.

The following items also provide additional code-related information:

- A recent additional code requirement is the Special Inspections per the International Building Code (IBC). GSFIC has provided guidance and forms for compliance with these requirements.
- Building Codes
- Georgia State Amendments to the State Minimum Standards Codes
- State Fire Marshal's Office
- Life Safety Code
- State Accessibility Code
- Department of Community Affairs
- Department of Labor (escalators, elevators & boilers)

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E. INSTRUMENTS OF SERVICE

Unlike many private sector projects, the *instruments of service* described in the contract are *works for hire* and belong to the Owner. There are rights of use specific to both the Design Professional and the Construction Professional. Instruments of service are the drawings, specifications and other deliverables, including those in electronic form, prepared specifically for a Project by the Design Professional and its consultants. On many private sector projects, the instruments of service are treated as intellectual property belonging to the Design Professional that created it. On state-funded projects, the Design Professional's instruments of service are treated as works for hire and all rights are transferred to the Owner.

Copies of construction documents are to be made available to the Construction Professional for the execution of the work, in the format specified in the contract. These include paper, reproducible and electronic backgrounds, and read-only documents. A list of project deliverables is included in Exhibit H of the Design Professional Contract. All of these deliverables are instruments of service.

F. SITE EVALUATION AND PLANNING SERVICES

Review of the project site and Owner-furnished information is done concurrently with schematic design services. Site data include the following (Refer to exhibits in the Design Professional Contract):

- The Site Memorandum
- Geotechnical Report
- Seismic Analysis (if applicable)
- Environmental Site Assessment (ESA) (See SCM Chapter 2.4 [C6])
- Utilities Checklist
- Boundary, topographic, and tree survey
- Special or site/project-specific data such as demolition, historic preservation, wetlands permitting, and similar data

In addition to a review of site data, the Site Evaluation and Planning Services include the Design Professional's foundation design; the Stage One and Two Statement and requires investigation by the geotechnical engineer; the plot plan; erosion, sedimentation, and pollution control best management practices (BMPs); and the procurement of testing services.

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G. SCHEMATIC DESIGN SERVICES

The Building Design Process begins with the development of Concept Design Studies, Site Analysis, Schematic Design Documents, and a comparison of each proposed solution/concept that the Design Professional has validated is within the SCL. Schematic Design Documents should be based on the approved concept design.

G1. Concept Design Studies

Concept Design Studies consist of:

- Site Plan
- Building Plan
- Sections
- Elevations
- Other graphic and narrative information as required

The Board of Regents has a specific checklist of Concept Submittal Requirements that can be used as a guide by other agencies to complete a Concept Design Submittal Checklist.

G2. Site Analysis

Site Analysis considers and defines the implications on the design of the following factors:

- Physical environment and characteristics of the site
- Climate
- Topography
- Soils and conditions
- Ecology
- Utilities
- Circulation
- Views
- Noise
- Existing structure
- Traffic
- LEED and GA Peach impact

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G3. Schematic Design Documents

Schematic Design Documents are a further development of the approved concept design. Schematic Submittal Requirements are indicated in the Design Professional Contract.

The major building systems should be described and shown to scale. Additional drawing requirements are listed in the ASTM E 1804-07 Standard Practice for Performing and Reporting Cost Analysis during the Design Phase of a Project.

Summarized from ASTM E 1804-07, the following should be included in the schematic submittal:

- Preliminary specification outlines
- General finish schedule information
- Structural, mechanical, and electrical (MEP) information
- Site plan
- Floor plans
- Wall sections

- Roof system
- Any specialty construction

The project schedule should be updated to reflect progress to date and anticipated construction duration as described in the section titled *SCM Subchapter 3.5.1 (M): Schedule Management*.

An initial Statement of Probable Construction Cost (SPCC) should be created as described in the section titled *SCM Subchapter 3.5.2 (A1): Cost Containment*.

Approval of schematic design by the Owner/Agency is required before proceeding to the Design Development Phase.

The Board of Regents has developed a specific checklist of Schematic Submittal Requirements that can be used as a guide by other agencies for the development of their own Schematic Design Submittal Checklist.

H. DESIGN DEVELOPMENT SERVICES

Based on the approved schematic submittal, the Design Professional will enhance and refine the project design. The major elements of the Design Development Documents are the drawings, outline specifications and possible illustrations, models, or renderings. The Design Professional updates the schematic design including furniture placement, construction schedule, and the SPCC at this point. The Design Development Documents are also required to be submitted for Initial Code Compliance Review to the State Fire Marshal's Office.

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Discussion of any alternatives requested by the Owner or needed to meet the budget mandate should be decided at this phase. Owner approval is required for alternatives included in the Bidding Documents.

Because of the coordination effort needed to accurately describe them, the alternatives should be defined as early as possible.

H1. Design Development Drawings

Design Development Drawings include the following:

- Site plans with utility locations, grade elevations, roads, sidewalks, and parking areas
- Demolition plans
- Building structural and foundation design and typical structural framing
- Current floor plans
- Exterior wall sections
- Building Elevations and Sections
- Typical construction details including wall types
- Furniture layouts

- Equipment layouts
- Preliminary finish schedule with material selections
- HVAC, plumbing, fire protection and electrical one-line diagrams reflecting the intended design
- Other drawings needed to describe the project

H2. Outline Specifications

Outline Specifications together with the drawings should describe the size, character, and quality of the project including:

- Kinds of materials
- Criteria and sizing of major components
- Equipment sizes and capacities
- Approximate layouts and clearances
- Structure types
- Grade elevations
- Sidewalks
- Utilities

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- Roads
- Parking areas
- Mechanical and electrical systems

Perspective illustrations, physical or 3-D computer models may be requested by the Owner. An updated Statement of Probable Construction Cost (SPCC) is to be provided as described in section titled *SCM Subchapter 3.5.2 (A1): Cost Containment*. The project schedule shall be updated to reflect progress to date and anticipate construction durations as described in the section titled *SCM Subchapter 3.5.1 (M) Schedule Management*. The initial Code Compliance Review is accomplished by sending the Design Development Documents to the State Fire Marshal (SFM) for review. The SFM may delegate review of some state projects to GSFIC's Design Review Group. Accompanying the drawing must be a Plans Transmittal Letter.

> ***Note:*** *Approval of Design Development by the Owner/Agency is required before proceeding to Construction Documents. Note that significant changes after approval will usually impact design fees and schedule.*

The Board of Regents has developed a specific checklist of Design Development Submittal Requirements that can be used as a guide for Design Development submittal.

I. CONSTRUCTION DOCUMENTS

Progressing the project documentation from earlier phases into Construction Documents reflects a fundamental shift from communicating the Owner/Agency's design intent to the Design Professional to communicating bidding and construction requirements to the Construction Professional. The components of the Construction Documents together with the Bidding Documents are shown in the following drawing.

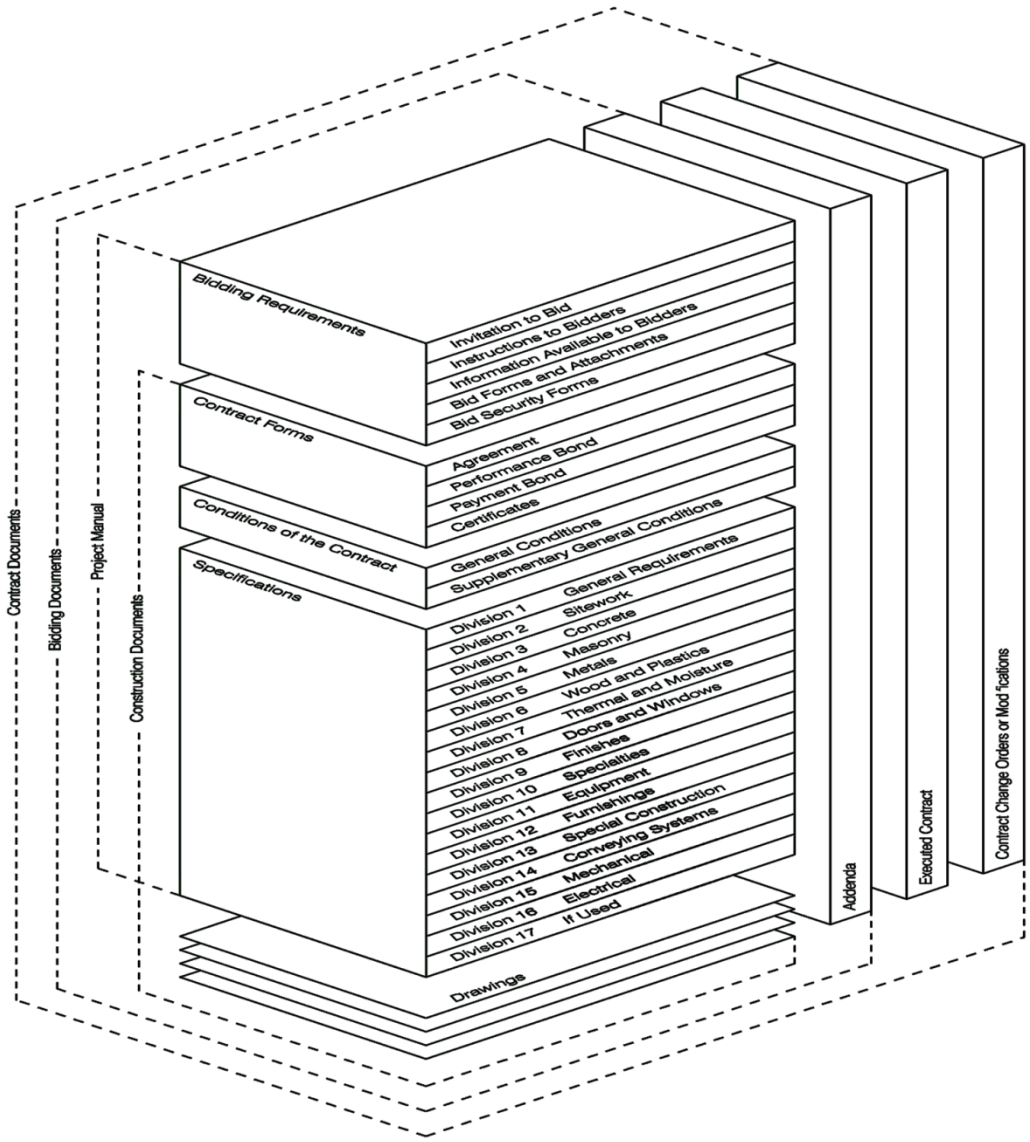


Figure 46: Organization and Classification of Contract Documents

The primary components of the Construction Documents are the contract forms, conditions of the contract, Bidding Documents, specifications, and drawings, and are shown in Figure 46. Contract forms and the general conditions are typically included without modification.

I1. Supplementary General Requirements

Supplementary General Requirements include project-specific requirements that vary with the project conditions, location, and Design Professional. Examples of Supplementary General Requirements topics that should be addressed are listed below:

- Construction professional qualifications
- Hazardous materials
- Inspection of existing facilities
- Site Access
- Weather days
- Work hours
- Traffic control
- Unit prices - sediment barrier, silt fence
- Unsuitable fill
- Rock

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I2. Specifications

Specifications must follow the Construction Specifications Institute (CSI) format. The GSFIC maintains a checklist of common problems with specifications that is helpful to review prior to submission of Construction Documents.

I3. Working Drawings

Working drawings shall consist of those drawings necessary to describe the size and character of the project, including the design, construction, materials, finishes, and fixtures. Accompanying the drawings is a Plans Transmittal Letter. Working drawings describe structural, mechanical, and electrical (MEP) systems and their related work and include, as a minimum, the requirements as described in Section Two, Part Two of the Design Professional Contract. Final approval of the State Fire Marshal along with building permits and other required construction permits such as erosion control, development, and EPA-approved sewer permits are required at this time.

I4. Construction Professional's Responsibilities

The Construction Professional's responsibilities for providing proprietary design services such as steel detailing and shop drawings for construction means and methods must be approved by the Owner and clearly described in the Construction Documents. The performance criteria to be met by the Construction Professional's specialty consultant must be clearly indicated. For example, the Construction Team may have options regarding which specified proprietary roofing system may be provided.

The manufacturer would be required to meet the specific wind uplift criteria specified and demonstrate the criteria had been met by calculations and shop drawings sealed by a Georgia-licensed engineer. Such delegated design is consistent with normal industry practice. However, caution should be used to avoid transferring the Design Professional's obligation under applicable law to a third party.

I5. The Project Schedule

The Project Schedule should be updated to reflect progress to date and anticipated construction durations as described in the section titled *Subchapter 3.5.1(M): Schedule Management*. The GSFIC has developed a specific checklist of Construction Documents Completion Checklist that can be used as a guide.

J. BIDDING DOCUMENTS

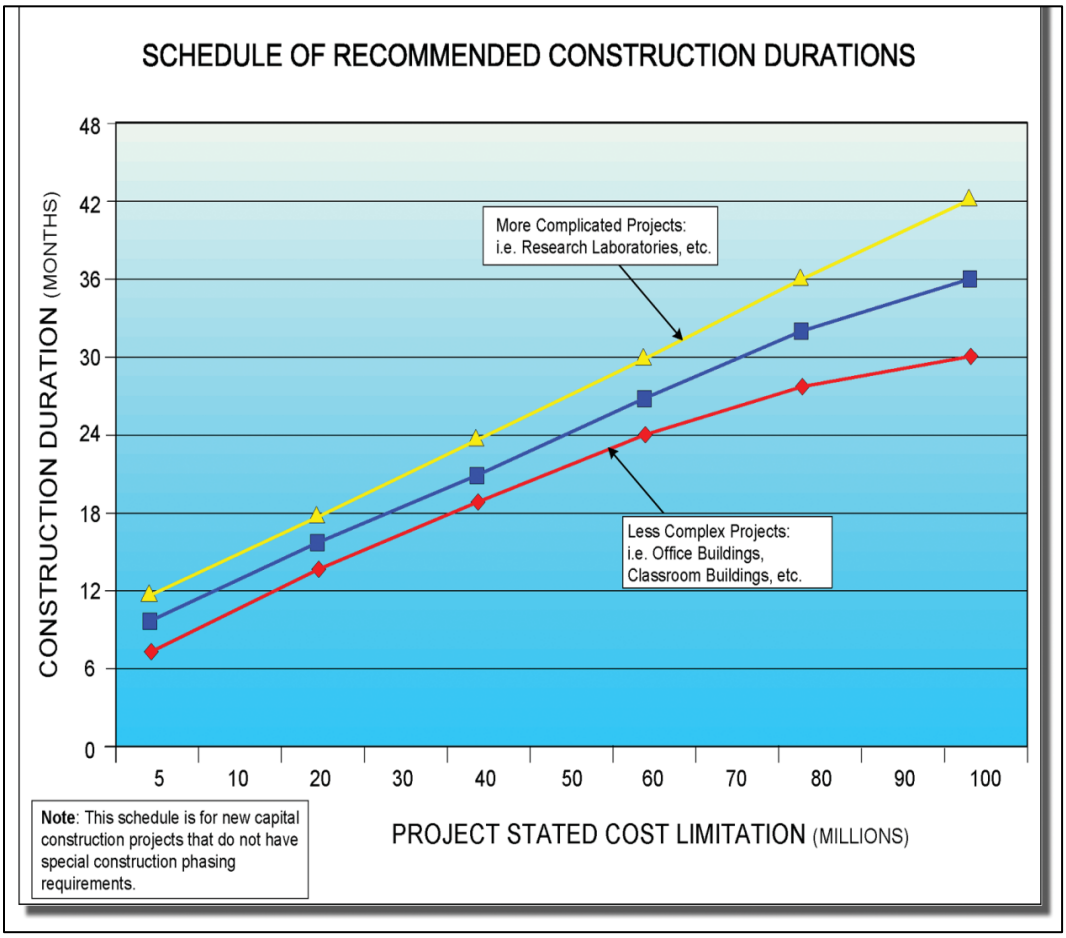
Bidding Documents are in addition to the Construction Documents and are used to describe the rules and procedures to be followed by prospective bidders. Bidding Documents include:

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- Invitation to bid
- Instructions to bidders
- Information available to bidders
- Bid forms and attachments
- Bid security form

Bidding documents are shown in *Figure 46: Organization and Classification of Contract Documents*. If the Owner/Agency's intent is to prequalify Construction Professionals prior to submission of bids, the pre-qualifications requirements should be placed in the Bidding Documents section of the Contract Documents.

Figure 47 is a Chart of Recommended Construction Durations based on project type, size, and complexity. These should be adjusted based on each individual project's individual circumstances. More information on the bidding process can be referenced in *SCM Subchapter 3.5.2: Bid & Award*.



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Figure 47: Construction Durations

Managing the list of prospective bidders, listing of the plan holders of record, and recording the attendance roster of the pre-bid conference and addenda are part of the Design Professional's basic services. If the Owner/Agency elects to use a prequalification process to set and evaluate the qualifications of prospective bidders, the Design Professional may be asked to assist in this effort.

There are a number of useful documents during the construction procurement process such as the following:

- Documents Distribution Log
- Chart of Recommended Construction Durations
- Pre-bid Conference Attendance Roster

K. COST CONTAINMENT

The Design Professional's responsibility is to design the project so that the lowest responsive and responsible bid will not exceed the project Stated Cost Limitation (SCL). If at any time the Design Professional finds that the bid will potentially exceed the SCL, the Design Professional shall immediately stop work and give written notice to the Owner. The Owner will then either revise the budget to increase the SCL or direct the Design Professional to, at no expense to the Owner, reduce the scope of the project. This reduction in scope serves to bring the Design Professional's Statement of Probable Construction Cost (SPCC) within the SCL and maintain the Preliminary Design and Construction Schedule.

The Design Professional is responsible for the preparation of a SPCC at the following milestones during the Design Phase:

- Initial SPCC with Schematic Design
- Updated SPCC with Design Development
- Final SPCC with Construction Documents

Also, as previously described in the Schematic Design Phase, the Design Professional shall provide a cost comparison analysis of each of the proposed concepts during Schematic Design.

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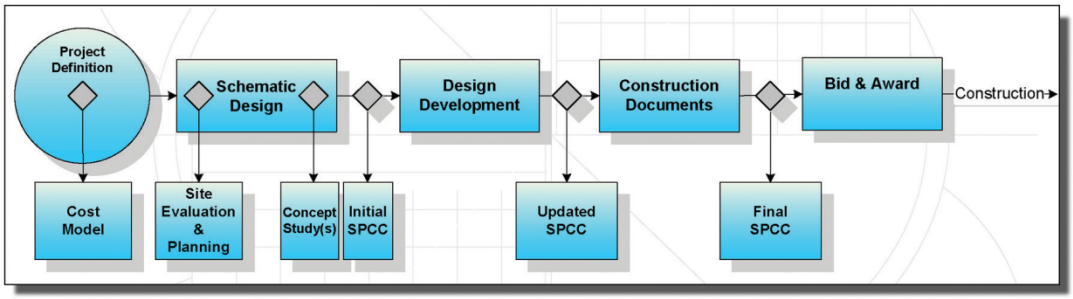


Figure 48: Statement of Probable Construction Cost Sequence

If the SCL is exceeded by the lowest responsive and responsible bid, the Owner may elect to do the following:

- Approve an increase in the SCL and accept the low bid
- Require the Design Professional, without additional compensation, to revise the Construction Documents to reduce the cost of the work to the SCL

The estimate supporting the SPCC shall be provided using the system/assemblies clarification of the Construction Specification Institute (CSI) Uniformat™ Cost Classification at the level of detail indicated in Exhibit F of the Design Professional Contract. Reference the Statement of Probable Construction Cost in the Appendix.

Upon written authorization of the Owner, the Design Professional may use a different but similar estimating format that provides a comparable level of detail and accuracy. For comparison and reconciliation, the Design Professional's Cost Estimate and Construction Professional's pricing, in CSI MasterFormat™, which is arranged according to building products and equipment, may be more appropriate.

The Cost Estimate shall be presented in a summary format indicating the estimated cost for each element or system and the estimated cost for the Construction Professional's general requirements. SPCC's shall not have a construction contingency but shall have a design contingency. This allowable contingency amount would be based on the following sliding scale and would be dependent on the phase of the project, the completion of the documents, the complexity of the building type, and if the project is new construction or a renovation.

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COST CONTINGENCY SLIDING SCALE		
Phase	New Construction	Renovation
Programming/Planning	10 to 15 percent	15 to 20 percent
Concepts	10 to 15 percent	15 to 20 percent
Schematic	8 to 12 percent	10 to 15 percent
Design Development	5 to 7 percent	5 to 10 percent
Contract Documents	0 to 3 percent	3 to 5 percent

Figure 49: Design Cost Contingency Sliding Scale

This contingency amount should be contained, but clearly stated, within the SCL and is to be used by the Design Professional to meet the project scope of work and program of requirements. The Owner/Agency maintains the project contingency, which is not part of the SCL but is included on the Total Project Budget Worksheet (See Figure 22).

Upon receipt of the Statement of Probable Construction Cost at the completion of each of the design phases, the Owner/Agency project manager shall modify the Total Project Budget Worksheet to include the updated SCL and any other budget adjustments in order to validate and confirm that the project's total cost does not exceed the approved project funding.

L. DEDUCTIVE ALTERNATES

With the Owner/Agency's approval, deductive alternatives in the Contract Documents, in lieu of project redesign, may be used to adjust the bid prior to award. Any alternatives must be deductive, numbered, and listed in descending order of acceptance.

M. SCHEDULE MANAGEMENT

The Design Professional is responsible for timely completion of all activities, responsibilities, and obligations under the Design Professional Contract in accordance with the Owner's approved Preliminary Design and Construction Schedule. The Design Professional is responsible for, at its own expense if needed to accelerate the work, the replacement of delinquent consultants. The Design Professional shall retain such additional resources as necessary to return the project to the approved Preliminary Design and Construction Schedule.

The project schedule milestone dates are included in *SCM Chapter 2.3: Initial Planning*. From these milestones dates, the Design Professional, in concert with the Owner/Agency, develops a mutually agreeable Preliminary Design and Construction Schedule that is included in the Design Professional Contract. These milestone dates are contractual requirements and can only be changed with the consent of both parties. The Preliminary Design and Construction Schedule shall be updated to reflect progress to date and expected construction durations at the completion of each submission milestone.

There is no mandatory form for the preparation of the Design and Construction Schedule. A schedule template in Microsoft Project is available in the online version of the SCM to serve as a guide and a beginning schedule for developing the Preliminary Design and Construction Schedule. The schedule template includes the following Design Phase activities that should be shown in the Preliminary Design and Construction Schedule.

M1. Design Phase Activities

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(a) Schematic Design

1. Confirm funds available for schematic design.
2. Schedule kickoff meeting.
3. Schematic Design kickoff meeting.
4. Verify site evaluation and planning services.
5. Provide approved program, Site Memorandum, schedule, ESA report, and cost model to Design Professional.
6. Verify program for budget, schedule, and scope.
7. Prepare conceptual design options in accordance with the program and submit draft.
8. Design professional schedules conceptual design presentation meeting.
9. Conduct Conceptual Design presentation meeting (select schematic design).
10. Prepare Final Schematic Design and Statement of Probable Construction Cost.
11. Conduct Final Schematic Design presentation.
12. Start to develop a list of deductive alternates in conjunction with Owner.
13. Incorporate changes (if required) and resubmit.
14. Owner gives written approval of Schematic Design.
15. LEED
16. GA Peach

(b) Design Development

1. Confirm funds available for Design Development.
2. Prepare plat of boundary line survey.
3. Submit data to Owner (highlight any irregularities).
4. Prepare Design Development Documents, code analysis, life safety plan, furniture layout, and Statement of Probable Construction Cost.
5. Submit Design Development Documents to the GSFIC and other agencies for property plan review.
6. Review and comment on Design Development Documents.
7. Respond and incorporate Owner/Agency comments and update Statement of Probable Construction Cost.
8. Using agency approves Design Development Documents.
9. Review Design Development Documents submittal package.
10. Coordinate with Design professional to schedule Design Development Documents presentation meeting.
11. Conduct Design Development review meeting.
12. Incorporate comments and update Statement of Probable Construction Cost and resubmit to Owner for approval (if required).
13. Approve Design Development Documents.
14. Proceed with Construction Documents.

(c) Construction Documents

1. Confirm funds available for Construction Documents.
2. Submit renderings or model (if required) within forty-five (45) days of design development approval.

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3. Prepare Contract Documents.
4. Submit 50 percent Construction Documents and Statement of Probable Construction Cost to Owner/Agency.
5. Consult with reviewing agencies to make certain all issues are addressed.
6. Coordinate with Design Professional to refine the loose equipment list.
7. Coordinate power, lighting, and other issues with final equipment and furniture layout.
8. Submit 100 percent drawings to the Owner/GSFIC, agency, and Design Professional peer reviewer.
9. Schedule a review meeting with Owner/Agency.
10. Conduct 100 percent Construction Documents review with Design Professional.
11. Coordinate with Owner to schedule 100 percent Construction Documents presentation meeting.
12. Confirm project is within budget, Prepare Statement of Probable Construction Cost.
13. Conduct 100 percent Construction Documents presentation meeting.
14. Incorporate comments from 100 percent Construction Documents presentation from Design Professional peer reviewer and GSFIC.
15. Deliver Final Construction Document Submittal including Final Construction Document Checklist to Design Professional for review and approval.
16. Forward Final Construction Documents, submittal documents, and Statement of Probable Construction Cost to Owner.
17. Obtain building/development permit and other agency and government approvals.
18. Authorization to issue the Final Construction Documents for bid.

19. Forward Final Construction Document Checklist and all other documents to owner.
20. Set bid date and send a copy of the advertisement for bid to Owner.
21. Design professional to complete and return Statement of Probable Construction Cost to Owner.

(d) Prequalification of Construction Professionals

Where the Owner/Agency has approved the use of prequalification of Construction Professionals, the Design Professional shall develop project-specific qualifications criteria for prequalification and submittal to the Owner/Agency for approval.

Where prequalification of Construction Professionals has been approved, the Design and Construction Schedule shall include the following schedule activities:

1. Develop and submit prequalification schedule and criteria to Owner/Agency.
2. Receive approval to proceed with prequalification of Construction Professionals.
3. Advertise for pre-qualifications of Construction Professionals (Minimum thirty-day duration; may be longer for larger and more complicated projects) by Owner.
4. Conduct a prequalification conference (scheduled by Owner approximately in the middle of the advertisement period).
5. Receive and review prequalification applications (approximately ten working days).
6. Notify all prequalification applicants of approved list of bidders

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SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.5: Design-Bid-Build

Subchapter 3.5.2: Bid and Award Phase



A. BASIC SERVICES

Upon completion of the Bidding Documents, the Owner/Agency proceeds with the procurement of construction services. The Design Professional assists in the procurement process.

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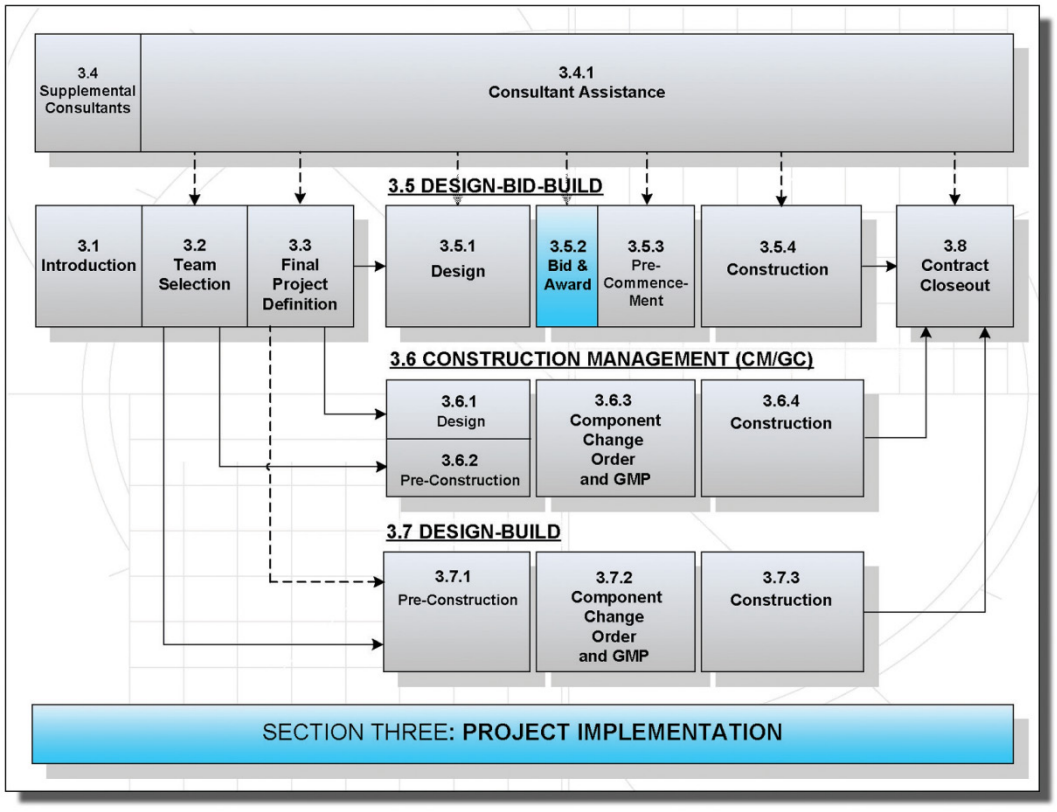


Figure 50: Project Implementation Flow Chart

The Design Professional shall assist the Owner/Agency in obtaining bids from Construction Professionals and assist in awarding the Construction Contract. Specific activities may include the following:

1. Preparation of a list of prospective bidders
2. Determination of prequalification requirements
3. Scheduling and conducting a Pre-Bid Conference
4. Determination of amounts for liquidated damages
5. Printing and distribution of Bidding Documents
6. Preparation and distribution of necessary addenda
7. Receive and tabulate bids
8. Recommendation of award to the Owner/Agency

The Design Professional shall review the Construction Professional's Bidding Documents to verify that the Construction Professional's prepared construction duration complies with the project completion dates included in the Project Design and Construction Schedule. The Owner/Agency will reconcile schedule milestone differences with the Construction Professional. Reference *SCM Chapter 3.5.2 (B): Selection of Construction Professionals*.

A1. Bid Opening

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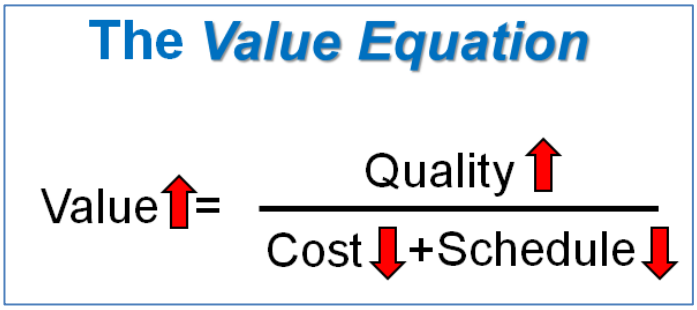
The Owner/Agency shall receive the bids and record them into a tabular bid sheet to display base bid, deductive alternates, unit pricing, and voluntary information, along with a checklist to confirm compliance with contract requirements such as immigration laws, affidavit and bid bond. The Design Professional will assist the Owner/Agency in evaluating the bids received, determining the degree of responsiveness, and the tabulation of the cost of any alternatives. The Design Professional will assist the Owner to resolve any bid protest, exceptions or clarifications to the Contract Documents, and make a recommendation for contract award in writing to the Owner/Agency.

A2. Value Management

Value Management (VM) is a process performed throughout the project, but primarily during the Design Phase, by the entire project team with the goal of enhancing the value of the project for the State. This process requires meeting the program goals in a way that optimizes the value received for the investment being made. The key objective of the VM process is to help the Owner assess and communicate the specific value objectives for the project. This project specific value definition will be crafted and refined throughout the duration of the VM process.

Value has many aspects typically grouped under the banners of Schedule, Cost and Quality. Examples include:

- Schedule
  - Occupancy Start
- Cost
  - First Cost
  - Lifecycle Cost
- Quality
  - Functionality/Quality
  - Building Aesthetics
  - Sustainability



The "Value Equation" illustrates the relative nature of each of these: As cost and schedule go up, value typically goes down; when quality goes up, value goes up. These three priorities are not mutually exclusive, but they involve tradeoffs. Value is created by optimizing these tradeoffs for the each owner's needs for each unique project. Managing value is not just managing cost, managing schedule or managing quality; it is about managing ALL THREE and doing so simultaneously.

Making good decisions before the VM process will allow VM efforts to focus on optimizing value in lieu of solving fundamental misalignments in value objectives such as the a design that significantly exceeds the budget. The VM process is continuous throughout the evolution of design and does not need to be tied only to specific drawing releases although these milestones usually provide good "snapshots in time" to capture ideas and make decisions.

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Four major considerations must be addressed for a successful VM process:

Owner/Agency must lead the VM Process - Involving the entire project team is vitally important as each team member brings specific perspectives, roles, objectives, and contributions to the process. The Owner/Agency portion of the team often includes multiple parties such as those responsible for the operation and maintenance of the facility as well as the users of the facility. It is important for there to be clear roles along with clearly defined responsibilities among the Owner/Agency team members. Since the Owner/Agency team plays a critical decision making role in the Value Management process, it is highly recommended that the Owner/Agency provide a single point of contact to the rest of the team for purposes of maintaining an efficient VM process.

We Work for the Project - The team must individually and collectively work for the benefit of the overall project throughout the VM process. The CM/GC or design-builder must be assigned (in the case of design-bid-build someone must be assigned) to assemble the pricing, schedule, constructability information and administrate the VM process. The entity assigned this responsibility is the ASSIGNED ENTITY and usually takes the lead in updating the VM analysis tool. The Owner/Agency must make decisions that account for the limited resources that must be optimized to create the greatest overall value. The design professional must design to the program and project budget and be conscious of the value tradeoff decisions made by the Owner/Agency. All team members must collaborate to optimize overall value in lieu of protecting their turf to the detriment of the project.

Earlier the Better - Timing is key to the success of the VM effort. The greatest opportunities to optimize value occur early in the design process. Therefore, the VM process should focus in the early stages of design on major systems (mechanical, electrical, structural, and skin) and other significant decisions affecting programing, site conditions, etc. For example, the design options for the superstructure of a three-story building might include a composite steel and concrete frame, or a concrete beam/joist system. Both options meet the programmatic needs of the building, but one option may be significantly less expensive than the other given the specific design requirements, as well as other factors in the local marketplace. Typically, such an analysis should be performed during the development of the concept or schematic design so that the structural system and bay layouts are set as early as possible and will not affect the evolution of the architecture or systems. A less desirable situation would be if the suggested changing of the structural systems occurred after the design was at a 50% construction drawing level. As the design progresses the VM effort moves to more detailed options with less opportunity for major changes without the potential of having a major impact.

Furthermore, timing is also a key in Owner/Agency decision making. Delaying critical decisions can disrupt the design, procurement and VM process flow leading to lost project value including costly re-design and preconstruction rework. The entire team should work to identify deadlines for the individual decisions for the Owner/Agency to: 1) keep every decision from becoming "critical" and 2) assist the Owner/Agency from missing the opportunity to make a value-based decision while it can still be incorporated effectively.

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Everyone Must Understand the Goals - The entire project team must understand the value goals for the project. Some value goals are quantifiable; for example the project must be ready for occupancy before the start of the fall semester at a University, LEED Gold must be achieved, or the budget must not be exceeded. Others such as low maintenance and optimum life cycle cost are not as easy to quantify. It is important for the Owner to communicate their value goals to the team as early as possible in the project so the project team evaluates items during the VM process with these value goals in mind.

For example, the VM process can be used to enhance aesthetics and functionality/quality. While a sloped roofing system using asphalt shingles may be relatively inexpensive compared to a metal standing seam roof, the standing seam roof would generally be considered a superior aesthetic solution and may outlive the shingles by three to four times the life of shingles. The metal roof may also functionally outperform the shingles, affording the Owner/Agency better protection from leaks. A good VM analysis of the two systems would take performance issues, as well as the expense and inconvenience of a roof replacement into account. Therefore, the results of the analysis might determine that the more expensive roofing system is a better value.

Also, using a research laboratory as an example, the VE process can be used to enhance value by determining the best HVAC systems to reduce total life-cycle costs. These labs typically require 100 percent outside air with ten to twelve air changes per hour. Therefore, they consume tremendous amounts of energy to condition and heat (or cool) the incoming air. Although heat recovery systems such as glycol loops or heat enthalpy wheels may increase first-time construction costs, operating expenses (energy consumption) are greatly reduced. Consequently, the increased costs could be recovered in as few as three or four years.

In both of these examples represent excellent VM ideas. However, the project may already be significantly over budget with the Owner/Agency's highest priority being a set fixed cost; in this case the team must focus VM efforts on cost savings options. The VM process must offer options to optimize value as defined by the Owner/Agency. When the Owner/Agency clearly communicates their value priorities the ASSIGNED ENTITY and the Design professional can calibrate their efforts to efficiently achieve the Owner/Agency priorities.

When a team member fails to meet one of these three requirements other team members may be impacted, sometimes significantly, and may jeopardize the success of the project.

The formal portion of the VM process is typically linked to a formal review and pricing of the design documents. The ASSIGNED ENTITY prepares the Construction Cost Estimates and conducts a constructability review of the design. In conjunction with this effort, the ASSIGNED ENTITY begins reviewing the design and identifying various design options that might enhance the value as described previously; the Owner/Agency and design professional (including consultants) should do the same thing.

The goal is for the ASSIGNED ENTITY to capture ideas from all of the parties in a single document. Sometimes the collection (or brainstorming) of these ideas can be done in a workshop or charrette involving the entire project team. These individual ideas are often referred to as *Value Engineering* suggestions and feed into this overall Value Management process. After a list is compiled, the team should discuss the pros and cons of each option. This evaluation should be *value-based* and NOT just focused on cost reductions.

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Because there is often a limited amount of design information available to define the work, extra communication between all members of the project team ensures the accuracy of the pricing and ultimately increases the likelihood of a proper evaluation and categorization by the Owner/Agency.

The ASSIGNED ENTITY should organize the Value Management list by major building components (site work, structure, skin, interior finishes, mechanical, electrical, plumbing, and other systems).
The formatting of this list (aka the "VM Tool") can vary based upon the project needs. The basic information that is required on the list includes the following:

- A numbering system that identifies a specific idea or design alternative
- A basic description of the idea/alternative (the description should evolve to include as much detail as possible so that, as the categorization and status of each item are determined, all project team members clearly understand the impacts and the design professions understand how to document the accepted changes)
- An Order of Magnitude Price (increase or decrease) from the corresponding Construction Cost Estimate for each item
- A method for the Owner/Agency to **categorize the option** (see description below)
- A date before which each decision must be made for each item
- An **approval status** (see description below)
- A method for determining how the cumulative approved changes impact the Construction Cost Estimate

Item **Categorization** should be based on input from the entire project team, but the final determination of the categorization of each item is the responsibility of the Owner/Agency. It is here that a single point of contact from the Owner/Agency portion of the team is crucial. The category assigned to each item must represent a consensus of the members of the Owner/Agency team. Suggested categories for the Owner/Agency are:

Category A - Regardless of available funding, these items would be recommended

Category B - Reasonable scope changes that offer value while supporting the program objectives

Category C - Drastic modifications altering scope and program objectives

It is vitally important for all team members to take into account the project program and the value goals set forth by the Owner/Agency when identifying the category of each item. The goal is for the project team to agree upon desired changes that will optimize the overall project value over the entire life of the facility. Assigning of items to categories can be done at any time, in a single day or multiple-day workshop, but due to the cost impact being tied to a specific pricing/design document, it is very important to keep close track of the status of each item relative to a specific Construction Cost Estimate and specific design document package.

The VM analysis tool helps the team work through an **Approval Status** - which items have been accepted, rejected, or simply put on hold (pending). Accepted items should also be tracked closely as to whether they have actually been incorporated into the design and reflected in the current documents. Suggested Approval Statuses are:

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- Pending
- Rejected
- Accepted
- Incorporated

In determining when to make a “go-no go” decision on each item, it is important to understand the timeline for which a decision must be made. This allows in some instances to delay difficult or uncertain decisions until necessary to maintain design and construction schedules.

Conversely, decisions can be made early and the project team can establish a *Wishlist* that can be tracked for items that could be added back to the project at a later date. For example, a decision could be made to use carpet in lieu of stone flooring in a building lobby during the schematic or design development phase of the work. An item then could be added to the Wishlist that is to add the stone back into the project if enough funds remain in the project budget once the construction progresses to a point where the flooring needs to be procured.

In determining the value of each item, the team should take in consideration that in many cases, the ideas are conceptual in nature and should establish a contingency for the likelihood that additive or deductive items may be slightly more or less respectively upon execution in the design.

The design professional should not proceed further in design without clear directives as to how to progress the design relative to the items being considered as part of the Value Management process. The ASSIGNED ENTITY should revise the previous Construction Cost Estimate summary information to reflect the Owner/Agency approved options.

In theory, this process could continue over and over again, but depending on how much is expected from the Value Management process, it can delay the design, add additional design/preconstruction cost, and there is a point of diminishing return where the time being spent is no longer worth the expected results. High level options should be evaluated early in the VM process and more detailed oriented options should be evaluated later in the process. This progression focuses effort in the way that maximizes value gains and supports the natural VM process sequence and conclusion.

Every project can benefit from a well-managed Value Management process regardless of whether or not the project is *over budget*. A common misconception is that this process is only necessary when a Construction Cost Estimate is over the approved cost limitation. In fact, it is increasingly being accepted as an industry best practice to go through a Value Management process on **every project** regardless of the status of the current Construction Cost Estimate. The goal of Value Management is to optimize the value by finding the best balance of cost, schedule AND quality, NOT just the cost.

A3. Schedule Management

Within the Bidding Documents the Design Professional will state the duration of the construction period in calendar days and/or an anticipated material completion date.

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The Construction Professional is required to affirm in the Bidding Documents that the schedule requirements can be met.

Specific schedule activities during Bid & Award will include the following:

1. Issue Advertisement for Bid. Minimum duration required for bid advertisement is thirty days (may be longer for larger and more complicated projects). For projects that have prequalified Construction Professionals, the advertisement goes only to the prequalified Construction Professionals.
2. Conduct pre-bid conference (scheduled to occur approximately halfway through the bid advertisement period).
3. Submit, receive, and open bids.
4. Issue Letter of Intent to Award.

B. SELECTION OF CONSTRUCTION PROFESSIONAL (COMPETITIVE BID)

The *standard* process for selecting a contractor, most familiar to the public sector, is the *low bid* procedure that is covered in this section. All of the other construction procurement processes deal with the procurement of construction and construction-related services using a selection process where qualification and other factors are the criteria for selection. The qualifications-based selection processes, which generates proposals, is significantly different from the standard *low bid* procurement process historically used by most public entities for obtaining contracts for construction and as discussed in this section.

B1. Activities Prior to Advertising the Bid (typical duration two to three months from completion of Contract Documents)

ACTIVITY	COMMENTS
Design Professional submits 100 percent Construction Documents to GSFIC for review/approval.	
GSFIC reviews documents.	Four to six weeks typical duration
Design Professional incorporates GSFIC's comments and advertises complete contract document package for bids.	

Figure 51: Activities Prior to Advertising the Bid

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B2. Activities: Advertising to Executed Contract (typical duration four to six weeks from advertisement)

ACTIVITY	COMMENTS	Event Duration	Elapsed Time (Days)
Project Advertising	Owner or Agency: Georgia Law requires construction bids to be advertised for a prior no shorter than thirty (30) consecutive calendar days.	30	30
Solicitation Period	General contractors and other interested parties obtain, review and make determination if they wish to bid or propose.		
Pre-Bid Conference	As noted by Owner/Agency either a mandatory or non-mandatory pre-bid conference may be held depending on the complexity of the project or other factor. Conference is typically held about two weeks after the advertisement date.		
Pre-Qualification Process*	If required, interested contractors submit qualifying data to the designated part, i.e., design professional (DP) or agency.	(10*)	(20*)
	the DP in conjunction with the Owner/Agency issues an addendum identifying based on pre-established criteria who will be allowed to bid on the work.	(10*)	
Issuance of Addenda	Subsequent to the pre-bid conference and in response to questions received during the solicitation period the DP in conjunction with the Owner/Agency will issue and post to the proper media answers to questions received by the pre-established cut off date for questions - typically 5-10 days before the bid due date.	5	30
Bid Opening Date	Formal, public, recorded and witnessed bid opening of all responses received in a timely and proper manner is held.	1	30
Evaluation of Bids	The Agency, Owner and DP evaluate and validate the bids and make a determination as to the overall lowest, responsive and responsible bidder.	10	40
Notice of Intent to Award	Lowest responsive and responsible bidder is notified of their standing and a contract is issued to them for their execution with a letter requesting specific contracting requirements such as Performance and Payment Bonds, insurance confirmation and other pertinent and legal requirements.	15	55
Contract Execution	The Owner/Agency receives the contract executed by the contractor and has Owner principles do the same.	15	70 (90**)
Notice to Proceed (NTP)	an NTP is issued as negotiated between the parties.	TBD	TBD

*Notes: *There are multiple methods of the Pre-Qualification Process and the Owner/Agency will provide guidance.*
***These steps and days are added if a pre-qualification process is implemented for the solicitation.*

Figure 52: Advertising to Executed Contract Activities

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B3. Steps of the Bid Process

(i) **Step 1**: Information Required Prior to Advertisement

Prior to selecting any services, agencies should confirm the following:

1. The overall schedule has been updated or, if not, necessary adjustments have been made.
2. Funding has been released for construction.
3. The Contract Documents are complete and properly approved.
4. Construction permit has been obtained from the State Fire Marshal.

(a) Definition of the Bid

A bid is defined as an offer to provide labor, materials, equipment, and services for the construction of a specific project for a specified price by a specific date and time. The premise of competitive bidding in the public sector is that it will allow bidders to engage in competition consistent with the standard of quality and the terms and conditions specified for the project by the documents. The assumption is that the Design Documents are complete, and that complete and coordinated documents combined with efficient management and administration will contribute to responsive and responsible bids. The lowest responsive bid provides a single objective criterion for selection that is difficult to question.

(b) Responsibility of the Owner and Design Professional

The Owner and the Design Professional work together to develop a package of information (drawings and the Project Manual). The Project Manual, which consists of the Instructions to the Bidders, the Bid Form, the Form of Contract, the General Requirements of the Contract, the Supplementary General Conditions, and the technical specifications and the drawings, describes the project, terms, and conditions under which the project is to be constructed. Generally, the documents contain not only technical information, but also legal and procedural requirements. This process assumes that the various Construction Professionals can, by a reasonable review of the documents, gather sufficient information for all bidders to make a knowledgeable, accurate bid.

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Although there are conventional ways of presenting the material, the content or format of the drawings and Project Manual should clearly state what is required for the specific project. The Project Manual covers all of the Bidding Documents and all of the Contract Documents, either by physically including them or by reference.

GSFIC requires its Design Professionals to prepare its plans and specifications generally in accordance with the guidelines provided by the Construction Specification Institute (CSI).

(c) Expectations of Construction Professionals

The various Construction Professionals who consider bidding on a public project have to make a number of determinations. First, they must assess whether they can prepare a bid according to the requirements and in the time requested. Then, they must decide if they can meet the technical requirements and the financial responsibility requirements. Also, Construction Professionals must decide if they have sufficient staff and supervisory personnel to properly perform and coordinate all phases of the work.

Construction Professionals should reasonably expect several things from the Owner and the Design Professional. Construction Professionals typically expect:

- Funds are available for the project, and that the Owner will pay promptly upon the receipt and approval of proper pay requests.

- The technical information in the drawings and the Project Manual is consistent with local laws and ordinances pertaining to the design and construction of buildings. If there are any unusual conditions known to the Owner and the Design Professional that could affect cost, the Construction Professionals should expect that they have been reasonably alerted to such conditions.

- They will not be penalized for unreasonable deficiencies in the various documents.

Based on these expectations, Construction Professionals should prepare and submit a bid with confidence in their ability to fulfill their obligations.

(d) The Project Manual: Agreement and Conditions

The Construction Professional assumes full responsibility for the supervision of work and completion of the project at bid cost and within the time frame specified in the Contract Documents. The Construction Professional retains responsibility for the selection the Construction Team, the proper execution of all subcontracts, and the purchase of services, labor, equipment, supplies, and materials required to construct the project. The General Requirements should contain "pass-thru" provisions that the Construction Professional must include in all agreements with the Construction Team. In some circumstances, the Owner and the Design Professional may retain the right to object to a potential member of the Construction Team for just cause.

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Most contracts for construction are usually divided into three parts. For example, GSFIC follows these standard conventions: (1) the agreement form, which deals with specific project items such as price, timing and payment provisions; (2) the general and supplementary conditions of the contract for construction; and (3) the technical specifications and drawings, including all addenda and change orders.

Note: *The Owner should also pay particular attention to the General Requirements, which is generally considered part of the technical specifications, but contains many administrative requirements that can be of particular interest to the Owner. The following issues may affect the procurement process:*

(1) General Requirements

The General Requirements are applicable to all projects, while supplementary or other conditions are often required to deal with the circumstances particular to a specific project. The agreement and the General Requirements define the rights and responsibilities of both the Owner and the Construction Professional and outline the duties and functions of the Design Professional with respect to the Construction Professional. No changes to the General Requirements should be made without the specific approval of the Owner. GSFIC recommends that no changes be made to their General Requirements before discussing the changes and their impacts with a representative of the Construction Division. No changes to the General Requirements are permitted on projects administered by the Construction Division of GSFIC.

(2) Supplementary Conditions

Supplementary Conditions modify the standard provisions to account for local legal, physical, climatic and other conditions. The added or modified articles should be listed in numbered sequence so that Construction Professionals can quickly recognize particular requirements of the project without rechecking the basic provisions of the General Requirements for changes or alterations. Further special or other conditions are occasionally necessary to describe situations not covered elsewhere.

Supplementary Conditions should be carefully reviewed by the Owner to establish that the added or modified articles are appropriate.

(3) Prequalification of Bidders

The Owner/Using Agency may provide specimen language for the development of prequalification criteria, but the needs and requirements for each project must be considered separately. The criteria developed must be directly related to the successful completion of the project.

The Design Professional may be charged with the initial responsibility of determining if prospective bidders qualify for bidding on the project. Any disapproved prospective bidder should have the right to appeal to the Owner for a final decision.

(4) Construction Time Period

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One of the more critical provisions of the contract deals with the timing and length of the construction period. The Owner, and particularly the Using Agency that will actually occupy the completed facility, should be advised that strikes, Acts of God, and other situations are beyond the control of the Construction Professional or the Design Professional.

These conditions might extend the time of completion. It is important to understand that neither the Construction Professional nor the Design Professional can be held responsible for such delays. The GSFIC Contract Documents, as do most standard construction contract forms, state that time is of the essence of the contract. This means that, if the time limit is exceeded and the project is not complete, the Construction Professional may be liable for damages resulting from that delay.

Because time is so important, a completion date or length of the construction period should be determined prior to requesting bids.

The construction period or completion date must be clearly stated in the Bidding Documents and should be discussed and confirmed with potential bidders during a Pre-Bid Conference, preferably at the construction site.

(5) Consequential and Liquidated Damages

Upon the advice of many members of the construction community, including Construction Professionals, Construction Team members (subcontractors, suppliers, and similar entities), Design Professionals, and State agencies, the GSFIC has revised its General Requirements to no longer call for consequential damages and, instead, to call for liquidated damages to be considered for each project.

The GSFIC has provided specimen language, but the amount to be collected as damages, not a penalty, must be separately calculated for each project based on the estimated amount of anticipated damages for each day that the project is delayed beyond its scheduled completion date.

(6) Insurance

The State of Georgia, upon advice of the Office of the Attorney General, the Risk Management Division of the Department of Administrative Services, and members of the insurance and construction community, has adopted standard insurance requirements for use on all State construction projects. The GSFIC General Requirements provide for these basic insurance requirements. Each project should be reviewed to determine if any additional coverage is necessary or desired.

If the GSFIC General Requirements are not being used on the project, the Owner and the Owner's legal and insurance counsel should establish the coverage and limits desired.

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Any coverage that the Construction Professional will be asked to carry to protect the Owner's interest in the project must be included in the contract so the cost is included in the Construction Professional's bid.

Construction Professionals interested in bidding on the project should study these provisions carefully so that the cost of the required insurance protection will be included in their bids. Bidders should also be careful to include the cost of any other or additional insurance protection that they require that is not specified.

(7) Bonds

Surety bonds for bid, payment and performance of the work are required on all State projects (except GDOT) over $100,000. The Georgia Department of Transportation has different surety bond thresholds required under Georgia Law.

Bonding requirements must be communicated to the Construction Professionals so these costs can be incorporated into their bids. The Owner should require the Construction Professional to obtain surety bonds and insurance from only those reputable companies that are licensed to do business in the State and who acceptable to the Owner. The Contract Documents should clearly describe what is required for a surety or an insurance company to be *acceptable to the Owner*.

The Owner should confirm the validity of any bond upon its receipt by writing to the home office of the surety.

(ii) **Step 2**: Advertisement of Project/Instruction to Bidders

(A) Advertisement of the Project

A public notice should be prepared and posted on the Internet at the Georgia Department of Administrative Services (DOAS) Georgia Procurement Registry at least thirty (30) days prior to the bid opening date.

The established bid date can be longer depending on the size and complexity of the project, but should include a time of day as well as the date. Each solicitation should be stamped with the time and date upon receipt. No bid received after the specified time and date should be considered in the evaluation process and should be marked as *nonresponsive* and retained for compliance with the Georgia Open Records Act. Based on the complexity of the project and the prevailing market conditions, the Owner and the Design Professional should determine and allocate sufficient time for bidders to prepare their proposals. This is essential to effective price competition.

If the best interests of the project require the original amount of time to be extended, bidders should be notified by an addendum posted to the Georgia Procurement Registry. The addenda are posted under the documents section of the original posting with a sequential number at least five working days prior to the original date for receipt of bids.

(B) Instructions to Bidders

The notice should include an Instruction to Bidders as a separate document in the document attachment section of the Georgia Procurement Registry bid posting, addressing the following information:

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- Procedures for preparing, submitting and opening bids, including the location, date, and time of the bid opening
- Contact name and number for obtaining bid documents
- Pre-Bid date, time and location (identify if attendance is a mandatory requirement for bidding the project)

After the project has been advertised in the Georgia Procurement Registry, interested firms (vendors) should not contact any agency representatives or facility users except those named in the solicitation on possible penalty of disqualification. This data must be included in the public notice.

(iii) **Step 3**: Bid Process/Bid Opening

(A) Bid Opening Date

The Owner and the Design Professional should make an effort to communicate with other public and private entities to avoid conflicts with the date for receipt of bids on other projects. Bidders have limited resources, and too many bids due at once can restrict the number of bidders for any given project and severely affect bid quotations. Bids should be delivered at a designated place, not later than a specified time, preferably after noon any day but weekends, Monday, a legal holiday, or the day after such holiday. Such date, time and place must be specifically spelled out in the solicitation.

(B) Issuance of Bid Documents

1. Traditional Document Distribution

Upon receipt of the required deposit, bidding material should be forwarded (shipping charges collect) to the entity requesting them, as soon as possible. The amount of the deposit should be determined based on consultations between the Design Professional and the Owner, but should approximate the cost of reproduction. The full amount of deposit for one set of Bid Documents should be refunded upon return of such set in good condition within thirty (30) days after date of opening of bids. Half of all other deposits should be refunded upon return of complete documents in good condition within thirty days after date of opening of bids.

Good condition is defined to require that documents have *not* been taken apart or marked in a manner that limits their reuse for construction.

The Owner should reimburse the Design Professional for the cost of providing these documents to bidders. Each bidder should be allowed to retain the documents until the contract has been awarded, or until that bidder is eliminated from competition. The documents should then be promptly returned to the Design Professional, and the deposit should be refunded if the documents are complete and in good condition. A list of interested Construction Professionals must be maintained, as well as an audit trail for the fees charged for the documents. It is preferable that the Design Professional or other lead Design Professional does this.

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Sets of documents for use by the Construction Team (subcontractors, suppliers, and similar entities) should be provided at central trade offices or plan rooms established in the geographical area of the project, and in some cases, at the Design Professional's office to aid the preparation of sub-bids and quotations.

It is generally not good practice to issue partial sets of Bidding Documents to the Construction Team, as this may prevent their obtaining adequate knowledge of work to be performed by others.

2. Electronic Document Distribution

Design Professionals may provide electronic bid documents to the respective procurement office staff to post to the Georgia Procurement Registry (GPR) or may elect to post to FTP (File Transfer Protocol) sites maintained by their firm. Plans and specs may be downloaded free of charge or purchased outright without a refund. Alternatively, the design professional may electronically file the bid documents with local printers where prospective bidders may purchase for a non-refundable fee. Non-refundable fees must be acceptable to the Owner, Using Agency, and Design Professional. By utilizing an electronic posting method, the Design Professional and Project Managers are released from the burden of tracking plan purchases, deposits, and refunds for returned documents.

(C) Bid Form

The Design Professional should prepare a blank bid form specifically for the project, with copies bound into each Project Manual. Extra copies should be furnished to each bidder with the Bidding Documents for use in preparing and submitting a bid.

(D) Alternates & Unit Prices

An alternate bid is the amount bid for any specified change in the drawings and specifications. Alternate bids should be requested only when they are of special importance to the Owner, either as a means of ensuring a proposal within a limited budget or providing the opportunity to make an important decision on materials or processes. The number of alternates should be held to a minimum and complex alternates should be avoided whenever possible.

Selection and acceptance of alternate bids should be made or approved by the Owner, based on the Design Professional's recommendations, to use the available funds in the best interest of the project.

All alternate bids should be deductive. No alternate bids should be taken unless the base bid exceeds the amount of money budgeted for the project. Any alternate, or alternates, if taken, must be taken in numerical sequence to the extent necessary to reduce the cost to a sum that is not in excess of the amount budgeted, if possible. *Under no circumstances should both additive and deductive alternates be used on one project*.

If unit prices are to be used, they should be determined in advance by the Design Professional and clearly stated in the Contract Documents. They should be specified only when necessary and when the unit can be accurately described and prices established. The number of unit prices should be held to a minimum.
Examples of specimen language for the use of unit prices are contained in the GSFIC sample Supplementary Conditions.

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(E) Pre-Bid Conference

A mandatory Pre-Bid Conference is recommended to answer Construction Professionals' questions, and should be held in advance of the bid opening to allow clarification by addenda of questions raised. The Pre-Bid Conference should always include a discussion of the time allowed for completion and any unit prices included in the Contract Documents.

The bid form should contain the following statement:

> The Construction Professional in undertaking the work under this contract affirms that it has visited the premises and has taken into consideration all observable conditions that might affect its work.

A sign-in list of attendees should be prepared for the Pre-Bid Conference and maintained in the solicitation folder as proof of attendance. A transcript of the Pre-Bid Conference should be posted to the Georgia Procurement Registry, along with vendor questions and State representative answers, as an addendum to the solicitation at least five calendar days prior to the Bid Opening Date (BOD).

(F) Formal Responses/Addenda

No oral interpretation should be made to bidders as to the meaning of the drawings and specifications. Requests for interpretation of drawings and specifications should be made in writing to the Design Professional not later than six days prior to the bid opening.

Failure on the part of the successful bidder to do so should not relieve the Construction Professional of the obligation to execute such work in accordance with a later interpretation by the Design Professional. All interpretations made to bidders should be issued in the form of addenda to the plans and specifications posted to the Georgia Procurement Registry for review by all bidders (vendors). The Construction Professional should acknowledge such addenda in the bid form, and in closing the contract they should become a part thereof.

Addenda issued prior to the bid opening date that adjust, modify, or change the drawings and specifications as set forth in the addenda and posted on the Georgia Procurement Registry are, consequently, changes in the Contract Documents made before the Owner-Construction Professional agreement is signed. All such changes must be in written and/or graphic form and must be sent to each holder of a set of Bidding Documents—one copy per set.

No addenda should be issued later than five calendar days before the scheduled bid opening date, except to withdraw the request for bids or postpone the date for their receipt.

If bidders have questions for the Design Professional, the questions should be submitted in writing only far enough in advance so that the Design Professional has time to respond with an addendum according to the above schedule.

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(F) Bid Opening

All bid openings should be open to the public. The bids must be taken at the set time and date prescribed in the solicitation as posted on the Georgia Procurement Registry, with no late bids accepted. They shall be opened at the time of the closing and read aloud by the convening authority. A bid bond in the amount of not less than 5 percent of the bid must accompany each bid. This provides a guarantee that the lowest bidder will execute a contract for the bid price and provide payment and performance bonds in the amount of the bid.

The Owner may, at its discretion, forgive small copy errors in the bids or proposals. The Owner, by provisions in the Instructions to Bidders, invitation, or advertisement to bid, typically retains the right to reject any bids that are non-responsive or that are over budget.

However, rejection should not be used as a subterfuge (1) to accept a bid not submitted before the prices of others were made public, or (2) to obtain an estimate of the cost of the work and proceed to award it in segregated or separate contracts or to a bidder selected in advance.

On the other hand, the Owner typically reserves the right to waive irregularities in the bids in the best interest of the project. This should be done after careful study and in all good faith.

(iv) Step 4: Award of Contract/Notification of Award

Award should be made to the lowest responsive and responsible bidder. The lowest bid will be the bid whose price, after incorporating all accepted alternates, is the lowest and most responsive bid that was received. GSFIC procedures provide that, in the event there is no base bid at or below the Stated Cost Limitation, the Owner may, in its sole and complete discretion, take any of the following actions: (1) reject all bids and cancel the solicitation, (2) elect deductive alternates as provided above, or (3) increase the budget to allow award of the contract. The Owner should reserve the right in its sole and complete discretion to reject any and all bids and to waive technicalities and informalities.

If a bidder withdraws or is disqualified, the remaining bids should be considered as though that bid had not been received.

Bidders prior to the bid opening day and time may withdraw bids together with the full bid security accompanying it. After such time, no bid may be withdrawn for a period of thirty-five days except as provided in OCGA Section 13-10-22 (appreciable error in calculation of bid).

Negligence or error on the part of any bidder in preparing its bid confers no right of withdrawal or modification of its bid after the bid opening date and time except as provided by law.

A Notice of Award will then be sent to the successful bidder. Contract, if awarded, should be on a lump sum basis, and be substantially in accordance with the contract shown in the Contract Documents.

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SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.5: Design-Bid-Build

Subchapter 3.5.3: Pre-commencement Phase



A. BASIC SERVICES

Upon the Construction Professional's receipt of the Owner/Agency's Letter of Intent to Award, the Construction Professional shall initiate the following Pre-Commencement activities (See list below). When the Pre-Commencement activities are completed, the Owner/Agency will authorize the Construction Professional to proceed by issuing a Proceed Order.

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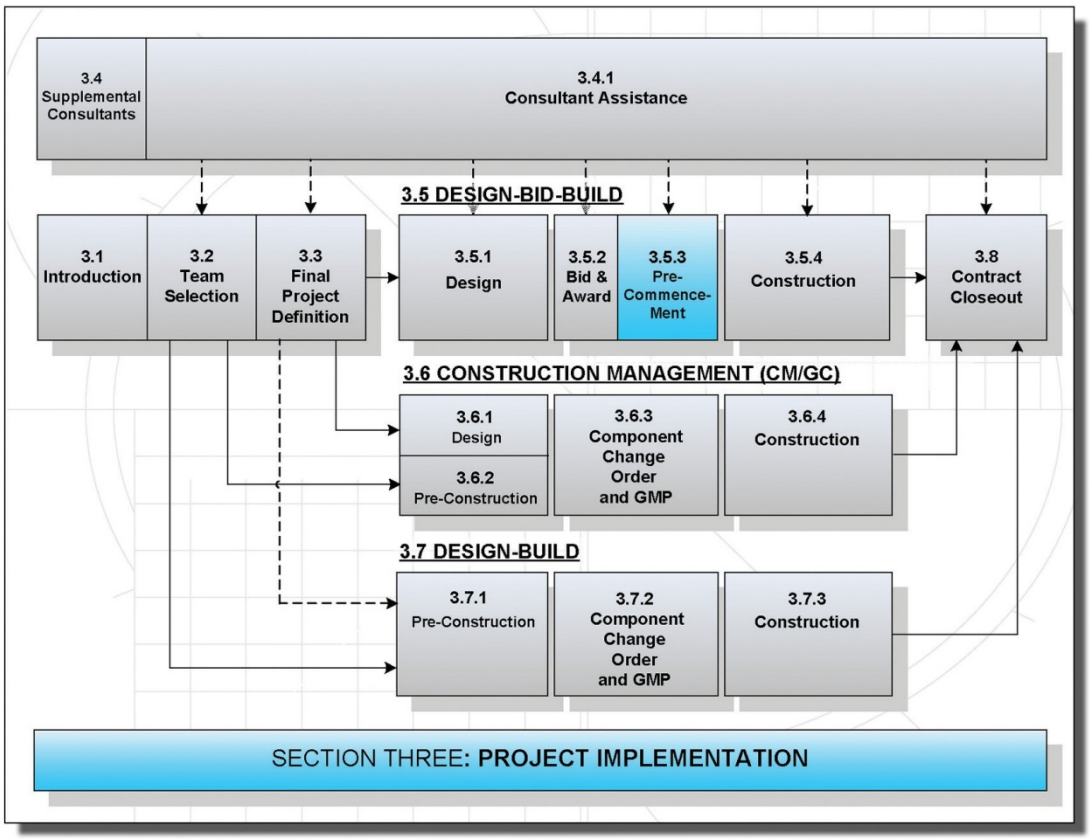


Figure 53: Project Implementation Flow Chart

No physical work may begin on the construction site until the Construction Professional's receipt of a Proceed Order issued by the Owner/Agency. No Proceed Order will be issued until the Owner/Agency has received in good and proper order the following documents:

1. Construction Contract executed by the Construction Professional (Reference the Design-Bid-Build Construction Contract.)
2. Payment and Performance Bonds (Reference Section Seven—Forms in the Design-Bid-Build Construction Contract.)
3. Proof of insurance (Reference Section One, Part Five in the Design-Bid-Build Construction Contract.)
4. List of intended subcontractors
5. Construction Progress Schedule (Reference Section Two, Part One of the Design-Bid-Build Construction Contract.)
6. Submittal and Shop Drawing Schedule (Reference Section Two, Part Two of the Design-Bid-Build Construction Contract.)
7. Documents Review Report (Reference Section Two, Part One of the Design-Bid-Build Construction Contract.)
8. Construction Management Plan (Reference Section Two, Part One of the Design-Bid-Build Construction Contract.)
9. Documentation necessary for receiving land disturbance permits (Reference the Design-Bid-Build Construction Contract.)
10. Construction Professional's Quality Control Program (Reference Section Two, Part Two of the Design-Bid-Build Construction Contract.)
11. Written Safety Program (Reference Section Two, Part Three of the Design-Bid-Build Construction Contract.)
12. Construction Professional's Schedule of Rental Rates and Wages Rates (Reference Section Two, Part One of the Design-Bid-Build Construction Contract.)

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A1. Construction Coordination Meeting

As early as practicable, after receipt of the Letter of Intent to Award and reasonably in advance of the Construction Professional's anticipated commencement of work on the project, the Construction Professional shall schedule and conduct a Construction Coordination Meeting. The purpose of this meeting is to determine and develop the appropriate and necessary processes and procedures for proper planning, coordination, and installation of all the work. Attendance is required by the Construction Professional and its Construction Team (subcontractors and material supplier personnel that will be materially involved in production of the work). The attendees shall be knowledgeable people with authority to reach agreement and make a commitment on the coordination and processes involving each attendee's portion of the work. The Owner's representative represents the Owner/Agency at this meeting and shall require that an authorized and knowledgeable representative of the Design Team and all consultants contributing to the design be present at this meeting.

Additional coordination meetings shall be scheduled by the Construction Professional with all of the affected parties to continue review and complete the resolution of any real or apparent conflicts or interferences.

A2. Cost Containment

The Design Professional shall work with the Construction Professional in reconciling the Construction Professional's bid price with the Statement of Probable Construction Cost and in the development of a schedule of values which will be loaded into the Construction Professional's Overall Project Schedule and serve as the basis for determining the percent of completion in preparation for the monthly pay request.

A3. Schedule Management

Prior to commencement of the work, but no later than sixty days after the effective date of the contract, the Construction Professional must submit a Construction Progress Schedule showing the dates for commencement and completion of the work required by the Contract Documents to the Design Professional and the Owner/Agency. The construction milestones must be clearly indicated and sequentially connected and organized to identify the critical path of the project. The schedule will have the minimum number of activities required for the Construction Professional to efficiently and accurately manage and monitor the progress of the construction activities and represent to the Design Professional and Owner/Agency the complete scope of work and define the project's critical path and associated activities.

MFC

With the Construction Progress Schedule, the Construction Professional shall submit the shop drawings and sample submittal schedule for approval by the Design Professional, correlating the associated approval dates for the shop drawings and samples with the Construction Progress Schedule. Upon recommendation by the Design Professional with the acceptance of the Owner/Agency, the Construction Progress Schedule shall become the Overall Project Schedule and become part of the contract.

A4. Computerized Scheduling

There is no State-mandated format for the development of the Overall Project Schedule. It is anticipated that the Construction Professional will provide the Overall Project Schedule utilizing one of the nationally recognized construction scheduling software programs. These programs utilize network analysis diagrams to plan and organize construction activities in an orderly manner along the critical path. The Construction Professional shall submit the type and capabilities of the scheduling software to be used to the Owner/Agency and the Design Professional for review and approval.

Notwithstanding which scheduling software is to be utilized, as a minimum, the Overall Project Schedule shall have a complete sequence of construction by activity, with dates for beginning and completion each element of construction.

At minimum, the Overall Project Schedule shall include the following elements:

1. List all activities involved in the project, including every activity having an impact on the time required to complete the work.

2. Illustrate the order and the interdependence of activities and the sequence of work, and show how the start of a given activity depends on completion of preceding activities. Illustrate how completion of the activity may affect start of subsequent activities.

3. Illustrate the complete sequence of construction by phase and activity, identifying work on separate floors or areas as appropriate.

4. Provide dates for submittals, including those for Owner/Agency-furnished items, the Design Professional submittal review periods, and return of submittals, dates for procurement and delivery of critical equipment and products, and dates for installation and provision for testing and commissioning activities. Allow time for submittal if required.

5. All activity durations indicated on the schedule should not exceed fifteen calendar days each in length, except non-construction activities such as procurement and production of equipment and materials, delivery of materials and equipment, or the curing of concrete.

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6. All work items involving submittals, materials, and installation shall not be included in the same activity. There shall be separate activities for submittal, submittal review and approval, including submittal times, material delivery, and installation.

7. The Construction Professional shall obtain submittal and review and approval dates from the Owner/Agency, including delivery dates, and manufacturing and installation duration time for materials and equipment to be furnished by the Owner/Agency.

8. Provide a Work Breakdown Structure (WBS) format that summarizes activities in accordance with an acceptable schedule of values.

SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.5: Design-Bid-Build

Subchapter 3.5.4: Construction Phase



A. DESIGN PROFESSIONAL CONSTRUCTION ADMINISTRATION SERVICES

The Design Professional Construction Administration Services commence upon the issuance of a letter of authorization from the Owner/Agency requesting such services. The Construction Administration Services duties consist of both office and field services necessary for the Design Professional to administer the requirements of the Contract Documents, interpret and clarify the Contract Documents, and require the Construction Professional's compliance with the Contract Documents.

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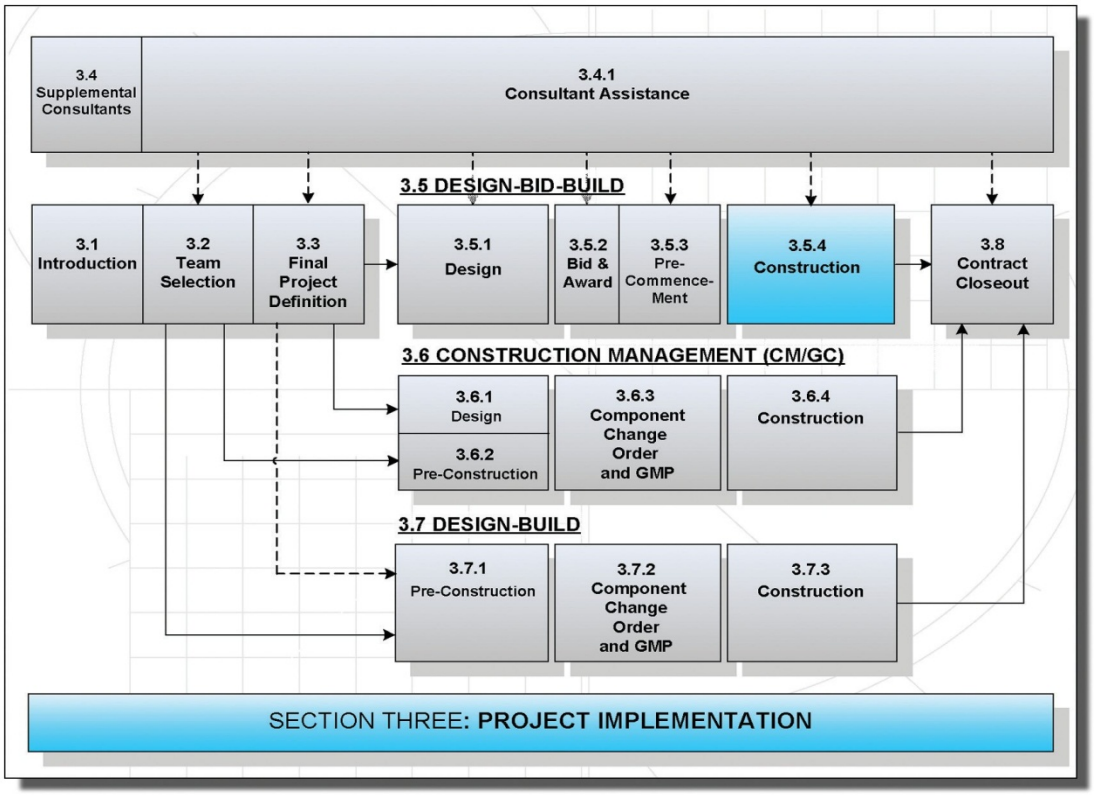


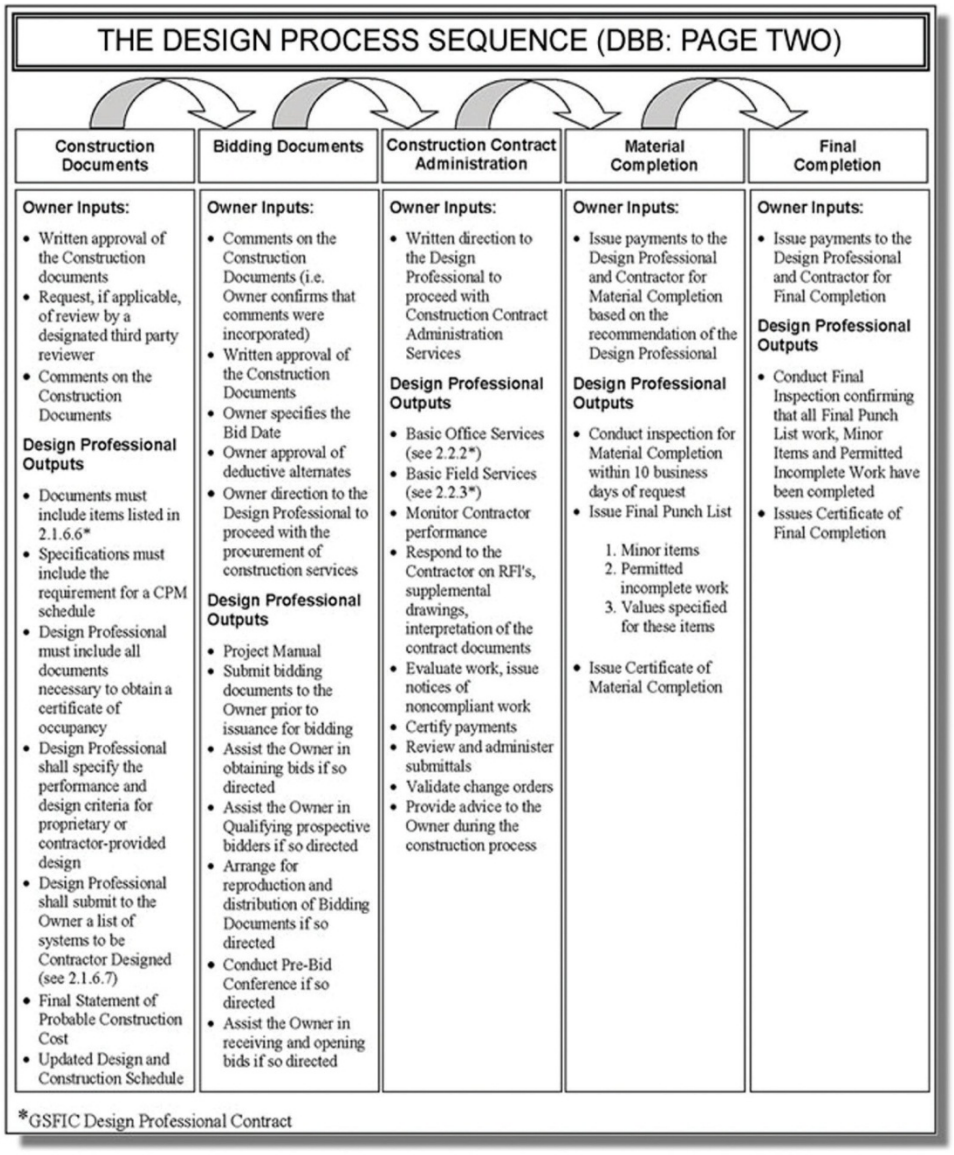
Figure 54: project implementation Flow chart

Office Services are performed during the Construction Phase and are those administrative and technical tasks that do not require or comprise of on-site observations such as maintaining correspondence and records; reviewing shop drawings and samples; submittals; answering requests for information, making revisions, corrections, or clarifications to the Contract Documents; and similar administrative and technical tasks.

Reference Section Two, Part Two of the Design Professional Contract for additional explanation and guidelines on office services.

The table below summarizes the Design Professional's construction administration sequence:

Table 3: The Design Process Sequence



THE DESIGN PROCESS SEQUENCE (DBB: PAGE TWO)

Construction Documents	Bidding Documents	Construction Contract Administration	Material Completion	Final Completion
Owner Inputs: • Written approval of the Construction documents • Request, if applicable, of review by a designated third party reviewer • Comments on the Construction Documents **Design Professional Outputs** • Documents must include items listed in 2.1.6.6* • Specifications must include the requirement for a CPM schedule • Design Professional must include all documents necessary to obtain a certificate of occupancy • Design Professional shall specify the performance and design criteria for proprietary or contractor-provided design • Design Professional shall submit to the Owner a list of systems to be Contractor Designed (see 2.1.6.7) • Final Statement of Probable Construction Cost • Updated Design and Construction Schedule	**Owner Inputs:** • Comments on the Construction Documents (i.e. Owner confirms that comments were incorporated) • Written approval of the Construction Documents • Owner specifies the Bid Date • Owner approval of deductive alternates • Owner direction to the Design Professional to proceed with the procurement of construction services **Design Professional Outputs** • Project Manual • Submit bidding documents to the Owner prior to issuance for bidding • Assist the Owner in obtaining bids if so directed • Assist the Owner in Qualifying prospective bidders if so directed • Arrange for reproduction and distribution of Bidding Documents if so directed • Conduct Pre-Bid Conference if so directed • Assist the Owner in receiving and opening bids if so directed	**Owner Inputs:** • Written direction to the Design Professional to proceed with Construction Contract Administration Services **Design Professional Outputs** • Basic Office Services (see 2.2.2*) • Basic Field Services (see 2.2.3*) • Monitor Contractor performance • Respond to the Contractor on RFI's, supplemental drawings, interpretation of the contract documents • Evaluate work, issue notices of noncompliant work • Certify payments • Review and administer submittals • Validate change orders • Provide advice to the Owner during the construction process	**Owner Inputs:** • Issue payments to the Design Professional and Contractor for Material Completion based on the recommendation of the Design Professional **Design Professional Outputs** • Conduct inspection for Material Completion within 10 business days of request • Issue Final Punch List 1. Minor items 2. Permitted incomplete work 3. Values specified for these items • Issue Certificate of Material Completion	**Owner Inputs:** • Issue payments to the Design Professional and Contractor for Final Completion **Design Professional Outputs** • Conduct Final Inspection confirming that all Final Punch List work, Minor Items and Permitted Incomplete Work have been completed • Issues Certificate of Final Completion

*GSFIC Design Professional Contract

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Field services consist of on-site observation, evaluation and documentation by the Design Professional and its Design Team to guard against nonconformity of the work with the Contract Documents, observations and documentation of any compliance concerns with the Overall Project Schedule, the superintendence of the work, and the qualifications of the skilled workers. Reference Section Two, Part Two of the Design Professional Contract for additional explanation and guidance for Field Services.

A1. Monthly Progress Report

The Design Professional shall provide a monthly written report on progress and condition of the work to GSFIC, the Client Agency and the Using Agency.

A2. Monitoring Construction Professional Performance

It is the Design Professional's responsibility to approve, accept, consent to the covering of, and certify work for payment. This responsibility is not shared with employees or Construction Professionals of the Owner/Agency.

A3. Responding to the Construction Professional

The Design Professional is the initial interpreter of the Contract Documents. The Design Professional shall respond to a Request for Information (RFI) from the Construction Professional as required in the Design Professional contract, and to an issue, claim, or complaint. The Design Professional should provide or recommend a standard RFI form with basic information for the submittal and response to all RFIs. The Construction Professional should number RFI's sequentially in a chronological order. The Design Professional and Construction Professional should keep separate RFI Logs.

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A4. Evaluation of the Work

The Design Professional shall visit the site during critical phases of construction and have access to all work in progress. The Design Professional shall report deviations from the Contract Documents and, if warranted, have the authority to issue a Stop Work Order for such noncompliant work.

The Design Professional Contract requires that the Owner/Agency and Design Professional predetermine and approve the number of site visits that will be necessary for each design discipline to provide adequate field services. Additional site visits over the predetermined number can be treated as additional services. Complex projects (building function, size, or limited construction duration) may necessitate more Construction Progress Meetings and site visits than might be required for a basic project. Therefore it is important that the number of predetermined site visits are adequate to cover the field services and inspections that might be normally required for a specific project. Note that this provision quantifies the Design Professional's scope of basic field services. Additional site visits should not be necessary unless the project is experiencing construction delays or some other unusual event requiring onsite observation.

The Design Professional shall not have control over, nor be responsible for acts or omissions of the Construction Professional. The Owner shall endeavor that all construction communication pass through the Design Professional.

A5. Certification of Payments to the Construction Professional

The Design Professional shall review (and correct if required) and certify the Construction Professional's monthly Application for Payment (periodical estimate). The Design Professional shall also submit an *Advice on Construction Progress* with the Construction Professional's Application for Payment. The Design Professional shall not approve payment for work that is noncompliant with the Contract Documents. The Design Professional shall withhold an amount per the contract of the value of all incomplete work after Material Completion. Reference Exhibit J of the Design Professional Contract.

A6. Submittals

The Construction Professional shall prepare a submittal schedule that is coordinated with the Overall Project Schedule, in accordance with the Pre-Commencement Phase activities in the Section Two, Part One of the Design Professional Contract to be reviewed by the Design Professional upon receipt. After approval, most subsequent submittals (shop drawings and similar submittals) shall also be reviewed as required by the Design Professional contract provided they are submitted in accordance with the submittal schedule. The submittal schedule should be coordinated with the construction schedule so that adequate time is allowed for submittal review. The submittal schedule should allow additional time for complicated, large submittals such as structural steel or concrete, window systems, and MEP systems.

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It may be necessary for the Construction Professional to send submittals requiring the Design Team's review (architects, engineers, and other consultants) directly to the team member with a copy of the transmittal to the Design Professional in order to expedite the turn-around time; however, the Design Professional is still responsible for reviewing and coordinating the information contained in the expedited submittal.

The Construction Professional or the Design Professional and its Design Team shall not redesign, add, or change scope on shop drawings or submittals without first requesting a change and obtaining an approval by the Owner/Agency and issuing a change order to the Contract Documents. Also, the Construction Professional shall not use the submittal process as a way of requesting substitution from specification requirements.

A critical part of submittal review and contract closeout is the submission and review of the O & M Manuals. If requested, the Design Professional shall include the Owner/Agency in the review of major systems such as mechanical, electrical, or plumbing (MEP) submittals and the initial O & M Manual submittal. This would be done as a courtesy in an effort to make this documentation available to the Owner/Agency at the earliest time possible. The Construction Professional shall submit the O & M Manuals for review and approval prior to any required Owner training sessions. Note that the Owner training sessions and review and approval of the O & M Manuals must be completed prior to Material Completion.

A7. Changes in the Work

It is normal for changes in the Contract Documents to occur during the Construction Phase of a project. The change could be the result of an unforeseeable job site condition, an error in the Contract Documents, a necessary revision to the building code, or a new requirement of the Owner.

Approval of the Owner is required prior to any change of the work. The Design Professional will be responsible for providing the information as listed in Figure 55.

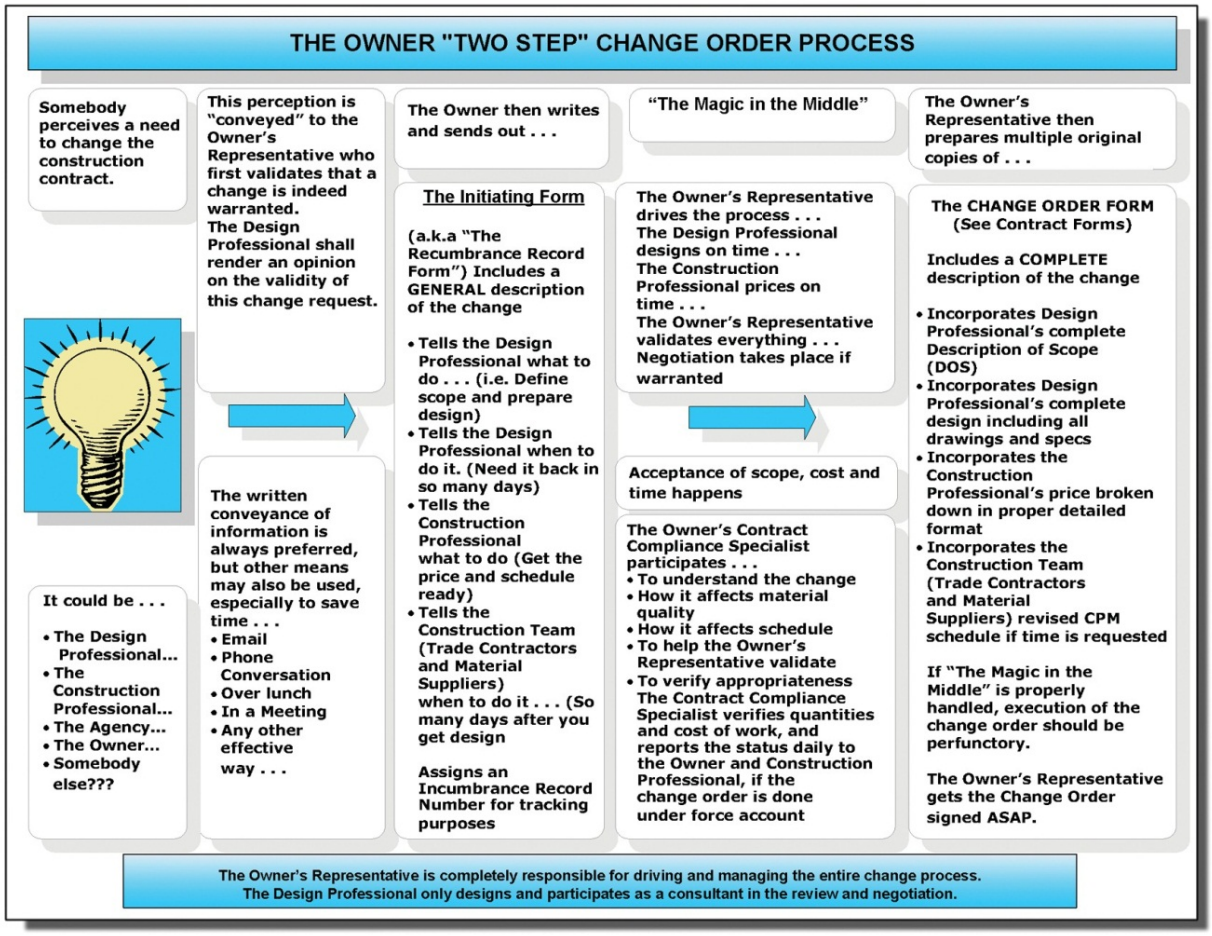


Figure 55: The "Two-Step" Change Order Process

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Note that the Design Professional may be due additional compensation on change orders that change the scope of work for the project or for changes not caused by the Design Professional's oversight.

A8. Project Completion

Project Completion has historically been a problem area in most State projects. Current Construction Documents have been revised to define two levels of project completion: *Material Completion* followed by *Final Completion*. Reference *SCM Chapter 3.8: Contract Closeout* for contract closeout procedures, guidelines and checklists.

A9. Additional Services

In addition to those services described under Basic Design Services and Basic Contract Administration Services, the Design Professional and its Team may be commissioned to provide certain additional Design Services and Construction Contract Administration Services. *Exhibit A* of the Design Professional Contract provides specific guidance and instruction on how to categorize and contract additional services.

Additional services that may be determined prior to executing the Design Professional Contract should be identified in Exhibit A or expounded on and included in Exhibit L of the Design Professional Contract.

Compensation for those Additional Design Services and Construction Contract Administration Services that can be agreed upon shall be included in the contract compensation amount. If compensation cannot be agreed upon, the Additional Design Services or Construction Contract Administration Services shall be performed at the hourly rates set forth in Exhibit B of the Design Professional Contract, plus reimbursable expenses pursuant to Paragraph 4.1.3 of the Design Professional Contract with a limitation as to the maximum amount specified.

A10. Compensation and Contract Adjustments

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The Design Professional Contract is a lump sum fee contract. The lump sum fee amount is based upon negotiations and agreement between the Owner/Agency and the Design Professional, and includes fees for the Design Team (architects, engineers, basic engineering subconsultants, and other consultants required to properly design the project and administer the construction). Guidance for determination of the appropriate fee amounts is provided in the Instructions to Preparers of the Design Professional Contract. The initial lump sum fee would include the following components:

- Basic Design Service fee
- Basic Construction Contract Administration Fee, which includes an agreed-to quantity of official site visits
- Agreed-to additional services that are described in Exhibit A and Exhibit L of the *Design Professional Contract*

B. CONSTRUCTION SERVICES

After successfully completing the Construction Pre-commencement activities and within ten days from receipt of the Proceed Order from the Owner/Agency, the Construction Professional shall commence the work in accordance with the Construction Management Plan, Overall Project Schedule, Quality Control Program, Safety Program, and similar guidelines that were developed and approved during the Pre-commencement Phase.

B1. Pre-construction Meeting

If a significant amount of time has elapsed (more than a month) between the Pre-commencement Coordination meeting and the receipt of the Order to Proceed from the Owner/Agency, the Construction Professional may elect to schedule and host a Pre-construction meeting to present the current Construction Management Plan and Overall Project Schedule and to confirm agreement on the coordination procedures and processes for prosecuting the work.

B2. Construction Means & Methods

The Construction Professional shall have control of all means and methods, including all labor, materials, and services necessary to produce the construction of the project in accordance with the Contract Documents, including the entire construction of the various separately identifiable parts thereof. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; in addition, work includes and is the result of furnishing, installing, and incorporating all equipment, fixtures, and supplies into the construction, all as required by the Contract Documents.

B3. Construction Progress Meetings

In addition to the Construction Professional's internal project management activities for efficient and orderly management of the project, the Construction Professional shall schedule and host biweekly Construction Progress Meeting with the Owner/Agency, Owner's representative, and the Design Professional(s) representatives at the site. This meeting serves to communicate the project's progress and to discuss, resolve, or develop a plan to resolve outstanding questions or issues affecting the timely completion of the work. The Construction Professional shall issue minutes of the meeting indicating decisions made and plans of action that include the identification of the party(ies) responsible and a date for resolution of the outstanding issue(s).

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B4. Coordination with Design Professional and Consultants

Where the Construction Professional has determined that the Contract Documents are not complete, definite, and clear enough to complete the work, the Construction Professional shall submit a request for information to the Design Professional in writing with a copy to the Owner/Agency for additional information. Reference *SCM Subchapter 3.5.3: Pre-commencement* for more information.

B5. Changes to the Work

Changes in the work may occur either as a result of a change requested by the Owner/Agency or by a change to the work due to the discovery of some unforeseen existing physical condition not contemplated in the Contract Documents.

(a) Owner's Right to Make Changes

Without invalidating the contract, the Owner/Agency may authorize or order extra work or changes by altering, adding to, or deducting from the work or the contract time. Changes in the work can only be authorized by an executed change order.

(b) Unforeseen Circumstances

By executing the Construction Contract, the Construction Professional acknowledges that it has visited the project site and has taken into consideration all open and apparent conditions that might affect the work.

No claims for changes based on lack of knowledge of existing conditions are allowed unless the existing physical conditions cannot be discovered by a reasonably observant person. Changes to the work relating to conditions that are not open and apparent and are materially different from the Contract Documents may be adjusted by change order.

(c) No Change without Owner Approval

Neither the Design Professional nor the Construction Professional can make any change in work without an approved change order. Without a change order, the Construction Professional shall have no claim for payment for cost, fee, or revision to the completion schedule based upon or resulting from changes to the work. This requirement does not apply where changes in the work are required due to emergency situations when the Construction Professional takes reasonable precautions to protect the safety of persons, property, work, or of adjoining property.

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(d) Change Order Forms

The change order is the written instrument by which adjustments in the contract sum and contract time are legally modified. The change order shall be in the format as shown in Section 7 of the Design Bid Build Construction Contract.

The change order must be accompanied by a breakdown of the quantities, prices, and expenditures for labor and materials used in computing the proposed change in the contract scope. The Construction Professional's breakdown must have a separate line item for each Construction Team member's proposed cost on the letterhead of the Construction Professional and properly signed by an authorized representative of the Construction Team member.

The breakdown shall include the following oath:

> *I do solemnly swear to the best of my knowledge, information, and belief, that the costs shown hereinabove do not exceed current costs for like services or materials in the locality of the project and, in the case of a force account, the costs represented do not exceed the actual costs to the Construction Professional, and the quantities shown do not exceed actual requirements*

An approved change order may be issued as one of the following:

- Lump Sum Change Order
- Force Account Change Order

Change orders may be issued under either of the following conditions and shall contain the following language as appropriate:

(i) For Lump Sum Change Order

The payment and extension of time, if any, provided by this change order constitutes compensation in full to the Construction Professional and the Construction Team (subcontractors and suppliers) and for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all delays or time related costs thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any claims related thereto against the Owner, the Design Professional, and the Design Team (architects, engineers, basic engineering subconsultants, and other consultants required to properly design the project and administer the construction).

(ii) For Force Account

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The payment and extension of time, if any, provided by this change order constitutes interim compensation to the Construction Professional and the Construction Team (subcontractors and suppliers) and for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all delays or time-related cost thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any claims related thereto against the Owner, the Design Professional, and the Design Team (architects, engineers, basic engineering subconsultants, and other consultants required to properly design the project and administer the construction).

(iii) For All Change Orders

Any changes or reservations by the Construction Professional to the representations and releases in the change order, or refusal of the Construction Professional to execute the change order, shall be a material breach of this contract that may be sufficient cause to issue a declaration of default.

Each change order shall include all time and monetary impacts of the change. Failure to include a change in contract time or contract sum in a change order shall be considered either or both a Zero Time or Zero Price change order and shall waive any change in contract time or contract sum at a future date. Commencement of work upon a change order is conclusive proof that the Construction Professional has accepted the change order.

(e) Change Order Process

Using the proper format, the Owner/Agency, through the Design Professional, shall issue a change order request or directive in writing to the Construction Professional. The Construction Professional shall respond to the Design Professional in writing. The Construction Professional's written response shall contain proposed modifications, with appropriate breakdown and backup, in the contract time and Sum.

The Owner/Agency and Design Professional shall review the Construction Professional's Change Order Proposal and respond to the Construction Professional. If the Construction Professional's Change Order Proposal is acceptable, the Construction Professional shall execute the change order, certified by Design Professional and executed by the Owner.

(f) Disagreement between Design Professional and Construction Professional

Should the Design Professional and the Construction Professional disagree as to the amount of the adjustment of the contract sum and contract time and such disagreement is not resolved between them in seven days, the Owner/Agency, desiring the change order work to proceed, may make/or direct the following actions:

(i) As to Contract Sum

Advise the Construction Professional to proceed under a change order for force account of indeterminate amounts.

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(ii) As to Contract Time

Advise the Construction Professional to proceed on the basis that the Design Professional's assessment of the adjustment in the contract time is final and shall be the basis for the change order.

(iii) Other Disagreements

Should the Design Professional disagree with the Construction Professional as to matters other than contract sum or contract time, the dispute shall be reviewed by the Owner/Agency as set forth in *Contract Adjustments and Disputes* of the Section Five, Part Two of the Design-Bid-Build Construction Contract.

(g) Costs Associated with the Change Order

The allowed cost for an approved change order would include all labor cost, including cost of payroll, overtime premiums, and fringe benefits for employees directly employed in the change of the work, all materials and equipment incorporated into the work, and the equipment used in accomplishing the work.

If the equipment used in accomplishing the work is rented expressly for accomplishing the change in the work, the allowable cost shall be the actual rental rate at the time of rental agreement.

Allowable cost for rental equipment shall be limited to the rates submitted and approved during the Pre-Commencement Phase and as described in *Rental Rates and Wage Rates for Change Orde*r in Section Two, Part One of the Design-Bid-Build Construction Contract.

Other allowable costs include the following:

- Cost increase in premiums for Construction Professional's payment bonds and performance bonds
- Applicable rates and consumer taxes
- Any other cost directly attributable to the change in work and approved by the Owner/ Agency, such as engineering cost and similar costs

Costs that are specifically *not allowed* for changes in the work are:

- Cost due to negligence of the Construction Professional, or the Construction Team (subcontractor, suppliers, vendors, or other person for whom the Construction Professional is responsible)
- Home office expenses for payroll cost for the Construction Professional and Construction Team's officers, executives, administrators, accountants, counsel, engineers, timekeepers, estimators, clerks, and other similar administrative personnel that are not directly included in the change in the work but are only providing general administration of the work
- Home office and branch office expenses of Construction Professional and Construction Team's home and branch offices, capital expenses, interest on capital used for the work, and other general overhead expenses of the home office and branch office

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- Wages and benefits of a foreman, if the foreman is concurrently supervising other work at the project site
- Premiums for bonds required of the Construction Team (subcontractor, suppliers, vendors, or other person for whom the Construction Professional is responsible) by the Construction Professional

(h) Subsurface Conditions

Unless the Contract Documents stipulate specific quantities and units of rock or unsuitable soils, the Construction Professional can anticipate that materials below the surface of the ground to be earth and other material that can be removed by power shovel or similar equipment and would not be allowed as a change in the work due to unforeseen conditions.

Should conditions encountered below the surface of the ground be at variance to the number of unit requirements indicated on the Contract Documents (if any), and if the subsurface material is significantly different than what can be removed by a power shovel or similar equipment, the subsurface material shall be classified as Compensable Rock, and would be allowed as a change in the work due to unforeseen conditions.

Absent any agreed-upon unit price established in the Construction Contract, the contract sum and/or time may be adjusted by change order. *Compensable Rock* in Section Three, Part Two of the Design-Bid-Build Construction Contract includes specific definitions and descriptions of the material that classifies the material as non-compensable and compensable rock.

(i) Other Unforeseen Conditions

If unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents, the Construction Professional shall give notice to the Design Professional promptly before conditions are further disturbed, but in no event later than two (2) business days after the first observance of the conditions. The Design Professional shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Construction Professional's cost or time required for performance of any part of the work, the Design Professional may recommend an adjustment by change order to the contract sum or contract time, or both. If the Design Professional determines that the conditions at the site are materially different from those indicated in the Contract Documents and that no change in the terms of the contract is justified, the Design Professional shall so notify the Owner and the Construction Professional in writing, stating the reasons.

B6. Changes in Contract Time

All change orders must state that the contract time and the Material Completion and Occupancy Date either are not changed or are increased or decreased by a specific number of days. The Construction Professional must provide written justification for the extension to both the Design Professional and the Owner.

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The written justification must demonstrate an anticipated actual increase in the time required to complete the work beyond that allowed by the contract (as adjusted) by prior change orders to the contract. No extension to the contract time shall be allowed by the contract as adjusted by prior change orders to the contract.

No extension to the contract time shall be allowed unless the additional or changed work increases the length of the critical path beyond the Material Completion and Occupancy Date. If approved, the increase in time required to complete the work shall be added to the contract time. Conversely, the Owner may decrease, by change order, the contract time when an Owner-requested deletion from the work results in a decrease in the actual time required to complete the work as demonstrable on the Critical Path Method (CPM) Schedule.

B7. Determining the Cost to Owner for Changes

The cost to the Owner of any changes shall be determined in one of the following three ways:

(a) Lump Sum

The change order cost is determined by mutual agreement of a lump sum amount changing the contract sum allowed for completion of the work. The change order shall be substantiated by documentation itemizing the estimated quantities and costs of all labor, materials, and equipment required. The price change shall include the amount allowed for the Construction Professional's overhead and profit.

(b) Unit Price Work

The change order cost is calculated by using unit prices and calculating the number of net units of work in each part of the work that is changed, either as the work progresses or before work on the changes commences, and by then multiplying the calculated number of units by the applicable unit price set forth in the contract or multiplying by a mutually agreed unit price if none was provided in the contract. No additional percentage markup for overhead or profit shall be added to the unit price as this markup is included within the unit prices.

(c) Force Account

The change order cost is accomplished by force account in the event that the Construction Professional and Design Professional cannot agree on the cost of the change order or the cost cannot be reasonably determined prior to beginning the work.

A force account is the establishment by the Owner's encumbrance record of a maximum dollar amount (Stipulated Maximum Sum) beyond which no changed work may be undertaken, subject to amendment for funding all costs of a change order. As the work authorized by the change order progresses, the Construction Professional must provide an accounting of actual costs incurred in accomplishing the work. The accounting must include an annotated copy of the Overall Project Schedule to accurately show the status of the work at the time the change order utilizing a force account is issued, to show the start and finish of the changed work, and to show the status of the work when the changed work is completed.

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Actual costs, except as otherwise agreed to in writing by the Owner, shall not exceed those prevailing for the trades or crafts, material, and equipment in the locality of the project, shall include only those items listed as allowable in the Construction Contract, and shall not include any of the costs listed as not allowable in Section Three, Part Two of the Design-Bid-Build Construction Contract. The Owner shall be permitted, on a daily basis, to verify such records and may require such additional records as are necessary to determine the cost of the change to the work.

The Owner shall prescribe the dollar limit for a force account in writing by authorizing a Stipulated Maximum Sum of money to be committed toward execution of the said change, and the Construction Professional shall have no authority to perform any changes that will cost the Owner in excess of the Stipulated Maximum Sum.

The Stipulated Maximum Sum shall be based on the estimated cost of the work and the Construction Professional's allowance for overhead and profit as set forth in Section Three, Part Two of the Design-Bid-Build Construction Contract, including any time extension and a reasonable contingency. It shall be the sole responsibility of the Construction Professional to apply in writing to the Owner, not to the Design Professional, for an increase in the Stipulated Maximum Sum if the total value of the work is approaching and might exceed the Stipulated Maximum Sum.

Within fourteen days of the conclusion of such work ordered by force account, the Construction Professional and the Owner shall arrive at the total lump sum cost for the change order. Such lump sum cost shall be incorporated into and finalize the change order as a lump sum, and shall reference and close the incumbrance record establishing the force account.

B8. Overhead and Profit

The percentage for overhead and profit to be used in calculating additive changes in the work (not including changes covered by unit prices) shall not exceed the contractual limits for each category listed below. Said contractual limits for overhead and profit shall be applied only on the net cost of the changed work, (i.e., the difference in cost between original and revised work). Please reference the Design-Bid-Build Construction Contract.

(i) Construction Professional

If the Construction Professional does all or part of the changed work with employees that work directly for the Construction Professional, its markup for overhead and profit on the changed work the Construction Professional performs with its employees shall not exceed the contractual limits of the net Allowable Costs, if any. Please reference the Design-Bid-Build Construction Contract.

(ii) Subcontractor

If a subcontractor does all or part of the changed work with employees that work directly for the subcontractor, the subcontractor's markup for overhead and profit on the work the subcontractor performs with its employees shall not exceed the contractual limits of the net allowable costs. Please reference the Design-Bid-Build Construction Contract.

(iii) Construction Professional's Markup on Subcontractor Work

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The Construction Professional's management markup on the subcontractor's net additional allowable expenditures shall not exceed the contractual limits. Please reference the Design-Bid-Build Construction Contract.

(iv) Second and Lower Tier Subcontractor

If a subcontractor at any tier does all or part of the changed work with its own employees, the subcontractor's markup on the subcontractor's work with its own employees shall not exceed the contractual limits of the net allowable cost, if any. The management markup of a subcontractor's work by the Construction Professional and all intervening tiers of subcontractors shall not exceed the contractual limits for the Construction Professional and an additional the contractual limits for a subcontractor, or a total not to exceed contractual limits for the changes to the work. Please reference the Design-Bid-Build Construction Contract.

The above contractual limits shall be applied to the net Allowable Costs, if any, as limited and defined in the Design-Bid-Build Construction Contract. If the net difference between allowable costs and credits to the Owner results in a decrease in the Owner's cost, the amount of credit allowed the Owner shall be the net de- crease without any allowance for overhead profit. All costs that are not specifically allowed in the Design-Bid-Build Construction Contract or disallowed in the Design-Bid-Build Construction Contract shall be considered as overhead and shall be exclusively compensated in the allowances provided for in the above paragraph (See *SCM Chapter 3.5.4 [B8]: Overhead and Profit*).

B9. Time

By execution of the Construction Contract, the Construction Professional has represented to the Owner/Agency that the Construction Professional is experienced in managing construction in accordance with contract requirements and in a timely manner within the stipulated contract time.

Time is of the essence in the contract, and all scheduled completion times are contractual obligations which when not met may be a cause for a claim of breach of contract.

(a) Commencement, Prosecution, and Completion

The Construction Professional is required under this contract (1) to precede within the time specified in the Proceed Order from the Owner/Agency, (2) to prosecute the work with faithfulness and energy, (3) to install the various parts of the work with equal steps shown on the Overall Project Schedule and at the same rate (or better) as shown on the Overall Project Schedule, and (4) to complete the work within the contract time.

In the event that the Construction Professional shall be delinquent in respect to achieving milestone duties established in the Overall Project Schedule, the Construction Professional, within seven days of receipt of a written document of the Owner, shall cause the Construction Team (subcontractor, suppliers, vendors, or others for whom the Construction Professional is responsible) to perform work at an accelerated pace necessary to promptly bring the work into compliance with the Overall Project Schedule. The Construction Professional can have no claim against the Owner/Agency for the cost for accelerating the work to bring the work into compliance with the approved Overall Project Schedule.

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(b) Overall Project Schedule (Construction Progress Schedule)

During the Pre-Commencement Phase of the work (See *SCM Subchapter 3.5.3: Pre-Commencement* and the Design-Bid-Build Construction Contract), the Construction Professional must submit a Construction Progress Schedule showing the duties of commencement and the completion of the work required by the Contract Documents for review by the Design Professional and approval by the Owner/Agency.

Upon recommendation by the Design Professional and approval of the Owner/Agency, the Construction Progress Schedule shall become the Overall Project Schedule, and becomes a part of the Construction Contract.

(c) Monthly Schedule Updates

With the monthly pay request, the Construction Professional must submit an Overall Project Schedule update to show completed activities and any changes in sequencing, activities durations, and completion of milestone dates.

Failure by the Construction Professional to maintain a rate of progress consistent with the milestone dates in the Overall Project Schedule may be grounds to withhold, in whole or in part, any request for payment as may be necessary to protect the Owner/Agency from loss due to failure of the Construction Professional to prosecute the work in accordance with the Overall Project Schedule.

(d) Damages for Delay, Extensions of Time

As a general rule, the Construction Professional is not entitled to any damages for delay or to any other reimbursement as a cost of the work, or to an increase in the contract sum for direct, indirect, impact, or disruption damages arising because of delay or other hindrance of any kind whatsoever except as described below as *Exceptions to General Rule for Construction Delay* and as permitted in the Design-Bid-Build Construction Contract.

Extensions of the contract time shall be the Construction Professional's sole remedy for delays that are not the fault of the Construction Professional and are included in the three following sections.

(i) Force Majeure

If in the time between the Proceed Order and the Material Completion and Oc- cupancy Date, the Construction Professional is unable to perform or is delayed in the performance of any of the terms and provisions of this contract as a result of (1) governmental preemption of materials in connection with a national emergency declared by the President of the United States; (2) riot, insurrection, acts of terror or terrorism or other civil disorder affecting performance of the work; or (3) earth- quakes, or unusual and extreme weather conditions constituting Acts of God, then, and in any such event, such inability or delay shall be excused, and the time for completing the affected portions of the project (and the entire project if applicable) shall be extended for such reasonable period of time as the delay has affected the performance of the work hereunder.

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The Construction Professional shall take all reasonable actions to minimize the delay caused by any of the above factors, and shall notify the Owner in writing with a copy to the Design Professional of any events allowing for excuse or delay not later than seven days after the Construction Professional first becomes aware of the event, or should have become aware of the event; otherwise, the Construction Professional will be deemed to have waived the excuse or delay.

(ii) Abnormal Weather

Extensions of time will be granted for abnormal inclement conditions that delay the critical path of the progress of the work.

Abnormal weather delay is defined as days lost to weather conditions either (1) in excess of days specified in the Supplementary General Conditions, or (2) if not defined in the Supplementary General Conditions, as days in excess of a local historic average prevailing at the site recorded by the National Oceanic and Atmospheric Administration (NOAA) for the 120 months immediately preceding the date specified in the Proceed Order.

Not later then ten days after the first occurrence of the event giving rise to the claim or with respect to claims for extensions of time as a result of abnormal weather, and not later than ten days after the end of each calendar month thereafter, the Construction Professional shall file a claim with the Design Professional with a copy to the Owner/Agency. By not later than fifteen days from the receipt of the claim, the Design Professional shall render a decision concerning the allowance of an extension of time and shall report the decision to both the Construction Professional and the Owner.

If additional time is allowed, the Design Professional will prepare a change order increasing the contract time for execution by both the Construction Professional and Owner/Agency.

(e) Exceptions to General Rule: Compensation for Delay

Note: *The following specific exceptions exist in a limited number of State of Georgia Design-Bid-Build Construction Professional Contracts. The following discussion relates only to those contracts and shall not apply to all contracts.*

The Construction Professional may be entitled to an extension of time or and adjustment to the contract sum for a delay caused by the following hindrances or delays of the Owner/Agency, Design Professional, or separate Construction Professional. This specific exception does not exist in all State of Georgia Design-Bid-Build Construction Professional contracts.

1. If the Construction Professional is delayed in the progress of the work between the proceed order and the Material Completion and Occupancy Date, as amended, by an act or neglect of the Owner, Owner's employees, Design Professional, or separate Construction Professionals employed by the Owner.

2. Any claim by Construction Professional for a change in the Material Completion and Occupancy Date due to delay of responses to submittals may be made during the time while the failure of the Design Professional to act or perform continues, or within seven days after such failure to act or perform has been cured. If no submittal schedule or agreement as described in *SCM Subchapter 3.5.3: Pre-Commencement* and as required in the Design-Bid-Build Construction Contract is agreed upon, then a claim for delay will be allowed only after the Design Professional has been allowed fourteen days to take action.

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3. In the event of delay as described in the two previous paragraphs, the contract time may be extended by change order for such reasonable time as the Design Professional and the Owner/Agency may determine providing, however, that (1) such delays extend the Overall Project Schedule's critical path; (2) the Construction Professional has taken all reasonable actions to mitigate the effects of the delays on the work; (3) the fault or negligence of the Construction Professional or the Construction Team (subcontractor, suppliers, vendors, or other person for whom the Construction Professional is responsible) did not materially contribute to such causes; and (4) the Construction Professional shall have notified Owner/Agency of the cause or causes of such delay within fourteen days from the date on which the Construction Professional first becomes aware of such delay.

(f) Owner-Requested Changes

If the Owner requests changes in the Contract Documents that would materially affect the completion of the work by lengthening the critical path of the Overall Project Schedule, the Design Professional shall determine the appropriate number of days and thereby extend by change order the Material Completion and Occupancy Date.

(g) Other Change Orders (Not the Fault of the Construction Professional)

For change orders involving the following situations that would materially affect the completion of the work by lengthening the critical path of the Construction Progress Schedule, the Design

Professional shall determine the appropriate number of days and thereby extend the Material Completion and Occupancy Date.

- Changes due to Subsurface or Other Unforeseen Conditions in the Design-Bid-Build Construction Contract
- Changes for Compensable Rock in the Design-Bid-Build Construction Contract
- Changes deleting work in the Design-Bid-Build Construction Contract

(h) Submission of Claims for Compensation for Delay and Extension of Time

(i) Time for Submission

Except as specified in the following paragraph, any claim by the Construction Professional for a change in the contract sum or the Material Completion and Occupancy Date shall be made within fourteen days of the day on which the Construction Professional become aware of the event on which the claim is based or, if the Contract Documents specify a shorter or longer period with respect to such event, within the period specified by the Contract Documents.

(ii) Delay Claim Must Be In Writing

Any claim to extend the contract sum or Material Completion and Occupancy Date must satisfy the following conditions:

- The claim must be in writing.
- The claim must set forth in detail the basis for the claim and the number of days of delay claimed.
- The claim must be correlated with the approved Overall Project Schedule.
- The claim must be executed by the Construction Professional and delivered to the Design Professional and the Owner.
- The claim must be reviewed and an appropriate time assessed by the Design Professional.

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(iii) When Delay Claim Deemed Waived

Any claim to extend the contract sum or Material Completion and Occupancy Date not made in writing to Owner within the above time period shall be deemed waived and shall not thereafter be valid. In the case of a continuing delay as a result of a single event, only one claim submission is necessary.

(iv) Design Professional to Decide

The contract sum or the Material Completion and Occupancy Date may be extended for such reasonable time as the Design Professional may decide, and the Overall Project Schedule shall then be updated.

(i) Recovery Schedules

(i) Recovery of Schedule Delays

If the Design Professional determines that the project is one week or more behind schedule according to the approved Overall Project Schedule, the Design Professional shall so notify the Construction Professional in writing.

Within seven days of the date of the Design Professional's notice, the Construction Professional shall deliver to the Design Professional and Owner a written plan explaining how the Construction Professional intends to bring the project back on schedule.

The Construction Professional's plan must provide sufficient detail to allow Design Professional and Owner to determine the plan's feasibility.

(ii) Recovery of Schedule Delays During Last Sixty Days of Contract Time

At any time during the last sixty days of the contract time that the Design Professional finds that the Construction Professional is behind schedule according to the contract time, as amended, the Design Professional shall notify the Construction Professional in writing. Within seven days of the date of the Design Professional's notice, the Construction Professional shall prepare and deliver to the Design Professional and Owner a written plan explaining how the Construction Professional intends to bring the project back on schedule. The Construction Professional's plan must provide sufficient detail to allow the Design Professional and Owner to determine the proposal's feasibility.

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B10. Correcting the Work, Inspections, Covering and Uncovering the Work

(a) Access to the Work

The Design Professional, the Owner/Agency and its representatives shall have access at all times to the work wherever it is in preparation or progress, and the Construction Professional shall provide progress facilities for such access and for inspection.

(b) Notice of Non-Compliant Work

The Notice of Non-Compliant Work shall be in writing with the date and signature of the Design Professional, and shall be addressed to the Construction Professional with a copy to the Owner/ Agency. The following three elements shall be included:

(i) Description of the Non-Compliant Work

Non-compliant work is identified as the following:

- Work that has been omitted
- Work that is unexecuted as of the date of the Notice of Non-Compliant Work, the time for its incorporation into the work as planned in the Overall Project Schedule having expired

- Work that has not been executed in accordance with the methods and materials designated in the Contract Documents

(ii) Contract References

Contract references include citation of the provision or provisions of the Contract Documents that specify the work to be executed.

(iii) Time for Compliance

Time for compliance is the definition of a reasonable space of time within which the Construction Professional shall have made good the deficiency.

(c) Correcting the Work

(i) Removal and Making Good of Non-Compliant Work

The Construction Professional shall remove from the site all work determined by the Design Professional as failing to conform to the contract within the space of time designated in the notice of non-compliant work, whether incorporated in the work or not, and the Construction Professional shall promptly replace and re-execute the work in accordance with the contract and without expense to the Owner and shall bear the expense of making good all work of other Construction Professionals destroyed by such removal or replacement.

The Construction Professional shall supply any omitted work and perform all unexecuted work within the space of time fixed by the Design Professional in the notice of non-compliant work.

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(ii) Remedy of the Owner for Breach of Notice of Non-Compliant Work

(A) Failure to Make Good a Deficiency

If the Construction Professional does not make good a deficiency within a reasonable space of time fixed in a Notice of Non-Complaint Work, the Owner/Agency, after providing written notice as required by the contract to the Construction Professional, may do any of the following:

- Remove the non-compliant work and store it at the expense of the Construction Professional. If the Construction Professional does not pay the expenses of such removal and storage within ten days after receipt of written demand of the Owner, the Owner may, upon three days notice in writing to the Construction Professional, sell such materials at private sale or at auction and shall account for the net proceeds thereof after deducting all proper costs incurred by the Owner/Agency.

- Supply omitted work, perform unexecuted work, or replace and re-execute work not done in accordance with the methods and materials designated in the Contract Documents, and deduct the cost thereof from any payment then or thereafter due the Construction Professional.

(B) Notice of Correction from Construction Professional

The Construction Professional shall give prompt notice in writing to the Design Professional, with copy to the Owner, upon completion of the correction of the non-compliant work.

In the absence of such notice, it shall be and is presumed under the contract that there has been no correction, supplying remedy or performance of unexecuted work.

(d) Inspections

The Design Professional and its Design Team (architects, engineers, basic engineering sub-consultants, and other consultants required to properly design the project and administer the construction) shall have access to the project sites to observe the work and to approve, accept, and comment to covering of and certify work for payment.

(i) Notice of Readiness for Inspection to Design Professional from Construction Professional Prior to Covering Work

As required by the Contract Documents, if the Design Professional's instructions (either in the specifications or issued later in writing), laws, ordinances, or any public authority, require any work to be specially tested or approved by the Design Professional, the Construction Professional shall give the Design Professional timely notice in writing of its readiness for inspection.

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If the inspection is by any authority other than the Design Professional, the Construction Professional shall give timely notice of the date fixed for such inspection.

Inspections by the Design Professional shall be made promptly in accordance with the provisions of his contract.

(ii) Fire Marshal Inspections

The State Fire Marshal may make inspections at any time. It shall be the responsibility of the Construction Professional to request an inspection at 80 percent completion and at 100 percent completion and to give notice when all items on the 100 percent inspection report have been completed. Requests shall be in writing with a copy to the Owner/Agency and Design Professional.

(iii) False Start

In the event the Construction Professional shall have issued notice of readiness prematurely, its action shall be deemed to be a *false start*. The Construction Professional shall be liable for the damage resulting from the aforesaid false start, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced by the aforesaid false start.

(iv) Certificate of Occupancy

The Construction Professional's obligation under the contract is to install the work in accordance with the Contract Documents, obtain the Certificate of Occupancy from the State

Fire Marshal or its deputy, and forward it to the Design Professional as a part of the final closeout procedures. The Design Professional's obligation is to design the work to comply with the applicable codes and to qualify for a Certificate of Occupancy.

(e) Covering and Uncovering Work

(i) Re-Examination or Re-Testing of Work Covered Pursuant to Consent of Design Professional

Re-examination or re-testing of questioned work previously covered pursuant to consent of the Design Professional may be ordered by the Design Professional. If so ordered, the work must be uncovered by the Construction Professional.

The Owner shall pay the cost of re-examination and replacement, or of re-testing if such work is found in accordance with the Contract Documents. The Construction Professional shall pay such cost if such work is found not in accordance with the Contract Documents unless the Construction Professional can show that a separate Construction Professional caused the defect in the work. In that event, the Design Professional shall pay such cost.

(ii) Re-examination or Re-testing of Work Covered Without Consent of Design Professional

If any work should be covered without approval or consent of the Design Professional or contrary to any provision of the Contract Documents, such work must be uncovered for examination by the Design Professional at the Construction Professional's expense. The Construction Professional shall be liable for the costs resulting from the aforesaid uncovering, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced thereby.

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B11. Subcontractors, Trade Contractors, and Suppliers

During the Pre-Commencement Phase but no later than fourteen days after the effective date of the Construction Contract, the Construction Professional shall submit in writing a list of the names of subcontractors and major material and equipment suppliers that the Construction Professional intends to employ on the work to the Design Professional. The list of subcontractors and suppliers is not submitted for approval, but is for the purpose of establishing the following:

1. The Construction Professional shall establish which trade and portions of the work are to be performed under subcontract.

2. The Construction Professional shall supply the names of the parties selected to perform work by subcontract, the aforesaid selection being a matter lying solely within the discretion of the Construction Professional.

3. The Construction Professional shall identify each minority-owned and each female-owned subcontractor or supplier performing work on or supplying material to the project.

4. By not later than the tenth day of the month following the end of each quarter, the Construction Professional shall submit to the Owner a list of all minority and female-owned subcontractors or suppliers performing work on or supplying material to the project and the amount paid to each for that quarter.

By submitting the list of subcontractors and suppliers**,** the Construction Professional represents that the subcontractors and suppliers selected by it are reputable, skilled, reliable, competent, and qualified in the trade or field in which they are to perform on the project and thoroughly familiar with the codes and laws applicable to their work.

The Owner/Agency and the Design Professional's review of the subcontractors and suppliers does not indicate or insinuate approval of any subcontractor or suppliers.

(a) Construction Professional Responsible For Acts and Omissions

Construction professionals are responsible for the acts and omissions of their subcontractors, suppliers, and employees, and further of all persons directly or indirectly employed by them in the same manner, as the Construction Professional is responsible for the acts and omissions of employees and persons directly employed by the Construction Professional.

The subcontracting of work does not relieve the Construction Professional of the responsibility for the proper execution of the work and for compliance with all requirements of the Contract Documents.

(b) No Contract Between Owner and Any Subcontractor, Supplier or Employee

Nothing contained in the Contract Documents shall create any contractual relation between the Owner/Agency and any subcontractor, supplier, or employees of the Construction Professional or its subcontractors.

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(c) Relationship of Construction Professional With Subcontractor and Suppliers

The Construction Professional shall bind every subcontractor and supplier to the terms of the Contract Documents insofar as the terms are applicable to their work. The Construction Professional will be bound to the subcontractor and supplier by all the obligations that the Owner/Agency owes to the Construction Professional under the Contract Documents.

The Construction Professional also agrees to require that subcontractors and suppliers agree to be bound by the terms of the Contract Documents and to assume toward the Construction Professional all the obligations and responsibilities that the Construction Professional assumes toward the Owner.

(d) Owner Not Obligated to Any Subcontractor or Supplier

There are no current or remedied obligation on the part of the Owner to pay to or to see to the payment of any sums to any subcontractor, subordinate contractor, supplier, laborer, employee, or person(s) supplying labor, materials, machinery, or equipment to the project.

B12. Compensation

The Owner/Agency will make periodical progress payments to the Construction Professional for all work that has been performed and materials and equipment that have been supplied in full accordance with the terms and conditions of the Contract Documents.

(a) Application For Payment

The Construction Professional shall periodically (usually monthly) submit to the Design Professional an Application for Payment or the form provided in Section 7 of the Design-Bid-Build Construction Contract. Each Application for Payment shall be submitted at least ten days before each payment is due. Application for payment shall be broken down by CSI Category and for the Final Certification of Cost by CSI description and Capital Asset Category. Reference Section 7 Forms: *Application for Payment* and *Final Certification of Cost* in the Design-Bid-Build Construction Contract.

Prior to the first Application for Payment, and as previously developed in the Pre-Commencement Phase, the Construction Professional shall submit to the Design Professional a schedule of values of the various parts of the work including quantities, aggregating the total sum of the contract, divided in the same manner set forth in the Application For Payment Form in Section 7 of the Design-Bid-Build Construction Contract, showing the Construction Professional's right to payment claimed and so arranged and itemized to meet the approval of the Design Professional and supported by documentation as to its correctness.

The Application for Payment shall attach backup material including, but not limited to, receipts or other vouchers, showing the Construction Professional's payments for material and labor, including payments previously made to subcontractors.

(b) Material Stored on Site

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The Application for Payment may include a request for payment for material stored on site but not incorporated in the work. If the Application for Payment includes materials that have been delivered and suitably stored at the site (i.e., protected from weather, theft, damage from construction activities, and similar harm as required by the Contract Documents), but not yet incorporated into the work, approval for payment for stored materials will be conditional upon submission of bills of sale with the Construction Professional's Application for Payment or such other procedure or documentation as will establish the Owner/Agency's title to such material and adequately protect the Owner/Agency's interest in the stored material.

The Construction Professional remains responsible for the existence, security, protection, and if necessary, replacement of the material until execution of the Design Professional's Certificate of Final Completion.

(c) Material Stored Off-Site

As a general policy, the Owner/Agency will not pay for materials stored off site. There have been exceptions to this rule where the project site may be small, congested, and unsuitable to store materials or where off-site storage may better protect and secure the materials. Approval for payment of material off site requires the approval of the Director of the Construction Division of the Georgia State Financing and Investment Commission.

(d) Retainage

To account for possible unforeseen deficiencies and lack of performance of installed materials and equipment, retainage will be withheld from each periodic payment to the Construction Professional per contractual amounts of the sum of the total amount earned for work-in-place under the original contract, total amount earned for work-in-place for change orders, and value of material stored at the site.

After half of the contract sum, including change orders, becomes due, the Construction Professional may request and upon approval of the Design Professional, the contractually defined sum being held as retainage will be converted to a lump sum and held by the Owner until the Design Professional issues a Certificate of Material Completion. No further retainage from payments will be withheld from payments.

The conversion of previously withheld retainage to a lump sum and elimination of retainage or future payments can occur if the following three conditions are met:

1. The project is on or ahead of the Overall Project Schedule.
2. There are no breaches of Notices of Non-Complaint Work.
3. There is no delinquency in the completion of work and filing of the final breakdown and accounting pursuant to any change orders utilizing a force account.

The Owner/Agency may reinstate the retainage on any subsequent Applications for Payment due to be paid if one or more of the following events occur:

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1. The percentage of work completed falls behind the percentage required by the Overall Project Schedule by as much as 5 percent.
2. The Construction Professional breaches a Notice of Non-Compliant Work.
3. The Construction Professional becomes delinquent in filing the final breakdown and accounting payment to any change order utilizing force account.
4. The Construction Professional commits any breach of the contract.

The Design Professional should give the Construction Professional written notice of the reinstatement of the retainage on the Application for Payment.

The Owner/Agency, upon the Design Professional's recommendation, may reconvert the retainage to a lump sum if the Construction Professional subsequently satisfies the following three conditions:

1. Recovers all lost time, and gets the work back on the Overall Project Schedule.
2. Remedies all breaches of Notice of Non-Complaint Work.
3. Supplies a proper breakdown and accounting pursuant to any change order utilizing a force account.

All retainage sums withheld while either or all of the events existed may be again converted to a lump sum to be held until the Design Professional issues the Certificate of Material Completion.

(e) Subcontractor's Retainage Release

Upon the request of the Construction Professional and at the Owner/Agency's discretion, an amount equal to the retainage being withheld for a particular contractor may be separately released from the Construction Professional's retainage held by the Owner/Agency, as the subcontractor completes its work.

The Construction Professional must file an application for release of a subcontractor's retainage. The application for release of subcontractor's retainage shall contain a release of all claims by the subcontractor and shall bear the original certificates and signatures of the subcontractor, the Construction Professional, and the Design Professional that the subcontractor's work has been fully performed and that the sum for which payment is requested is due by the Construction Professional to the subcontractor.

Checks releasing a subcontractor's retainage shall be made payable to the Construction Professional, the Construction Professional's surety, and the subcontractor, and shall be mailed to the Construction Professional's surety.

The Owner/Agency's willingness to release the retainage of a subcontractor that has completed its work does not create any contractual relationship between the Owner/Agency and the subcontractor, and does not create any duty of the Owner/Agency to pay any subcontractor.

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(f) Processing the Application for Payment

Upon receipt of the Application for Payment from the Construction Professional, the Owner's representative (Construction Compliance Specialist, or CCS) will review the Application for Payment prepared and executed by the Construction Professional, and if the Owner's representative (CCS) concurs, the Design Professional shall execute a certificate on the face of the Application for Payment as to its accuracy.

The Design Professional shall visit the project site after the Construction Professional and Owner's representative (CCS) have agreed upon and forwarded the Application for Payment.

The Design Professional shall conduct such inspections and reviews as are necessary to make a decision as to the accuracy of the Application for Payment. If the Construction Professional and Owner's representative (CCS) cannot agree on the appropriateness of the Application for Payment, the Design Professional shall make a decision upon determining the appropriateness of the Application for Payment. After making such adjustments as necessary, the Design Professional shall execute the certificate on the Application for Payment and forward it to the Owner/Agency for payment.

The Design Professional shall have seven days after receipt of the Application for Payment to issue the Design Professional's Certificate of the Application for Payment for such amounts as the Design Professional decides to be properly due, or state in writing its reason for withholding any sums in its certificate. The Owner/Agency shall make payment within ten days after receipt of the Certification of the Application for Payment by the Design Professional.

(g) Effect of Design Professional's Certificate on an Application for Payment

No certificate issued by the Design Professional nor payment made to the Construction Professional by the Owner/Agency for partial or entire use or occupancy of the work by the Owner/Agency shall be an acceptance of any work or material not in accordance with the Contract Documents.

(h) Payment Due Dates and Interest

Should the Owner fail to pay a proper invoice within thirty calendar days of receipt, the Construction Professional shall notify the Owner in writing by certified or statutory mail.

If the Owner fails to pay within five business days of receipt of the notice, the Construction Professional may receive, in addition to the sum named in the proper invoice, interest thereon which shall be according to the contract on the unpaid and due balances.

(i) Payments for Change Order work

Payments will not be made for any changes in the work until a change order has been executed.

(j) Payments Withheld or Nullified

The Design Professional or the Owner/Agency may withhold or, on account of subsequently discovered evidence, nullify the whole or a part of any Certificate of Application for Payment to such extent as may be necessary to protect the Owner from loss because of the following conditions:

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- Defective work not remedied
- Claims or liens filed
- Failure of the Construction Professional to make payments properly to a subcontractor for material or labor
- Reasonable doubt that the Construction Professional can complete the work for the remaining unpaid balance
- Damage to a separate Construction Professional, to the Owner, or a third party
- Failure to maintain a rate of progress consistent with the Overall Project Schedule
- Failure to supply enough skilled workers or proper materials
- Court-ordered retention
- State Tax Forms not on file
- Breach of the contract

When the conditions above are remedied, withheld payments may be made to the Construction Professional.

B13. Contract Adjustments, Disputes, and Termination

(a) Dispute Resolution

It is very likely at some point during the construction of the project that the Construction Professional will make claims for additional costs or time. It is also very likely that the Design Professional and Owner/Agency will reject some of these claims and that the Construction Professional will protest that decision. The contract provides specific tools for dispute resolution; however, it specifically excludes the use of arbitration. Basically, arbitration is a binding alternative to litigation. This section of the manual is intended to help the Owner/Agency find ways to resolve these claims. Assuming that the team participated in a formal partnering process, any specific procedures established as a result of partnering should be reviewed and implemented prior to more formal resolution procedures discussed below.

(i) Negotiations

After the Design Professional has rejected a general claim, the Construction Professional is afforded thirty days to protest the decision by submitting a *Statement of Claim.* Per the contract, all parties shall first endeavor to resolve the claims through discussions.

In other words, the team should meet and the Construction Professional's project staff should present the merits of the claim, followed by the Design Professional's justification for rejection.

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The Owner (or Program Manager if applicable) shall attempt to be impartial and resolve the differences. It is advisable that the senior administrators not attend these meetings. Further, it is advisable that these meetings take place as soon as possible after the initial rejection (possibly at the time of the next scheduled progress meeting).

(ii) Dispute Resolution Board

Ideally, any partnering sessions (if applicable) established a *Dispute Resolution Board* consisting of the senior designates or administrators from the Owner/Agency, Design Professional, and Construction Professional. If the project did not implement partnering, and/or no such board exists, the team should consider the establishment of one. Often, this board includes a neutral member to help facilitate the meetings.

This member is typically from the industry, but is not closely associated with the Owner/Agency, Design Professional, or Construction Professional. This position can be a paid position (such as a mediator, attorney, or similar paid position) or strictly a volunteer.

In the event that the project staff cannot promptly resolve the dispute, the dispute shall be referred to the Resolution Board, which shall meet and attempt to resolve the claim.

It is advisable that the project staff (that failed to resolve the dispute) not be permitted to attend this meeting. In this manner, the board is more likely to objectively resolve the issues without being biased by possible emotions or degraded relationships of the project team.

On larger or contentious projects, it might be advisable for this group to schedule monthly meetings to resolve any such disputes, and/or critical issues that occurred during the preceding month, even if no such claims exist. In this fashion, the dynamics are such that the project team often resolves issues prior to next scheduled meeting of the Dispute Resolution Board.

(iii) Mediation

If the Dispute Resolution Board is unable to resolve the claim, the parties can elect to submit the dispute to mediation. Mediation is a more formal process of resolving disputes involving one or more neutral mediators who facilitate the process. Unlike litigation, this process does not necessarily result in a decision as to which party was right or wrong.

Mediation is more often a process of negotiations whereby the mediator(s) try to resolve the differences, often with both parties having to yield. Although mediation is not binding, it is a very effective way of resolving a dispute short of litigation. Litigation is always much more costly and time consuming, and therefore mediation should always be encouraged prior to litigation.

(b) Termination

Caution: Termination is a serious action and should only be contemplated after thorough consultation with senior administrators, attorneys, and any other agencies or consultants who might facilitate consideration of all other options, as well as help formulate a recovery plan. Termination is likely to cause a very significant cost and schedule impact to the project, while resulting in protracted litigation with the Construction Professional.

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The contract allows for three basic means of termination of the contract:

1. **Termination for convenience by both the Owner and Construction Professional:** *Termination For Convenience* means that the Construction Professional did nothing wrong to give reason for the termination. It may simply be that the project is no longer feasible, and the Owner may elect to forego the construction.

2. **Termination for cause by the Owner:** *Termination For Cause* means that the Construction Professional did something that gave the Owner reason to terminate the contract.

3. **Termination by the Construction Professional for the event of non-payment or suspension of the project:** The Construction Professional also has some specific rights to terminate the contract in the event of non-payment or suspension of the project.

This section of the manual is intended to assist the Owner with tools and considerations in the event that termination is necessary.

(i) Conditions of Termination

The following section expands on the three conditions for termination by giving considerations and examples of each condition with scenarios that serve to highlight the issues and questions involved when the possibility of termination exists. The sections end with a Tools and Outside Assistance section that suggests remedies for these conditions:

(A) Condition One: Termination for Convenience

Considerations: After completing a significant portion of the design, or even after beginning construction, the Owner/Agency has the option to cancel the construction if the project is no longer feasible. Example scenarios along with corresponding considerations are given below:

Example One

The Government may simply no longer need the project. This could be a result of major programmatic changes, new priorities, restructuring or elimination of departments or groups, or similar reasons.

If the project is in the process of being designed, it is very easy to terminate contracts without any significant issues; however, as a more difficult example, if this decision to terminate is made at about the mid-point in construction, the Owner/Agency needs a good post-termination or recovery plan. What does the Owner plan to do with the unfinished building? Is it going to be a "white elephant"? The Owner/Agency will need to plan to abandon the project, demolish it, or complete it and/or retrofit it to satisfy another purpose.

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Further, the Owner/Agency would need to consider the cost of termination. In other words, the Owner would owe the Design Professional and Construction Professional for the value of all work to date including stored materials and their cost associated with the termination.

Example Two

The project might be too expensive to build. Prior to commencement, it is possible that the Construction Professional's construction costs significantly exceed the available funds, therefore making the project no longer feasible. Under this scenario, the impact of the termination is not as great since the Owner/Agency would basically pay for the design (or portion thereof), plus the Construction Professional's nominal expenses allowed under the terms of the contract.

Example Three

As an extension of the above example, a more cumbersome scenario would be if construction had begun and the cost overruns occurred during the construction. This might be caused due to unforeseen conditions (such as rock removal, relocation of

unknown utilities, or hazardous material abatement) that required large amounts of the allocated project funds. The termination of a project at this stage would be more similar to the first example above, forcing the Owner/Agency to create a plan to deal with an unfinished building.

Tools and Outside Assistance: The State of Georgia has much to offer in the way of internal and external resources. There are most likely very good people in the system that can help and share invaluable lessons that were learned.

(B) Condition Two: Termination for Cause

Considerations: Termination for Cause basically means that the Construction Professional is being fired because of a contractual default that it did not satisfy. *Again, this action shall not be taken without serious consideration and consultation with senior administrators, attorneys, the Design Professional, Program Manager (if applicable), and possibly other experts in the industry. Termination will most likely result in a costly and time consuming litigation with the Construction Professional. Likewise, the cost and time to complete the unfinished project will likely increase (sometimes significantly).*

Outlined in the contract are specific examples of when the Owner/Agency has a right to terminate the contract. However, some scenarios along with corresponding considerations are given below:

Example One

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The work may be done correctly, but the Construction Professional is significantly behind schedule and is not properly staffing the project with a sufficient number of skilled employees.

In addition, despite repeated warnings to the Construction Professional's site staff, the Construction Professional has taken no action to correct the problem. In this scenario, the Owner/Agency may be justified in terminating the contract; however, the Owner/Agency should first have conversations with the Construction Professional's senior administrators (home office) as well as their bonding company. Frequently, this will correct the problem. If termination still seems like the best option, the Owner should consult with attorneys to make sure that proper notifications have been made (including notifications of default).

The Owner/Agency should also make certain that there were no excusable delays (caused by events or parties beyond the Construction Professional's control). Lastly, the Owner should evaluate whether or not the recovery plan (probably involving a replacement Construction Professional) will result in a delivery any sooner than the late completion anticipated by the Construction Professional.

Example Two

The Construction Professional has repeatedly failed to pay its subcontractors and other vendors. In addition, the pace of the project seems to be slowing down as fewer resources are committed to the effort. There are rumors that the Construction Professional is having financial troubles and could be going bankrupt. In this scenario, the Owner/Agency

requires a quick, clear picture of the Construction Professional's financial health before taking any action. This investigation might include contact with the Construction Professional's bonding company, which is probably already keenly aware of such problems, if true.

The bonding company might not be totally forthcoming; therefore, the Owner/Agency should also get a credit report (such as that by Dunn & Bradstreet). The Owner/Agency should also investigate the payment history with the subcontractors and verify whether or not proper payments have been made.

Assuming this investigation does indicate probable bankruptcy, the Owner should seek appropriate legal advice prior to a declaration of default. For example, the actual termination could cause insolvency of the Construction Professional that had financial troubles (but was not yet bankrupt).

Example Three

In the third scenario, the project is in disarray. While the Construction Professional may or may not be on schedule, the Design Professional has identified much defective work and has issued many condemnation orders. The Construction Professional, on the other hand, has issued hundreds of Requests for Information (RFIs) and alleges a deficient design.

The Construction Professional alleges a lack of leadership on the part of the Owner/Agency to resolve these issues resulting in the Construction Professional's loss of time and money. The relationships are contentious between all parties and the Design Professional demands that the Owner terminate the Construction Professional. This is the worst case scenario, and probably all parties share the blame. In the event that the Construction Professional is terminated, the action will almost certainly initiate a long, protracted litigation. The project time and cost will most likely be seriously impacted. Short of termination and litigation, drastic action must be taken. The Owner must be of the mindset to overcome the internal dynamic to solve this problem with existing staff. The Owner must seek outside help and possibly force large staffing changes on part of all parties so that a fresh team can resolve the differences and complete the project.

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Example Four

Another scenario might be that the Construction Professional has installed the wrong door hardware. As a result, the Design Professional promptly issues a Notice of Non-Compliant Work. Despite the nominal expense in making the correction, the Construction Professional has failed to correct the work within thirty (30) days, and the Owner declares the Construction Professional in default of the contract as allowed under the terms of the contract. Although technically allowed under the contract, the Owner would not be exercising good judgment in terminating the contract. The Construction Professional would almost certainly initiate litigation, and the cost and delivery date of the project would be seriously impacted. In this case, the Owner/Agency should find other means to motivate the Construction Professional to correct the deficiencies.

Tools and Outside Assistance: Prior to taking any action, consultation between the Owner/Agency and its legal advisors would be prudent. Prior to termination, the contact requires that the Owner issue a ten (10) day written notice of the Owner's intent to declare default to the Construction Professional and their bonding company (surety). The Construction Professional is then allowed to attempt to cure the default (prior to termination) in this ten-day period

The likely internal dynamic of an Owner's staff faced with a troubled project is to attempt to solve the problem without seeking outside help. They simply hope that things will somehow work out.

The senior administrators should endeavor to recognize such situations and overcome this dynamic by seeking as much outside help as may be required. The State of Georgia has much to offer in the way of internal and external resources. As bad as a project might appear, most likely there has been one in the past that has overcome even tougher challenges. Consequently, there are very good people in the system who can help and share invaluable lessons that were learned.

(C) Condition Three: Construction Professional's Right to Terminate

Considerations: The Construction Professional has two conditions that could give rise to a right to terminate the contract. Reference the Design-Bid-Build Construction Contract for a complete understanding of these terms and conditions):

Example One

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Under specific conditions, the Construction Professional can terminate the contract after seven days written notice if work on the project is stopped for more than thirty days.

Example Two

If the Owner/Agency fails to pay the Construction Professional, the Construction Professional according to the contract terms can provide a thirty (30) day notice of intent to terminate the contract due to non-payment. If the Owner fails to pay the Construction Professional before the expiration of this period, the contract can be terminated. This is not likely to happen; the Owner should be aware that the Design Professional controls the approval of the Construction Professional's payment application. The Design Professional's failure to provide timely approval could create a late payment from the Owner.

Tools and Outside Assistance: The State of Georgia has much to offer in the way of internal and external resources. There are very good people in the system that can help and share invaluable lessons that were learned.

SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.6: Construction Management



A. FORWARD

The Construction Management (CM) project delivery method (utilizing a General Contractor or other Construction Professional as the Construction Manager/General Contractor [CM/GC]) has evolved over the past ten years in response to an effort to find more effective alternatives to the Design-Bid-Build construction delivery method. The CM/GC method was developed to better control project time and cost, thus avoiding contract disputes.

The CM/GC process is a sequence consisting of five major tasks. Some tasks are non-linear and run concurrent with other tasks.

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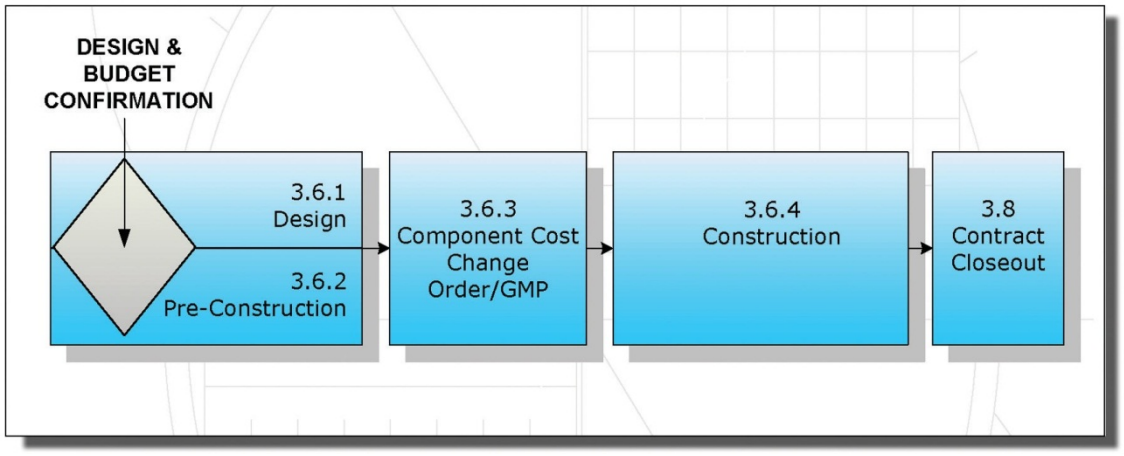


Figure 56: The CM/GC Sequence

The first four tasks are described in *SCM Subchapter 3.6.1: Design*, *SCM Subchapter 3.6.2: Pre- Construction*, *SCM Subchapter 3.6.3: Component Change Order/GMP* and *SCM Subchapter 3.6.4: Construction*. The final task is described in *SCM Chapter 3.8: Contract Closeout* of the *State Construction Manual.*

Because the CM/GC delivery process allows concurrent design and construction activities, the Total Project Schedule may be reduced because construction may begin on early award packages, such as rough grading, site work, foundations, structural steel, and similar packages, prior to completion of the 100 Percent Contract Documents. The Owner/Agency's interests are protected because the CM/GC is providing these construction services under a prearranged Guaranteed Maximum Price (GMP).

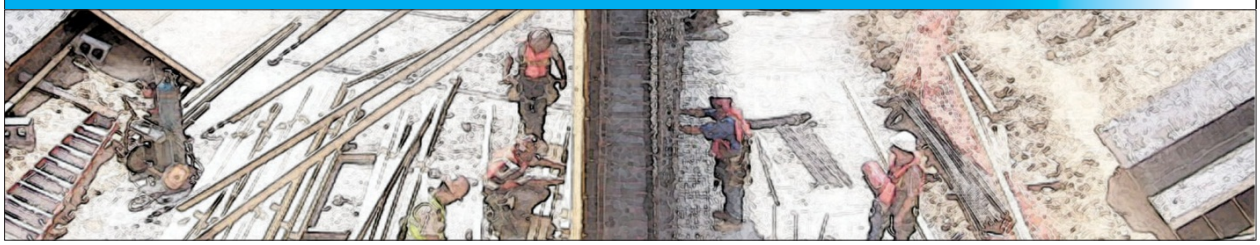
Individual early award packages will be awarded through a Component Change Order that authorizes a component of the work at an established price and confirms that the Total Project Cost will not exceed the GMP. Additionally, the CM/GC delivery process reduces the time between the design decisions and the transfer of the cost risk of the project due to external influences, such as material escalations and similar external influences, from the Owner/Agency to the CM/GC.

Participation by representatives of the CM/GC and its Construction Team (the subcontractors in particular) in design coordination meetings, peer reviews, and constructability reviews of the Contract Documents provide for coordination and quality assurance of the Contract Documents.

Also, development of parallel cost estimates by the Design Professional and the CM/GC, and the reconciliation of the Statement of Probable Construction Cost with the CM/GC's construction cost estimate at project milestones, which include the issuance of each Component Cost Change Order, ensures that the design is within the CM/GC's GMP and the Owner/Agency's budget.

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SECTION THREE: PROJECT IMPLEMENTATION
Chapter 3.6: Construction Management
Subchapter 3.6.1: Design Phase



Prior to initiation of the design, the Owner/Agency will enter into a contract with the Design Professional who has been selected in accordance with the Team Selection Procedures and requirements described in *SCM Chapter 3.2: Team Selection.* The Design Professional Contract will include the legal terms and conditions that identify the Design Professional's scope of work, role, and responsibilities.

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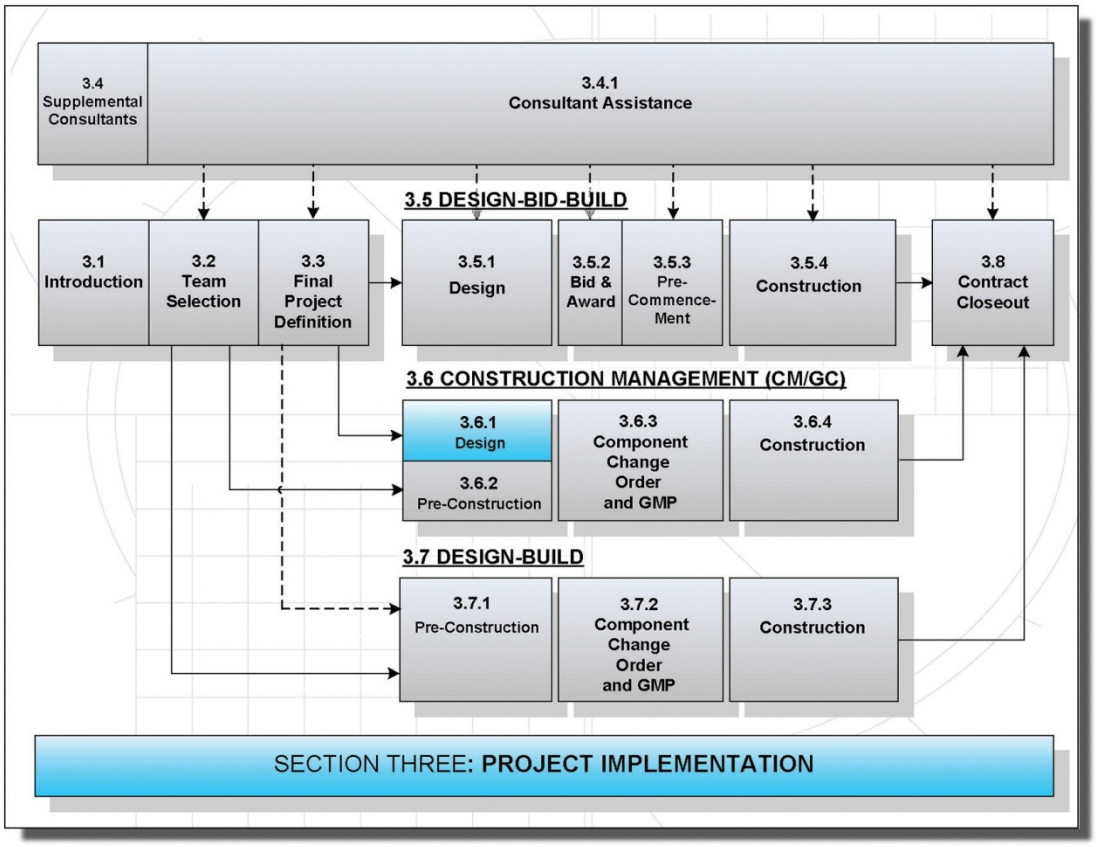


Figure 57: Project Implementation Flow Chart

The (CM/GC) Design Professional Contract specifically contains the project's Stated Cost Limitations (SCL); Design Professional fees, hourly rates, total number of calendar days allowed to complete the Construction Documents; and a Preliminary Design and Construction Schedule. The (CM/GC) Design Professional Contract specifies the total number of site visits included in the fee, and multipliers for design and construction administration of change orders. A copy of the (CM/ GC) Design Professional Contract can be found at the GSFIC website.

The Design Professional shall not proceed with the performance of any professional services until the Design Professional receives a copy of the Final Project Definition documents or program of requirements from the Owner/Agency that has been approved by the Governor's Office of Planning and Budget.

A. THE CONSTRUCTION MANAGEMENT TEAM

Under the Construction Management (CM/GC) project delivery method (See Figure 58), the Owner/Agency executes two separate independent contracts: *Owner/ Design Professional* and *Owner/Construction Manager*. The Design Professional is responsible for providing and executing the contracts of basic engineering sub-consultants and may also be required to include specialty consultants as an Additional Service. The Owner/Agency may elect to hire a Program Manager to act as the Owner's representative and may hire other specialty consultants.

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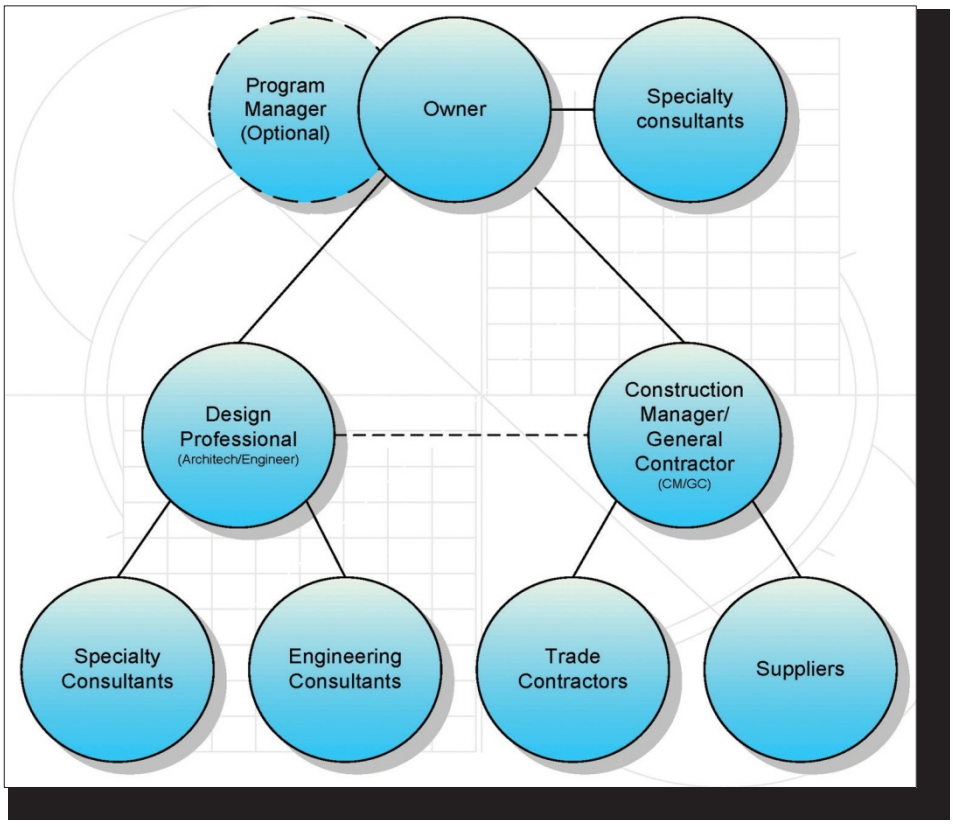


Figure 58: The Construction Management Team

The Construction Manager executes the trade contractor's and material supplier's contracts. The Design Professional is under contract prior to the Construction Manager's selection and is responsible for the timely production of Contract Documents of a design that meets the Owner/Agency's scope of work and program of requirements at or below the Stated Cost Limitations (SCL).

In contrast to the Design-Bid-Build project delivery method, the unique characteristic of the Construction Management delivery method is that the Construction Manager is selected prior to completion of the Contract Documents and becomes a part of the project team by attending and participating in project team meetings and providing Pre-Construction consulting services to advise the Design Team on the Total Project Cost, schedule, and constructability of the Contract Documents. The Construction Manager may be selected as early as Concept Design, but not later than the completion of Design Development. Descriptions of services and activities by the project team in this section of the SCM are written according to the scenario that the Construction Manager is selected at or near to the completion of Schematic Design and provides Pre-Construction Services on the completed Schematic Design Documents.

B. OWNER'S RESPONSIBILITIES

The Owner/Agency shall furnish the following project information to the Design Professional:

- Final Project Definition (predesign study) including the cost estimate completed in *SCM Chapter 3.3: Final Project Definition*
- Project topographical survey
- Written legal description of the project site
- Land/Utility Survey of the project site
- Preliminary geotechnical reports on the project site

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If the Owner/Agency doesn't furnish the above information, or if the information lacks adequate additional information or programming to enable the design of the project, the additional information shall be provided in a timely manner by the Owner/Agency or provided by the Design Professional as an Additional Service described in Section Three, Part One in the Design Professional Contract (CM/GC).

With the Design Professional's assistance, the Owner/Agency shall select and contract with a Construction Manager to provide Pre-Construction consulting and construction services as hereafter described in *SCM Subchapter 3.6.2: Pre-Construction*, *Subchapter 3.6.3: Component Change Order and GMP*, *Subchapter 3.6.4: Construction*, and *Chapter 3.8: Contract Closeout*. The selection of the Construction Manager shall be accomplished through a Qualification-Based Selection Process as described in *SCM Chapter 3.2: Team Selection*.

C. DESIGN PHASE SERVICES

The Design Professional's Design Phase basic services include all normal and customary professional services of the Design Professional and its Design Team (consultants such as architectural, civil, structural, mechanical/electrical/plumbing [MEP], and fire protection [FP]) required to complete all plans and specifications.

The successful design of the project relies heavily on the data developed during the *SCM Section Two: Project Development* and then finalized in the *SCM Chapter 3.3: Final Project Definition*.

Prior to beginning design, the Design Professional should review and validate the Final Project Definition (preprogramming) documents, confirming that the project scope of work and program of requirements is compatible with the Stated Cost Limitations (SCL) and the Preliminary Design and Construction Schedule. If portions of the project scope of work or program of requirements are not compatible with the SCL/Budget, the Design Professional shall reconcile those differences prior to initiation of the design. It is not *best practice* to proceed with design until the project scope of work and program of requirements are reconciled. Examples of possible problems due to change in the project scope of work and program requirements include the following:

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The table below summarizes the Design Process Sequence for a typical project.

Table 4: The Design Process Sequence (CM/GC)

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THE DESIGN PROCESS SEQUENCE (CM/GC: PAGE ONE)

Selection of Design Professional	Site Memorandum	Concept Design Studies	Schematic Design Documents	Design Development Documents
Owner Inputs: • Design Professional Contract prepared and submitted. • Identification of Owner's Representative. • Submits to Design Professional the Predesign Study or Program. • Submits to Design Professional plat of Boundary Line Survey. **Design Professional Outputs** • Design Professional provides certificate of insurance in 10 days or less. • Design Professional provides a list of consultants not previously identified. • Design Professional shall review the Predesign Study to confirm its understanding of the Owner's requirements. • If the Predesign study or Program is more than one year old, Design Professional shall consult with the Owner to update the study or Program as required. • Design Professional prepares a Preliminary Design and Construction Schedule.	**Owner Inputs:** • Owner's written consent to not comply with the "policy" if applicable • Plat of Boundary Line Survey, if not previously provided **Design Professional Outputs** • Site survey of conditions and site analysis • Report on subsurface conditions • Stage One &Two Certificates of Geotechnical Engineer • Applicable Supplementary General Conditions, including unit cost and quantities • Statement of Probable Construction Cost	**Owner Inputs:** • Review and approval of Concept Design Study **Design Professional Outputs** • Site plan, building plans, sections, elevations, and narrative necessary to explain the proposed design solution • Initial and updated Statement of Probable Construction Cost	**Owner Inputs:** • Comments on the Concept Design Study • Written approval of the Schematic Design Submittal **Design Professional Outputs** • Drawings and outline specifications. • Drawn to scale indicating materials and assemblies. • Major furniture and equipment drawn to scale. • Updated Design and Construction Schedule. • Statement of Probable Construction Cost and plan to address differences with the Stated Cost Limitation. • Submit red-lined copy of the site plan to the Owner indicating construction staging and traffic routing. **CM/GC Inputs:** • Peer review • Cost Estimate Overall Project Schedule • Management Plan • Quality Control Plan • Safety Plan	**Owner Inputs:** • Comments on the Schematic Design Submittal • Written approval of the Design Development documents • Request, if applicable, for perspective illustrations, physical models, or 3D computer models (note: this is an addional service) **Design Professional Outputs** • Drawings and outline specifications necessary to fix and illustrate the size and character of the entire project • Initial code compliance review (Preliminary Fire Marshall Review) • Statement of Probable Construction Cost • Updated Design and Construction Schedule **CM/GC Inputs:** • Constructability Review • Cost Estimate • Schedule Update • Component Cost Change Orders • Guaranteed Maximum Price

D. PROJECT STARTUP

The Design Professional begins the design process by scheduling a project "kick-off" meeting with the Owner/Agency. At this meeting, the project team participants are introduced and general project parameters are reviewed. The Design Professional should produce and distribute minutes of the meeting. Click here for a sample Kick-Off Meeting Agenda.

At project start-up, one of the Design Professional's primary responsibilities is code compliance. Unique to State projects, there is no State building official other than those employed for Life Safety, Elevator, Building Accessibility, and Fire Safety Rules Regulations and Codes. The Design Professional serves as the Building Official.

An additional code requirement is the Special Inspections per International Building Code (IBC). GSFIC has provided guidance and forms for compliance with these requirements.

The following items also provide additional code related information:

- Building Codes
- Georgia State Amendments to the State Minimum Standards Codes
- State Fire Marshal's Office
- Life Safety Code
- State Accessibility Code
- Department of Community Affairs
- Department of Labor (escalators, elevators and boilers)

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E. INSTRUMENTS OF SERVICE

Unlike many private sector projects, the Instruments of Service described in the contract are *works for hire* and belong to the Owner. There are rights of use specific to both the Design Professional and the Construction Manager.

Copies of the Construction Documents are to be made available to the Construction Manager in accordance with the Contract Documents. These include paper, reproducible and electronic backgrounds and read-only documents. A List of project deliverables is included in Exhibit H of the Design Professional Contract (CM/GC). All of these deliverables are Instruments of Service.

F. SITE EVALUATION AND PLANNING SERVICES

Review of the project site and Owner-furnished information is done concurrently with schematic design services. Site data include the following:

- The Site Memorandum in Exhibit F of the (CM/GC) Design Professional Contract
- Geotechnical Report
- Seismic analysis (if applicable)
- Environmental Site Assessment (ESA) (See *SCM Chapter 2.4 [C8]: Site Selection and Analysis*)
- Utilities checklist
- Boundary, topographic, and tree survey
- Special or site/project-specific data such as demolition, historic, wetlands permitting, and similar data

In addition to a review of site data, the Site Evaluation and Planning Services include the following:

- The Geotechnical Engineer's Foundation Design and Stage One and Two Statement contained in Exhibit G of the (CM/GC) Design Professional Contract
- The Plot Plan
- The erosion, sedimentation, pollution control Best Management Practices (BMPs)
- The procurement of soil testing services

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G. SCHEMATIC DESIGN SERVICES

Beginning the building design involves the development of Concept Design Studies, Site Analysis, Schematic Design Documents, and a Cost Comparison Analysis of each proposed solution. Schematic Design Submittal Requirements are contained in the List of Deliverables as an exhibit in the Design Professional Contract.

G1. Concept Design Studies

Concept Design Studies consist of the following:

- Site Plan
- Building Plan
- Sections
- Elevations
- Other graphic and narrative information as required

The Concept Design Submittal Checklist can be used as a guide for the development of a Schematic Design/Concept schedule.

G2. Site Analysis

Site Analysis defines the implications of the following factors on the design:

- Physical environment and characteristics of the site
- Climate
- Topography
- Soils and conditions
- Ecology
- Utilities
- Circulation
- Views
- Noise
- Existing structures

G3. Schematic Design Documents

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Schematic Design Documents are a further development of the approved Concept Design. Schematic Submittal Requirements are contained in the List of Deliverables in Exhibit H of the Design Professional Contract (CM/GC).

The building systems should be described and furniture and equipment locations shown to scale. Additional drawing requirements are listed in the *ASTM E 1804-07: Standard Practice for Performing and Reporting Cost Analysis during the Design Phase of a Project*.

Summarized from ASTM E 1804-07, the following should be included in the Schematic Submittal:

- Preliminary specification outlines
- General finish schedule information
- Structural, mechanical, and electrical (MEP) information
- Site plan
- Floor plans
- Wall sections
- Roof system
- Any specialty construction

The Project Schedule should be updated to reflect progress to date and anticipated construction duration as described in the section titled *SCM Subchapter 3.6.2 (B3): Schedule Management*.

An initial Statement of Probable Construction Cost should be created as described in the section titled *SCM Subchapter 3.6.2 (B4): Cost Containment*.

Approval of Schematic Design by the Owner/Agency is required before proceeding to the Design Development Phase. A specific checklist of Schematic Submittal Requirements that can be used as a guide for Schematic Design Submittals.

G4. Construction Manager (CM/GC) Selection

The Design Professional or, if retained, the Program Manager shall assist the Owner/Agency in obtaining proposals from qualified firms that wish to act as the CM/GC and construct the project, and may assist in the selection and awarding of the CM/GC Contract. Selection of the CM/GC shall be a Qualifications-Based Selection process as described in *SCM Chapter 3.2: Team Selection*. Note that early selection of a CM/GC in the initial stages of the Design will provide for a greater level of services to the Design Team and Owner.

Specifically, the Design Professional should complete the following tasks to assist the Owner/Agency in selecting of the CM/GC:

1. Develop a list of prospective proposers.
2. Assist the Owner/Agency in the development and preparation of a Request for Qualifications for CM/GC.
3. Assist with the development of the evaluation criteria for selection of the CM/GC following the State guidelines.
4. Assist the Owner/Agency in the development and preparation of a Request for Proposals for CM/GC that will be provided to the finalist CM/GCs that were selected from the response to the RFQ.
5. Assist with the development of the evaluation criteria for final selection of the CM/GC following the State guidelines.

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In coordination with the Owner/Agency, the Design Professional shall review any request for modifications received during the proposal period and prepare and issue any addenda approved by the Owner/Agency to all holders of record of the proposal documents.

The Design Professional shall schedule and conduct a pre-proposal meeting at a location designated by the Owner/Agency. The Design Professional shall write responses and, with approval of the Owner/Agency, revise and confirm the following contract terms and conditions for the CM/ GC Contract:

- The contract time
- The daily rate for liquidated damages
- The CM/GC's fees

- The Guaranteed Maximum Price (GMP)
- The maximum allowable amount for CM/GC overhead cost and expenses
- The daily rate for time dependent overhead costs
- Any unit prices to be included or added to the proposal documents
- Any other units or percentages required to be established and set by the proposal documents

The Design Professional shall assist the Owner/Agency in the final negotiations and execution of the CM/GC Contract, utilizing the approved State contracts.

The Design Professional shall schedule and host a "kick-off" meeting with the selected CM/GC, Agency, Design Professional representatives, other Owner/Agency-retained consultants, and other interested parties. The Appendix includes a sample Kick-off Meeting Agenda.

The kick-off meeting shall serve as a forum for the Design Professional to deliver the Owner/ Agency's scope of work and program of requirements to the selected CM/GC; to initiate the start of the CM/GC Pre-Construction services; and establish lines of communication between the CM/ GC, the Design Professional, and the Owner/Agency Project Management Staff.

G5. Partnering

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The total project team includes

- The Owner/Agency project management staff
- The Owner's representative (Program Manager), if needed
- The Design Professional and other Owner/Agency-retained consultants
- Separate CM/GCs
- CM/GC and trade contractors

It is the Owner/Agency's expectation that the total project team shall work cohesively to achieve the commencement and completion of the design in accordance with the Owner/Agency's scope of work, program of request, budget, and construction in accordance with the Contract Documents.

The Owner/Agency may elect to have a *Partnering Session* during which, under the direction of a third-party consultant, all of the project participants come together to develop common goals and objectives that will enhance the probability of success of the project. See *SCM Chapter 3.4: Supplemental Consultants* and *SCM Subchapter 3.4.1: Consultant Assistance* for a description of the scope of services and activities of the partnering consultant, and guidelines and procedures for selection of and managing the partnering consultant.

H. DESIGN DEVELOPMENT SERVICES

Based on the approved Schematic Submittal, it is the responsibility of the Design Professional together with the Owner/Agency and Program Manager to coordinate with the CM/GC in the design development phase. The objective of these design development coordination meetings is to insure the project will meet the Final Project Definition in all aspects. The design development coordination meetings should facilitate will expand and refine the project. The major elements of the Design Development Documents are the drawings, outline specifications, and possible illustrations, models, or renderings. The Design Development Documents are also required to be submitted for Initial Code Compliance Review to the State Fire Marshal's Office.

H1. Design Development Meetings

In conjunction with the Owner/Agency and its Project Management Staff, the Design Professional shall schedule and host periodic (as often as appropriate, but not less than monthly) Design Coordination Meetings with the CM/GC for the purpose of collaborating and coordinating the Design Development Documents.

The Design Professional, together with the Owner/Agency and Program Manager (if applicable), is responsible for coordinating and cooperating with the CM/GC in the development of the design of the project within the budgeted cost and schedule.

The objective of this coordination is to make certain that the design meets the Final Project Definition in all respects. Coordination between the parties facilitates the following items:

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- Cost containment and cost monitoring
- Cost effective decisions
- Compatibility with Owner/Agency's architectural standards
- Consistency among the tenant agency and Owner/Agency's expectations in the Design Professional's program
- Appropriate provision of all necessary services and utilities
- Necessary level of environmental review and documentation
- Owner/Agency updates on the progress of the project
- Maintenance of project schedule
- Construction quality assurance that complies with the Design Professional's Program
- Design Development Documents reviewed for constructability

H2. Design Development Drawings

Design Development Drawings include the following:

- Site plans with utility locations, grade elevations, roads, sidewalks, and parking areas
- Demolition plans
- Building structural and foundation design and typical structural framing
- Current floor plans
- Exterior wall sections
- Building Elevations and Sections
- Typical construction details including wall types
- Furniture layouts
- Equipment layouts
- Preliminary finish schedule with material selections
- HVAC, plumbing, fire protection and electrical one-line diagrams reflecting the intended design
- Other drawings needed to describe the project

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H3. Outline Specifications

Along with the drawings, *Outline Specifications* should describe the size, character, and quality of the entire project including:

- Kinds of materials
- Criteria and sizing of major components
- Equipment sizes and capacities
- Approximate layouts and clearances
- Structure types
- Grade elevations
- Sidewalks
- Utilities
- Roads
- Parking areas
- Mechanical and electrical systems

H4. Construction Component Change Order Documents (CCO) (Early Award Construction Packages)

In addition to providing the Final Construction Documents for the entire project, the Design Professional shall also provide complete Construction Documents and specifications for the early award of construction component packages that have been identified by the CM/GC. The CM/GC shall be authorized to proceed with the work through the execution of a Component Change Order in accordance with Section Two, Part Two of the (CM/GC) Design Professional Contract.

The use of a Component Change Order allows the CM/GC to proceed with construction on a defined portion of the work prior to the completion of construction documentation on all parts of the project and also prior to the execution of a GMP Change Order. The Owner/Agency should not advocate the use of a CCO unless the entire team fully understands the potential risks. Since portions of the project will be under construction at the same time the remaining portions are still being designed, the use of Component Change Orders puts additional responsibilities and time constraints on the Design Professional.

Component Construction Documents will be issued by the Design Professional for pricing by the CM/GC. Component Construction Documents should be complete and thorough so as to fully identify the scope of work required. The Design Professional will review the Component Change Order price as it relates to the current Estimate of Probable Construction Cost.

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The Design Professional will recommend to the Owner approval or appropriate corrective action necessary to maintain the project cost within the Stated Cost Limitation (SCL). Upon approval, the Owner will issue the proceed order under the Component Change Order to the CM/GC. The issuance of a Component Change Order authorizes the CM/GC to proceed with performance of the work on the project site and initiates the Design Professional's and Contract Administration Services.

H5. Illustrations and Models

Perspective illustrations, physical or 3-D computer models may be requested by the Owner. These services are performed as additional services.

H6. Statement of Probable Construction Cost

An updated Statement of Probable Construction Cost is to be provided and reconciled with the CM/GC as described in *SCM Subchapter 3.6.2 (B4): Cost Containment*. In the event the Owner/Agency propose a change to the Design Professional's program, the Design Professional shall review the proposed revision to determine whether the change requires a change in the Stated Cost Limitation (SCL).

H7. Project Schedule Update

The Design Professional will work with the CM/GC to update the Overall Project Schedule to reflect progress to date and anticipate design schedule dates and construction durations as described in the *SCM Subchapter 3.6.2 (B3): Schedule Management*. With the aid of the CM/GC's recommendations according to its Construction Progress Schedule, the Design Professional shall develop an Overall Project Schedule that reflects a realistic sequence of design, construction, and procurement activities for approval by the Owner. These activities are necessary to achieve the completion of design, commencement, and construction of the project in accordance with the Design Professional's program of requirements.

The Overall Project Schedule shall include, but is not limited to, the following:

1. Include a schedule for completion of Construction Documents for the entire project
2. Include a schedule for the anticipated commencement and completion of construction and procurement activities under Contract Documents for each component for which separate component Construction Documents are to be prepared
3. Include a schedule showing the date by which the CM/GC shall propose a GMP Change Order to the CM/GC Contract
4. Include a schedule showing the date by which the CM/GC anticipates that it shall propose a lump sum price change order to the CM/GC Contract
5. Include a schedule for approval times for shop drawings and submittals required of the CM/GC, keeping in mind that the CM/GC shall be instructed to take into account large submittal documents that will require longer review times, e.g., submittals with over fifty sheets of drawings.

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6. Include a schedule of dates for the submittal of approval documents to the Owner/Agency.
7. Include a schedule of dates for the submittal of approval documents to other State agencies.

H8. Code Compliance Review

Initial Code Compliance Review is accomplished by sending the Design Development Documents to the GSFIC Plan Review Division for the State Fire Marshal's review. Accompanying the drawing must be a Plans Transmittal Letter.

H9. Design Development Approval

Approval of Design Development by the Owner/Agency is required before proceeding to Construction Documents.

H10. Design Development Checklist

The Board of Regents has developed a specific checklist of Design Development Submittal Requirements that can be used as a guide by other agencies for the development of a Design Development Submittal Checklist.

I. CONSTRUCTION DOCUMENTS

Progressing the project documentation from earlier phases into Construction Documents reflects a fundamental shift from communicating the design intent to the Owner/Agency to communicating bidding and construction requirements to the CM/GC.

The Contract Documents may consist of, but are not limited to, the following documents:

- CM/GC Contract
- Supplementary Conditions to the Contract
- Specifications
- Working drawings

I1. Construction Manager's Responsibilities

The Construction Manager's responsibilities for providing proprietary design services such as steel detailing and shop drawings for construction means and methods must be approved by the Owner and clearly described in the Construction Documents.

The performance criteria to be met by the CM/GC's specialty consultant must be clearly indicated. For example, the CM/GC may have options regarding which specified proprietary roofing system may be provided. That manufacturer would be required to meet the specific wind uplift criteria specified, and demonstrate by calculations and shop drawings sealed by a Georgia-licensed engineer that the criteria has been met. Such delegated design is consistent with normal industry practice. However, caution should be used to avoid transferring the Design Professional's obligation under applicable law to a third party.

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I2. GMP Change Order

When the Contract Documents for the entire project have reached a stage of completion (ideally at 80 percent), but not later than thirty days after the completion of the Contract Documents by the Design Professional, the CM/GC shall submit to the Owner/Agency, through the Design Professional, a proposed change order to the CM/GC Construction Contract. The GMP Change Order is submitted in order to establish the guaranteed maximum price to perform the construction of the entire project in accordance with the Final Project Definition as described in the Construction Documents and to achieve a final completion by a date specified in the change order. The Design Professional shall review the prepared GMP Change Order to determine its compliance with the Final Project Definition and the terms and conditions of the CM/GC Contract. Consequently, the Design Professional shall recommend either approval or disapproval of the GMP Change Order to the Owner/Agency. The Design Professional's recommendation shall include the following:

1. Analysis of the GMP Change Order price as it relates to the Design Professional's Estimate of Probable Construction Cost and to the Stated Cost Limitations
2. Establishment of an amount to be the Owner/Agency's contingency reserve
3. Confirmation that the scheduled completion date in the GMP Change Order is consistent with the completion dates in the Overall Project Schedule
4. Confirmation that the work in the proposed GMP Change Order and the assumptions on which it is based are consistent with Final Project Definition and Construction Documents

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If the GMP Change Order proposes a GMP which, taking into account the contingency reserves, exceeds the Stated Cost Limitation (SCL) for construction of the project, the Design Professional, in collaboration with the CM/GC shall recommend such corrective action necessary to reduce the GMP price so that it is within the SCL. If the Owner/Agency agrees to a GMP that exceeds the SCL, then the SCL shall thereafter equal the GMP price. The Design Professional is not due any increase in compensation as a result in the change to the SCL. The GMP Change Order will incorporate into the GMP price all of the previously approved Component Change Orders. Upon approval of the GMP Change Order, the following shall occur:

- The Owner/Agency, through the Design Professional, shall issue a Notice to Proceed to the CM/GC.
- The Design Professional shall complete the design of the project. The completed design will include Construction Documents that are developed in accordance with the basis of the work as stated in the GMP Change Order.

SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.6: Construction Management

Subchapter 3.6.2: Pre-Construction Phase



A. BASIC SERVICES

Upon the CM/GC's receipt of the Owner/Agency's Notice of Intent to Award, the CM/GC shall be authorized to initiate the Pre-Construction services. No physical work may begin on the site until the GM/GC's receipt of an Owner/Agency-approved Component Change Order or Guaranteed Maximum Price (GMP) Change Order.

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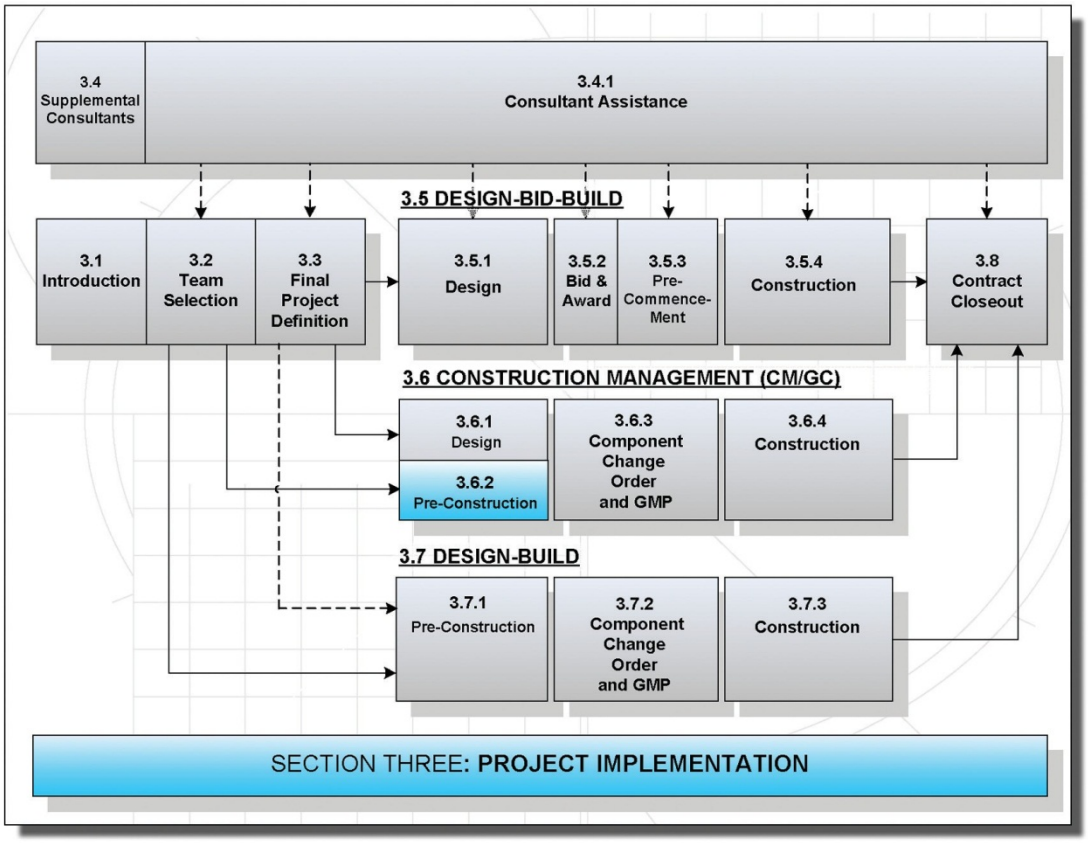


Figure 59: The Project Implementation Flow Chart

One major difference between the Design-Bid-Build and Construction Management delivery methods is that under the Construction Management approach, the CM/GC is normally part of the overall project team during a significant portion of the Design Phase. This period of time is known as the Pre-Construction Phase.

The objective of Pre-Construction is for the Design Professional and Owner to benefit from the CM/GC's construction knowledge and experience from building similar projects.

In order to maximize the benefit of this assistance, the CM/GC should be engaged as early as possible during the development of the design. Ideally, the CM/GC should be selected no later than the completion of Schematic Design when the CM/GC can assist in evaluating the cost benefits of major design decisions (including building shape and configuration). Later in design, the CM/GC has less of an ability to make a significant impact on costs and quality.

The table below summarizes the Design Process Sequence for a typical project.

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Table 5: The Design Process Sequence

THE DESIGN PROCESS SEQUENCE (CM/GC: PAGE ONE)				
Selection of Design Professional	**Site Memorandum**	**Concept Design Studies**	**Schematic Design Documents**	**Design Development Documents**
Owner Inputs: • Design Professional Contract prepared and submitted • Identification of Owner's representative • Submits to Design Professional the Predesign Study or Program • Submits to Design Professional plat of boundary line survey **Design Professional Outputs:** • Design Professional provides certificate of insurance in 10 days or less • Design Professional provides a list of consultants not previously identified • Design Professional shall review the Pre design study to confirm its understanding of the Owner's requirements • If the Pre design study or Program is more than one year old, Design Professional shall consult with the Owner to update the study or Program as required • Design Professional prepares a preliminary design and construction schedule	**Owner Inputs:** • Owner's written consent to not comply with the "policy" if applicable • Plat of boundary line survey, if not previously provided **Design Professional Outputs:** • Site survey of conditions and site analysis • Report on subsurface conditions • Stage one & two certificates of Geotechnical Engineer • Applicable Supplementary General Conditions, including unit cost and quantities • Statement of Probable Construction Cost	**Owner Inputs:** • Review and approval of concept design study **Design Professional Outputs:** • Site plan, building plans, sections, elevations, and narrative necessary to explain the proposed design solution • Initial and updated Statement of Probable Construction Cost	**Owner Inputs:** • Comments on the Concept design study • Written approval of the Schematic design submittal **Design Professional Outputs:** • Drawings and outline specifications • Drawn to scale indicating materials and assemblies • Major furniture and equipment drawn to scale • Updated design and construction schedule • Statement of Probable Construction Cost and plan to address differences with the Stated Cost Limitation • Submit red-lined copy of the site plan to the Owner indicating construction staging and traffic routing. **CM/GC Input:** • Peer review • Cost Estimate • Overall project Schedule • Management Plan • Quality Control Plan • Safety Plan	**Owner Inputs:** • Comments on the Schematic Design submittal • Written approval of the Design Development documents • Request, if applicable, for perspective illustrations, physical models, or 3D computer models (note: this is an add service) **Design Professional Outputs:** • Drawings and outline specifications necessary to fix and illustrate the size and character of the entire project • Initial code compliance review (Preliminary Fire Marshall review) • Statement of Probable Construction Cost • Updated design and construction schedule **CM/GC Output:** • Constructability Review • Cost Estimate • Schedule Update • Component Cost Change Orders • Guaranteed Maximum Price

Within sixty days of the CM/GC's receipt of the Owner/Agency's Notice of Intent to Award Letter, the CM/GC shall provide the Owner/Agency, through the Design Professional, the following items (that are hereafter further described).

1. A CM/GC Contract executed by the CM/GC
2. Payment and Performance Bonds (Reference Section Two, Part One of the Construction Management Agreement [CM/GC])
3. Proof of insurance as required by the Contract Documents
4. Construction Progress Schedule (Reference Section Two, Part One of the Construction Management Agreement [CM/GC])
5. Document Review Report (Reference Section Two, Part One of the Construction Management Agreement [CM/GC])
6. Construction Management Plan (Reference Section Two, Part One of the Construction Management Agreement [CM/GC])
7. CM/GC's Quality Control Program (Reference the Construction Management Agreement [CM/GC])
8. CM/GC's Schedule of Rental Rates and Wages Rates (Reference the Construction Management Agreement [CM/GC])

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B. MANAGEMENT PLAN

Development of a management plan should be the first activity initiated by the CM/GC in the Pre-Construction Phase after receiving a Proceed Order. The plan itself can be a short and relatively simple document (consisting of as few as ten pages). The purpose of this plan is for the CM/GC to identify exactly which services are to be required by the Owner/Agency and Design Professional along with when and how the CM/GC will deliver those services. These services might include, but are not limited to, Cost Estimating, Value Engineering, Constructability Review & Design Re- views, Scheduling, recommendations as to phasing of the design, establishing a Quality Control Plan, and establishing a Safety Management Plan (including site logistics). As a minimum, the management plan should consist of these four basic sections:

(a) Outline of Services

The Request for Proposal (RFP), as well as the contract, defines the Basic Services that will be required of the CM/GC during Pre-Construction. However, these documents do not provide substantial detail as to exactly which services might be needed.

Therefore, the entire project team should meet and define exactly how the CM/GC can assist the Owner/Agency and Design Professional in Pre-Construction. For example, the contract requires the CM/GC to update estimates at "appropriate intervals." The team should determine what those intervals should be, and the management plan should memorialize the agreement. This outline of services should include the list of the deliverables that will be required of the CM/GC during Pre-Construction as well as timing and/or frequency of meetings.

(b) Staffing Plan

Although it is likely that during the selection process the CM/GC provided information such as organizational charts, names, and positions, as well as resumes, the staffing plan should reconfirm the CM/GC's Pre-Construction and Construction Team. Included in this section should be an organizational chart for both Pre-Construction and Construction as well as a document that identifies the location of the personnel (home office versus site), their time commitment during each phase, whether or not that person's salary is included in the cost of the work (as opposed to

the fee for overhead and profit), and their roles and responsibilities. This document can be in narrative form or in a matrix or chart.

(c) Pre-Construction Schedule

The management plan should include the Pre-Construction Schedule that indicates the major design activities and Pre-Construction services described above. Since the CM/GC is basically providing services to assist in the design, the format of the Pre-Construction should be largely based upon the design activities (Schematic Design, Design Development, and Construction Documents). For each major phase of design, the corresponding activities might include the time to prepare the design, prepare the estimate, reconcile the estimates, perform Value Engineering or cost reduction, prepare a revised estimate, perform constructability reviews, and approve the design. Please note that the Pre-Construction Schedule is a deliverable required by the management plan (as opposed to being included in the contract)

(d) Basic Procedures & Control Systems

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The management plan should also outline and/or define the systems that the CM/GC will use for project controls during both Pre-Construction and Construction. In other words, the CM/GC shall explain the software systems intended for use in estimating, cost control, information control, and other tasks. Further, the management plan should outline the basic timing of reports and possibly include example formats.

The management plan is simply a tool to better define how the CM/GC will assist the team during the Design Phase. The plan should be concise and as previously written, could be presented in as few as ten pages.

B1. CM/GC Consultation

The CM/GC and its trade contractors, vendors, and suppliers, in collaboration with the Design Professional and the Owner/Agency's Project Management Staff, will participate in the review and development of the project as set forth in the Owner/Agency's program of requirements and shall participate in the scheduling of such design work and construction of the project, including components thereof approved for construction by a Component Change Order and of the entire project under a GMP Change Order.

B2. Coordination Meetings

During the Design Phase of the project, the CM/GC and the Design Professional shall develop a schedule for conducting meetings, and attend the scheduled meetings with the Owner/Agency and other interested parties.

B3. Schedule Management

With the Design Professional, the CM/GC shall develop and update on a monthly basis an Overall Project Schedule that coordinates and integrates the Design Team's efforts with the CM/GC's actual or anticipated construction schedule(s), including the specific commencement and completion scheduled dates for proposed phasing of the construction and for award of early construction components by Component Change Order. The schedule must include the dates for commencement and completion of the work as required by the CM/GC Contract. The design

and construction milestones must be clearly indicated and sequentially connected and organized to identify the critical path of the project. The schedule will have the minimum number of activities required for the CM/GC to efficiently and accurately manage and monitor the progress of the design and construction activities, and represent the complete scope of work to the Design Professional and Owner/Agency, defining the project's critical path and associated activities. With the Construction Progress Schedule, the CM/GC shall submit the shop drawings and sample submittal schedule for approval by the Design Professional, coordinating the associated approval dates for the shop drawings and samples with the Construction Progress Schedule. Upon recommendation by the Design Professional and with acceptance by the Owner/Agency, the Construction Progress Schedule shall become the Overall Project Schedule and become part of the contract.

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There is not a State-mandated format for the development of the Overall Project Schedule. It is anticipated that the CM/GC will provide the Overall Project Schedule utilizing one of the nationally recognized computerized construction scheduling programs. These programs utilize network analysis diagrams to plan and organize construction activities in an orderly manner along the critical path of the project.

For review and approval, the CM/GC shall submit the type and capabilities of the computerized network system proposed to be used to the Owner/Agency and the Design Professional.

Regardless which computerized network system is to be utilized, as a minimum, the Overall Project Schedule shall have a complete sequence of design and construction, organized by activities, with dates for beginning and completing each element of the design and construction. As a minimum, the Overall Project Schedule shall include the following:

1. All activities involved in the project, including every activity that influences the time required to complete the work

2. An illustration of the order and interdependence of activities and the sequence of work, showing how the beginning of a given activity depends on completion of preceding activities, and how completion of the activity may affect start of subsequent activities

3. An illustration of the complete sequence of design and construction by phase and activity, identifying work on separate floors or areas as appropriate

4. Dates for submittals, including those for Owner/Agency-furnished items, the Design Professional submittal review periods, and return of submittals, dates for procurement and delivery of critical equipment and products, and dates for installation and provision for testing and commissioning activities

5. Activity durations indicated on the schedule that should not exceed fifteen calendar days each in length, except non-construction activities, such as procurement and production of equipment and materials, delivery of materials and equipment, or the curing of concrete

6. Separate activities for submittal, submittal review and approval, material delivery and installation work items involving submittals, materials and installation shall not be included in the same activity

7. The CM/GC's submittal and review and approval dates, manufacturing durations, delivery dates, and installation duration time for materials and equipment to be furnished by Owner/ Agency, obtained from the Owner/Agency

8. A Work Breakdown Structure (WBS) format that summarizes activities in accordance with an acceptable schedule of values

B4. Cost Containment

The CM/GC shall provide cost estimating, constructability evaluations and recommendations, and shall monitor and comment on the project's scope and quality as both relate to the Project Construction Budget.

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The CM/GC shall provide a Construction Cost Estimate, setting forth in detail the CM/GC's estimate of construction cost, including all actual costs and CM/GC contingencies and fees, for the construction of the entire project and each component thereof.

The CM/GC's cost estimates during design shall be provided in CSI Uniformat with the cost classifications at the level suitable for the particular phase of the design. If approved by the Owner/Agency, the CM/GC may utilize CSI Masterformat when it becomes necessary to compare the estimate with trade contractor's pricing. Cost estimates will be prepared and updated continually as the Construction Documents are developed. As a minimum, cost estimates shall be submitted to the Design Professional and Owner/Agency on a monthly basis and when each Component Change Order is issued. Cost estimates may be submitted at more frequent intervals as the Owner/Agency may reasonably request.

The CM/GC shall provide a Construction Cost Estimate to the Owner/Agency that has been reconciled with the independently derived Design Professional's Estimate of Probable Construction Cost, each being based upon the program of requirements and Design Documents prepared by the Design Professional at the following project milestones:

1. Conclusion of Schematic Design

2. Conclusion of Design Development

3. At 50 percent complete Construction Documents (prior to submission of GMP Change Order)

4. Issuance of any Component Change Order
5. Issuance of GMP Change Order

If at any time the Design Professional's Estimate of Probable Construction Cost and the CM/GC's Construction Cost Estimate are, in the CM/GC's judgment, not consistent or exceed the corresponding components of the project budget, the Owner/Agency, Design Professional, and the CM/ GC shall confer to resolve such differences.

B5. Partnering

The Owner/Agency should employ a team concept in connection with the design and construction of the project. To that end, the Owner/Agency may elect to employ a separate third-party consultant to conduct a partnering workshop for the total project team.

See Section *SCM Chapter 3.4: Supplemental Consultants* and *SCM Subchapter 3.4.1: Consultant Assistance* for guidance and instruction regarding the selection and scope of work for a separate third-party consultant for partnering.

B6. Value Engineering and Value Management

Value engineering (VE) and Value Management (VM) are processes performed during the Design Phase by the CM/GC, Owner/Agency, Design Professional, and possibly a VE consultant with the goal of enhancing the overall quality and value of the design of the project.

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Utilizing the CM/GC delivery method, the objective is for the Design Professional and Owner/ Agency to benefit from the CM/GC's construction knowledge and experience.

Whereas VE is the process, establishing collaborations in the design with design constructability reviews are the tools used by the CM/GC to perform Value Engineering.

Often the Owner/Agency has more programmatic or qualitative needs than what the construction budget can support. As a result, the team might implement a cost reduction strategy, meaning that scope and quality are reduced to better align scope with the budget. Unfortunately, this cost reduction process is often confused with Value Engineering, and some even label this process as VE. Scope reductions and quality reductions made in order to save money are NOT Value Engineering.

The process of Value Engineering should result in a design that is attractive, functional (meets the programmatic needs), cost effective, easy to build (constructible) and maintain. Value Engineering results in a design that is sustainable (lower operating costs) and has a cost-effective life span. The Owner/Agency may elect to formalize a Value Engineering study that includes a third-party VE consultant as well as the project team, or implement a less formal Value Management process that is managed by the CM/GC. But how do Value Engineering and the less formal Value Management differ when used in the CM/GC Construction Delivery Process?

(a) Value Engineering

Value engineering is a formalized process lasting three to four days that includes participation from project team members and other qualified consultants. During this process, systematic application of analyses are used to identify foundations and components of the work, establishing the value of these functions and selecting the necessary functions to meet the required Owner/ Agency's program of requirements at the lowest overall cost.

Someone experienced in team facilitation and leadership should lead the formalized VE process and should hold a certification in Value Engineering or equivalent certification.

VE can be performed at or near the completion of the Schematic Design, but should be utilized prior to the development and acceptance of a GMP Change Order. See *SCM Chapter 3.4: Supplemental Consultants* and *SCM Subchapter 3.4.1: Consultant Assistance* for a description of the scope of services and activities of the VE consultants, plus guidelines and procedures for selecting and managing VE consultants.

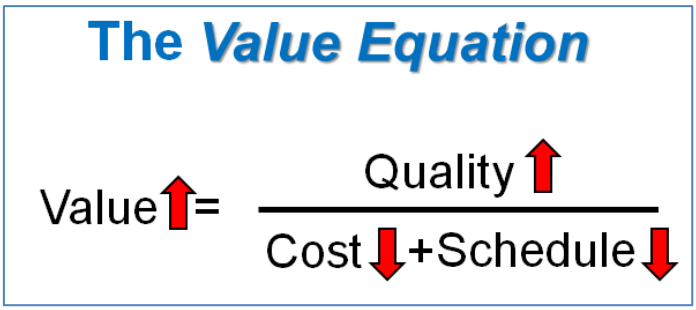
(b) Value Management

Value Management (VM) is a process performed throughout the project, but primarily during the Design Phase, by the entire project team with the goal of enhancing the value of the project for the State. This process requires meeting the program goals in a way that optimizes the value received for the investment being made. The key objective of the VM process is to help the Owner assess and communicate the specific value objectives for the project. This project specific value definition will be crafted and refined throughout the duration of the VM process.

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Value has many aspects typically grouped under the banners of Schedule, Cost and Quality. Examples include:

- Schedule
  - Occupancy Start
- Cost
  - First Cost
  - Lifecycle Cost
- Quality
  - Functionality/Quality
  - Building Aesthetics
  - Sustainability



The "Value Equation" illustrates the relative nature of each of these: As cost and schedule go up, value typically goes down; when quality goes up, value goes up. These three priorities are not mutually exclusive, but they involve tradeoffs. Value is created by optimizing these tradeoffs for the each owner's needs for each unique project. Managing value is not just managing cost, managing schedule or managing quality; it is about managing ALL THREE and doing so simultaneously.

Making good decisions before the VM process will allow VM efforts to focus on optimizing value in lieu of solving fundamental misalignments in value objectives such as the a design that significantly exceeds the budget. The VM process is continuous throughout the evolution of design and does not need to be tied only to specific drawing releases although these milestones usually provide good "snapshots in time" to capture ideas and make decisions.

Four major considerations must be addressed for a successful VM process:

Owner/Agency must lead the VM Process - Involving the entire project team is vitally important as each team member brings specific perspectives, roles, objectives, and contributions to the process. The Owner/Agency portion of the team often includes multiple parties such as those responsible for the operation and maintenance of the facility as well as the users of the facility. It is important for there to be clear roles along with clearly defined responsibilities among the Owner/Agency team members. Since the Owner/Agency team plays a critical decision making role in the Value Management process, it is highly recommended that the Owner/Agency provide a single point of contact to the rest of the team for purposes of maintaining an efficient VM process.

We Work for the Project - The team must individually and collectively work for the benefit of the overall project throughout the VM process. The CM/GC or design-builder must be assigned (in the case of design-bid-build someone must be assigned) to assemble the pricing, schedule, constructability information and administrate the VM process. The entity assigned this responsibility is the ASSIGNED ENTITY and usually takes the lead in updating the VM analysis tool. The Owner/Agency must make decisions that account for the limited resources that must be optimized to create the greatest overall value. The design professional must design to the program and project budget and be conscious of the value tradeoff decisions made by the Owner/Agency. All team members must collaborate to optimize overall value in lieu of protecting their turf to the detriment of the project.

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Earlier the Better - Timing is key to the success of the VM effort. The greatest opportunities to optimize value occur early in the design process. Therefore, the VM process should focus in the early stages of design on major systems (mechanical, electrical, structural, and skin) and other significant decisions affecting programing, site conditions, etc. For example, the design options for the superstructure of a three-story building might include a composite steel and concrete frame, or a concrete beam/joist system. Both options meet the programmatic needs of the building, but one option may be significantly less expensive than the other given the specific design requirements, as well as other factors in the local marketplace. Typically, such an analysis should be performed during the development of the concept or schematic design so that the structural system and bay layouts are set as early as possible and will not affect the evolution of the architecture or systems. A less desirable situation would be if the suggested changing of the structural systems occurred after the design was at a 50% construction drawing level. As the design progresses the VM effort moves to more detailed options with less opportunity for major changes without the potential of having a major impact.

Furthermore, timing is also a key in Owner/Agency decision making. Delaying critical decisions can disrupt the design, procurement and VM process flow leading to lost project value including costly re-design and preconstruction rework. The entire team should work to identify deadlines for the individual decisions for the Owner/Agency to: 1) keep every decision from becoming “critical” and 2) assist the Owner/Agency from missing the opportunity to make a value-based decision while it can still be incorporated effectively.

Everyone Must Understand the Goals - The entire project team must understand the value goals for the project. Some value goals are quantifiable; for example the project must be ready for occupancy before the start of the fall semester at a University, LEED Gold must be achieved, or the budget must not be exceeded. Others such as low maintenance and optimum life cycle cost are not as easy to quantify. It is important for the Owner to communicate their value goals to the team as early as possible in the project so the project team evaluates items during the VM process with these value goals in mind.

For example, the VM process can be used to enhance aesthetics and functionality/quality. While a sloped roofing system using asphalt shingles may be relatively inexpensive compared to a metal standing seam roof, the standing seam roof would generally be considered a superior aesthetic solution and may outlive the shingles by three to four times the life of shingles. The metal roof may also functionally outperform the shingles, affording the Owner/Agency better protection from leaks. A good VM analysis of the two systems would take performance issues, as well as the expense and inconvenience of a roof replacement into account. Therefore, the results of the analysis might determine that the more expensive roofing system is a better value.

Also, using a research laboratory as an example, the VE process can be used to enhance value by determining the best HVAC systems to reduce total life-cycle costs. These labs typically require 100 percent outside air with ten to twelve air changes per hour. Therefore, they consume tremendous amounts of energy to condition and heat (or cool) the incoming air. Although heat recovery systems such as glycol loops or heat enthalpy wheels may increase first-time construction costs, operating expenses (energy consumption) are greatly reduced. Consequently, the increased costs could be recovered in as few as three or four years.

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In both of these examples represent excellent VM ideas. However, the project may already be significantly over budget with the Owner/Agency's highest priority being a set fixed cost; in this case the team must focus VM efforts on cost savings options. The VM process must offer options to optimize value as defined by the Owner/Agency. When the Owner/Agency clearly communicates their value priorities the ASSIGNED ENTITY and the Design professional can calibrate their efforts to efficiently achieve the Owner/Agency priorities.

When a team member fails to meet one of these three requirements other team members may be impacted, sometimes significantly, and may jeopardize the success of the project.

The formal portion of the VM process is typically linked to a formal review and pricing of the design documents. The ASSIGNED ENTITY prepares the Construction Cost Estimates and conducts a constructability review of the design. In conjunction with this effort, the ASSIGNED ENTITY begins reviewing the design and identifying various design options that might enhance the value as described previously; the Owner/Agency and design professional (including consultants) should do the same thing.

The goal is for the ASSIGNED ENTITY to capture ideas from all of the parties in a single document. Sometimes the collection (or brainstorming) of these ideas can be done in a workshop or charrette involving the entire project team. These individual ideas are often referred to as *Value Engineering* suggestions and feed into this overall Value Management process. After a list is compiled, the team should discuss the pros and cons of each option. This evaluation should be *value-based* and NOT just focused on cost reductions.

Because there is often a limited amount of design information available to define the work, extra communication between all members of the project team ensures the accuracy of the pricing and ultimately increases the likelihood of a proper evaluation and categorization by the Owner/Agency.

The ASSIGNED ENTITY should organize the Value Management list by major building components (site work, structure, skin, interior finishes, mechanical, electrical, plumbing, and other systems).

The formatting of this list (aka the "VM Tool") can vary based upon the project needs. The basic information that is required on the list includes the following:

- A numbering system that identifies a specific idea or design alternative
- A basic description of the idea/alternative (the description should evolve to include as much detail as possible so that, as the categorization and status of each item are determined, all project team members clearly understand the impacts and the design professions understand how to document the accepted changes)
- An Order of Magnitude Price (increase or decrease) from the corresponding Construction Cost Estimate for each item
- A method for the Owner/Agency to **categorize the option** (see description below)
- A date before which each decision must be made for each item
- An **approval status** (see description below)
- A method for determining how the cumulative approved changes impact the Construction Cost Estimate

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Item **Categorization** should be based on input from the entire project team, but the final determination of the categorization of each item is the responsibility of the Owner/Agency. It is here that a single point of contact from the Owner/Agency portion of the team is crucial. The category assigned to each item must represent a consensus of the members of the Owner/Agency team. Suggested categories for the Owner/Agency are:

Category A - Regardless of available funding, these items would be recommended

Category B - Reasonable scope changes that offer value while supporting the program objectives

Category C - Drastic modifications altering scope and program objectives

It is vitally important for all team members to take into account the project program and the value goals set forth by the Owner/Agency when identifying the category of each item. The goal is for the project team to agree upon desired changes that will optimize the overall project value over the entire life of the facility. Assigning of items to categories can be done at any time, in a single day or multiple-day workshop, but due to the cost impact being tied to a specific pricing/design document, it is very important to keep close track of the status of each item relative to a specific Construction Cost Estimate and specific design document package.

The VM analysis tool helps the team work through an **Approval Status** - which items have been accepted, rejected, or simply put on hold (pending). Accepted items should also be tracked closely as to whether they have actually been incorporated into the design and reflected in the current documents. Suggested Approval Statuses are:

- Pending
- Rejected
- Accepted
- Incorporated

In determining when to make a "go-no go" decision on each item, it is important to understand the timeline for which a decision must be made. This allows in some instances to delay difficult or uncertain decisions until necessary to maintain design and construction schedules.

Conversely, decisions can be made early and the project team can establish a *Wishlist* that can be tracked for items that could be added back to the project at a later date. For example, a decision could be made to use carpet in lieu of stone flooring in a building lobby during the schematic or design development phase of the work. An item then could be added to the Wishlist that is to add the stone back into the project if enough funds remain in the project budget once the construction progresses to a point where the flooring needs to be procured.

MFC

In determining the value of each item, the team should take in consideration that in many cases, the ideas are conceptual in nature and should establish a contingency for the likelihood that additive or deductive items may be slightly more or less respectively upon execution in the design.

The design professional should not proceed further in design without clear directives as to how to progress the design relative to the items being considered as part of the Value Management process. The ASSIGNED ENTITY should revise the previous Construction Cost Estimate summary information to reflect the Owner/Agency approved options.

In theory, this process could continue over and over again, but depending on how much is expected from the Value Management process, it can delay the design, add additional design/preconstruction cost, and there is a point of diminishing return where the time being spent is no longer worth the expected results. High level options should be evaluated early in the VM process and more detailed oriented options should be evaluated later in the process. This progression focuses effort in the way that maximizes value gains and supports the natural VM process sequence and conclusion.

Every project can benefit from a well-managed Value Management process regardless of whether or not the project is *over budget*. A common misconception is that this process is only necessary when a Construction Cost Estimate is over the approved cost limitation. In fact, it is increasingly being accepted as an industry best practice to go through a Value Management process on **every project** regardless of the status of the current Construction Cost Estimate. The goal of Value Management is to optimize the value by finding the best balance of cost, schedule AND quality, NOT just the cost.

B7. Constructability & Design Review

During all phases of the development of the design, the CM/GC should perform Constructability and Design Reviews of the drawings and specifications. The goal of these reviews is to make certain that the final Design Documents are complete, coordinated, and constructible so as to control costs by minimizing change orders during construction. The CM/GC should also draw upon its past experiences of building other similar projects in order to enhance the quality of the design. Include ways to improve performance, maintainability, sustainability, or to increase lifespan.

Outlined below are a series of examples that might help the Owner/Agency and Design Professional frame expectations as to how the process should work and what kind of information the CM/ GC should provide.

(a) Are the Design Documents Constructible?

Basically, the purpose of this review is to make certain that what has been drawn can actually be built. The CM/GC reviews every element of the design and asks two basic questions:

1. Can each element of the design be built?

2. Can each element of the design be changed to make construction easier, faster, and/or less costly?

The desired outcome of these reviews is to identify issues with the design, and make any changes necessary in the documents before construction, and ideally, before the execution of the GMP Change Order.

MFC

The timing of the reviews should correspond to the major deliverables required of the Design Professional (100 percent Schematic Design, 100 percent Design Development, 100 percent Construction Documents, and similar benchmarks). The format of the actual review or report prepared by the CM/GC can vary, but it should be in the form that best conveys information back to the Design Professional and Owner/Agency. In other words, the CM/GC's deliverable may be in the form of a written report, a red-lined set of drawings and specifications, a charrette or meeting with minutes to document discussions, or some combination of these means.

Outlined below are a few examples that might help frame expectations as to the type of feedback desired from the CM/GC:

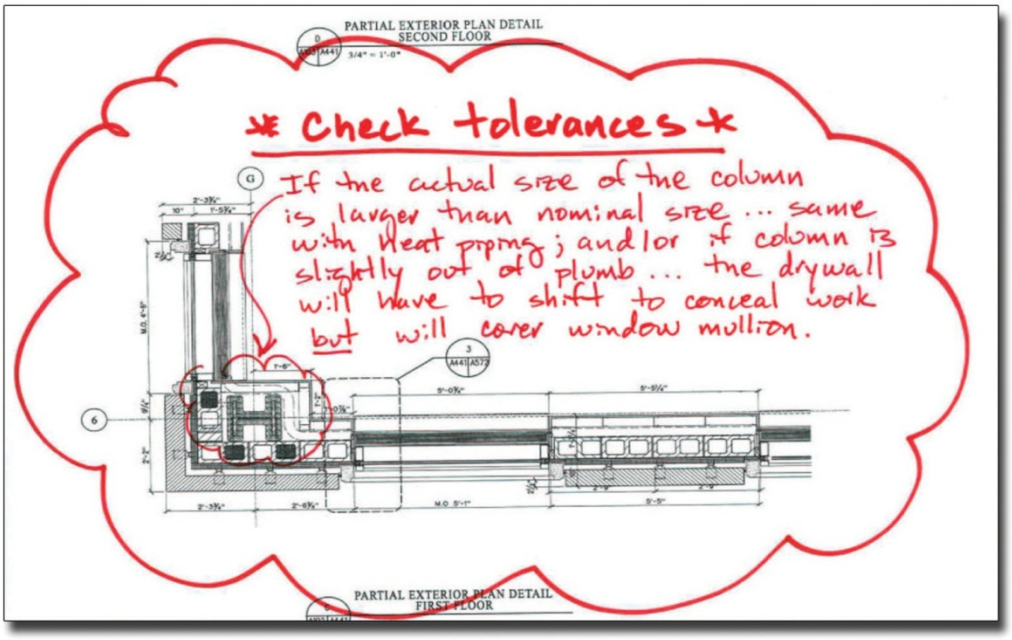
(1) Example One: Means and Methods

The drawings might indicate a basement wall and footing in close proximity to an existing utility or an existing foundation. Based upon the CM/GC's known means and methods required to perform the excavation necessary to create a safe working zone for the foundation work, permanent shoring (soldier beams and lagging) might be necessary to protect the utilities, and underpinning might be necessary to protect the foundations.

Although normal excavation and shoring is a means and methods issue determined by the CM/GC, the fact that this shoring and underpinning is to be permanent indicates that it should be designed and shown on the drawings.

(2) Example Two: Incompatible Tolerances

The allowable construction tolerances for structural framing such as structural steel or cast-in-place concrete are typically far less stringent than that required for finish materials. For example, the allowable tolerance for the erection of steel columns might be up to as much as one-half inch out of plumb per floor. Further, the real sizes of steel columns can be larger (or smaller) than the nominal sizes of the members. In the example shown below, the proposed detail does not allow the CM/GC sufficient adjustments in the drywall framing. If the steel is slightly larger, or out of plumb, the drywall column cover will conceal portions of the window framing (See Figure 60).



MFC

Figure 60: Addressing Incompatible Tolerances

(3) Example Three: Easier to Build Equals Less Money

In addition to finding items that cannot be built as intended, the CM/GC should identify ways to simplify the design in order to make construction easier, faster, and less costly. In the example below, the Design Professional has proposed an exterior cornice detail involving precast concrete, an air intake, and drainage requirements. The CM/GC provided a sketch as to how to simplify the detail by eliminating the plumbing work and the elevated platform. The Design Professional incorporated many of the ideas in the Final Construction Documents, thus saving the Owner/Agency time and money.

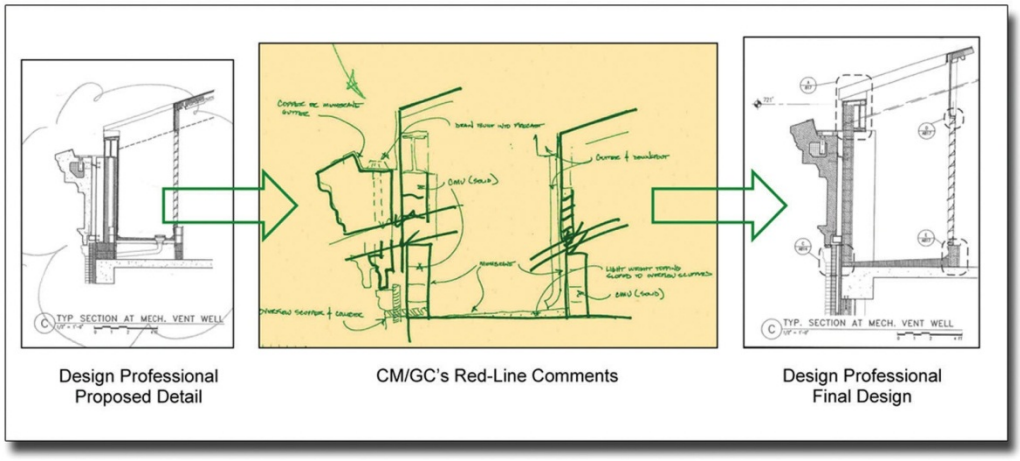


Figure 61: Simplifying the Design

(b) Are the Design Documents Complete and Coordinated?

The CM/GC is to review the Final Construction Documents and determine if they are sufficiently complete and coordinated to be bid to the trade contractors. While the CM/GC is not responsible for design errors and omissions, a thorough review of the documents is good practice to attempt to identify any problems prior to bidding, minimizing the likelihood of change orders during construction. A typical example of a potential omission might be power wiring missing from the electrical drawings to a motorized projection screen that is only shown on the architectural drawings.

MFC

The example below is one that indicates omitted information from the 100 percent Construction Documents. The CM/GC has marked up the drawings indicating that information is needed concerning how to make certain good waterproofing within the masonry wall cavity. Again, it is best to identify this kind of missing information before construction, and ideally, before the execution of the GMP Change Order. This is also a good example of how this type of information is best conveyed to the team. Simple notes on the drawings clearly indicate and communicate the issue.

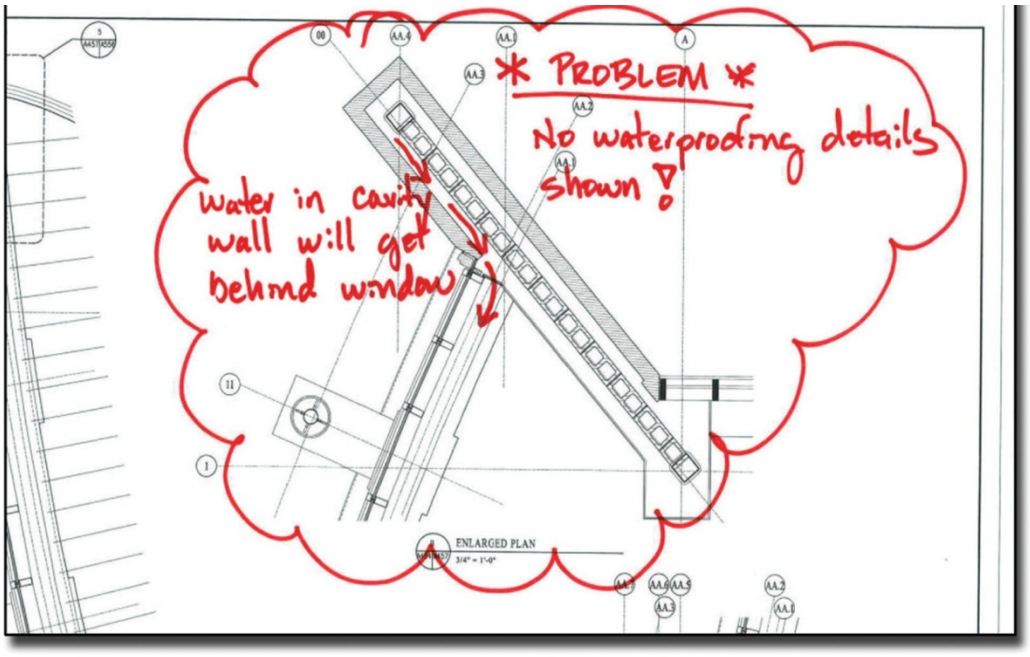


Figure 62: Listing Omitted Information

(c) Will the Design Result in a High-Quality Building?

Given that the CM/GC was selected on the basis of qualifications, it can be assumed that the CM/GC has some expertise in building similar facilities. Hypothetically, it could be possible that the CM/GC has more experience with a specific project type than does the Design Professional. Therefore the CM/GC might be able to offer some amount of informal peer review of the design. Though not always welcomed by the Design Professional, the Owner/Agency should encourage this type of review as the interchange of ideas normally results in a better design.

As an example of this type of review, the CM/GC, having experience building research laboratories, has questioned the Design Professional concept of exposing all of the HVAC equipment on the roof. The point being that the cost to enclose the space in a penthouse configuration would be negligible, whereas the ability to maintain and service the equipment (in a conditioned environment) would be greatly improved. The CM/GC has also questioned the use of an EPDM roof as opposed to a modified bituminous roof. In this example, the CM/GC is attempting to improve the quality of the project on behalf of the Owner/Agency, as opposed to simply looking for cost reduction opportunities or constructability issues.

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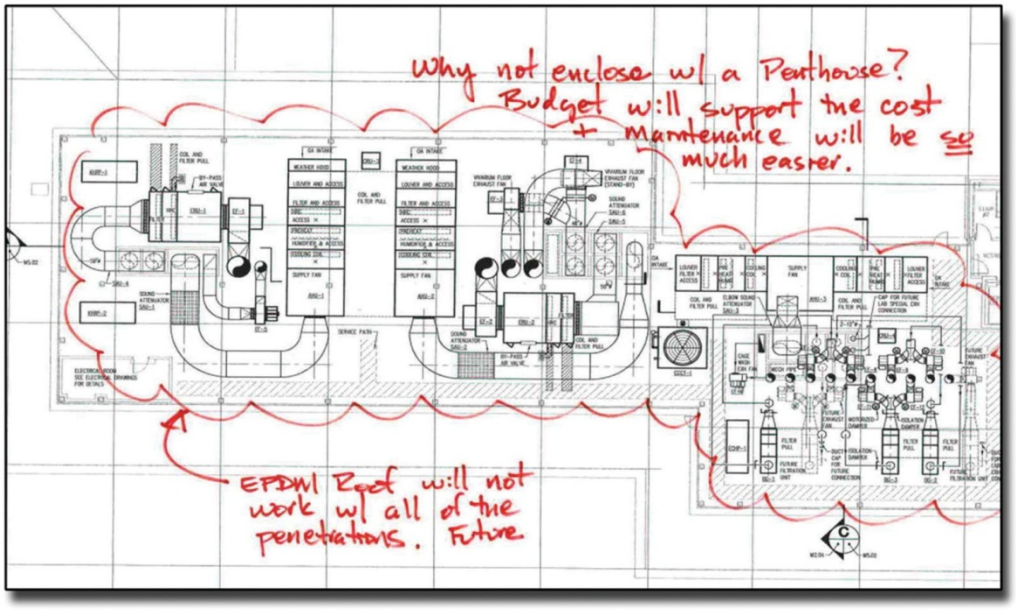


Figure 63: CM/GC's Review

In summary, the Owner/Agency and Design Professional should encourage and require the CM/GC to review the Design Documents as thoroughly as possible. This is a critical process necessary to control costs and enhance quality. Further, these constructability and design reviews should be integrated with the Value Engineering process.

B8. Quality Control (QA/QC)

One of the CM/GC's primary goals and responsibilities during the Construction Phase is to maintain good control over quality and assure the Owner/Agency that all work installed will be in complete compliance with the plans and specifications. To achieve this goal, it is good practice for the CM/GC to prepare a Quality Assurance/Quality Control (QA/QC) Plan that outlines to the Design Professional exactly what kinds of control processes and procedures that the CM/GC will use during construction.

While the QA/QC Plan might reference the CM/GC's Corporate Quality Control Program, it should not be a regurgitation of it. The QA/QC Plan should be a project-specific plan custom tailored to the unique construction requirements for the project. In other words, the QA/QC Plan should be a relatively short and concise document with charts and spreadsheets summarizing the necessary work, as opposed to lengthy philosophical narrations. Depending upon the project, the QA/QC Plan might vary from twenty pages for a relatively simple project, to a three ring binder for a complex project with extensive mechanical and electrical systems.

The development of the QA/QC Plan should occur simultaneously with the development of the design. It should be completed and ready for use prior to the start of construction. At appropriate intervals, the plan should be submitted to the Design Professional for review and comments so that the processes and procedures proposed by the CM/GC are consistent with the requirements and expectations of the Design Professional and Owner/Agency.

(a) Types of Information Contained in the Plan

MFC

The exact format and content of the QA/QC Plan can vary, but a good plan should include the following types of information:

(i) About the Plan

The QA/QC Plan should be a practical tool used often by the on-site Construction Team; therefore, those professionals that would be responsible for implementing this plan should be the ones that authorize it. However, other plans, successfully used on other projects, should be shared with these professionals in order to capture all good practices.

(ii) Overview

The QA/QC Plan should include a brief summary of the CM/GC's commitment and/or approach to quality assurance and quality control. An overall mission statement or project goal such as *zero defects* might be appropriate. This section should acknowledge and incorporate the CM/GC's Corporate Quality Control Program (by reference only) into this plan.

(iii) Roles and Responsibilities

The plan should outline who on the CM/GC's staff is responsible for controlling QA/QC along with their specific roles and responsibilities. It should also acknowledge any other inspection and testing agencies involved such as a Commissioning Agent and/or an independent testing agent.

(iv) Shop Drawing and Submittal Procedures

Quality Control begins in the submittal process, and therefore the QA/QC Plan should provide an overview of the CM/GC's approach to reviewing submittals (prior to submission to the Design Professional) and how the CM/GC intends to use submittals during construction. Not only does this process allow the Design Professional to be assured that

the CM/ GC fully understands the intent of the design, but it also allows the CM/GC to be aware of specific installation procedures required by manufacturers that will be necessary to achieve a high-quality installation. An example might be that a manufacturer of a rubber-backed flooring product requires that the concrete be cured sufficiently (below a specific moisture content) to allow for good adhesion of the product to the substrate. Thus the CM/GC's QA/ QC Plan needs to capture this information during the submittal process and include any slab moisture testing on the list of inspections noted below.

(v) Pre-installation and Pre-Construction Conferences

The QA/QC Plan should outline what specific construction trades should be required to attend pre-installation meetings or conferences before work commences. These meetings are a good method to make sure that the actual craftsmen understand the intent of the design, manufacturer requirements, quality expectations, requirements for mockups, testing, inspections, commissioning, and similar items. The Design Professional may require some of these conferences (typically outlined in the specifications), but the CM/GC (within this section of the plan) may require others.

MFC

(vi) Mockups

Similar to the above requirements for conferences, the specifications might outline requirements for the construction of specific mockups such as brick and curtain wall. The QA/QC Plan might list these required mockups, but it should also capture any additional mockups that the CM/GC might determine to be useful in order for the trade contractors to establish good quality control standards or benchmarks. For example, prior to painting all rooms within the project, the CM/GC might require the trade contractors to paint a single room as a mockup for the Design Professional and Owner/Agency to critique, and use as a benchmark to measure the quality of the painting results of all subsequent rooms.

This section of the plan should also discuss the timing, schedule, location for the mockups, as well as whether or not the mockups are to be incorporated into the work (as with the example above . . . as opposed to one that would be later removed).

(vii) Inspections

The most critical step in the entire QA/QC process is the inspection of the work as it is installed (before it is covered up) to assure the Design Professional and Owner/Agency that the work complies with Drawings and Specifications. The QA/QC Plan should outline in detail (possibly in the form of a matrix or spreadsheet) all of the inspections that will be required during construction. As a minimum, these inspections must capture all those required in the specifications and contract (such as soil compaction testing, rebar placement, concrete slump tests, concrete compressive strength tests, and similar inspections). However, the plan should also capture all other tests and inspections

that will be necessary during construction including those required by the CM/GC (both scheduled and random), the Commissioning Agent (if applicable), and governing authorities (Fire Marshall, City or County Inspectors, and other governing authorities) and code required inspections (IBC Chapter 17-Special Inspections. In addition to on-site tests and inspections, there may be specific factory tests that might need to be performed and witnessed such as ASTM E331 for window systems or a plant inspection of fabricated (but not yet delivered) products such as lab casework or architectural precast concrete. In addition to listing the tests, this matrix or spreadsheet should also capture who (or which agency) performs the inspection, who schedules the inspection, and approximately when the inspection occurs.

(viii) Alerts and Lessons Learned

The project team, using internal and external resources, shall attempt to gather any useful information such as any lessons learned from similar projects, which could be used to avoid a repeat of past mistakes. As a continuation of one of the above examples, the Owner/ Agency may have had problems on other buildings whereby sheet vinyl floors delaminated (became unglued) from the floor due to high moisture content in the concrete slabs. This may even have been a latent defect issue occurring a year or more after occupancy of the building. This information would be captured in an *alert status* to heighten awareness of the issue with the project team, preventing the same defect from reoccurring on its project.

(ix) Deficient Work Log

MFC

The CM/GC should anticipate that there could be problems with deficient or substandard work that requires correction. This section should delineate the process and procedure for identification, tracking and resolving such issues. This is similar to the punchlist process (noted below), but is intended to identify and correct work during construction as opposed to the end of the project.

(x) Punchlist

Developing a punchlist results in a process used to identify, track, and correct deficiencies at the point in the project when the CM/GC is nearing completion of the work.

This section of the plan should first identify which party (CM/GC, Design Professional or Owner/Agency) leads the punchlist process, and how the process is to work. For example, it might be desirous for the CM/GC to complete a punchlist prior to the Design Professional doing the same, in which case, the Design Professional might simply add items to the CM/GC's list. Other times, the Design Professional may completely control the process. The project team should agree on the best process for this project, and memorialize the agreement in this section of the plan.

(xi) Rewards

The QA/QC Plan should develop a process that not only identifies and corrects poor workmanship, but also finds ways to celebrate successes. The plan should allow for recognition and reward for good quality. Therefore, this plan should outline an awards process.

B9. Safety Management Plan

One of the deliverables required of the CM/GC during the Pre-Construction Phase is the Safety Management Plan. ***Note that is the CM/GC's sole responsibility to develop a plan to safely execute the work***. Often, this plan is mistaken with the CM/GC's Corporate Loss Prevention Program (also known as the Corporate Safety Program). Whereas the Loss Prevention Program is

a voluminous document that addresses policies and procedures for all of the CM/GC's projects, the Safety Management Plan is a brief document that outlines additional policies and procedures specific to the current project. In other words, the Safety Management Plan is designed to enhance (but not replace) the other.

Preplanning for safety helps to ensure everyone's well-being, helps to maximize productivity, reduces costs associated with such risks, and minimizes disruption to the Owner. During the Pre-Construction Phase, the CM/GC should conduct a project hazard assessment and identify normal and extraordinary risk at each stage of the construction process. In addition, the CM/GC should identify any aspect of construction that might possibly interfere or disrupt the operations of the Owner. Based upon an evaluation of these risks, the CM/GC should provide a Safety Management Plan that outlines in detail what actions and/or precautions will be necessary during construction to mitigate such risks and disturbances. It would be expected that the form of the plan be in some combination of narratives, lists, and drawings. In addition, the plan (by reference only) will incorporate all of the policies and procedures required under the CM/GC's Loss Prevention Program. While a copy of the CM/GC's Loss Prevention Program should be available for review upon request by the Owner/Agency or Design Professional, the Safety Management Plan should not include a copy within it.

MFC

Outlined below is a sample of what type of information might be included in the plan:

1. Identification of the safety officer(s) for the CM/GC (both on-site and in the home office).

2. Summary of risks identified in the survey and actions necessary by CM/GC (or others) to mitigate risks. For example, it might be required to keep an adjacent sidewalk open during construction. Due to a potential for falling debris within this zone, the CM/GC's Safety Management Plan would require a covered walkway. Another example might be the CM/GC's proposed haul route, which is designed to minimize construction traffic in areas that might interfere with the Owner's operations.

3. An Emergency Response Plan that outlines the following:
   - Names, locations, and phone numbers of other emergency services including fire, hazardous material abatement, utilities, and others
   - Names, locations, and phone numbers of emergency medical treatment facilities
   - A listing of project team emergency contacts (CM/GC, trade contractor, Owner representative, and Design Professional) along with all phone numbers (office, home and cell)
   - Location for posting signage for the Emergency Response Plan

4. A Site Logistics Plan that indicates how the CM/GC will secure the site, safely protect the public during all phases of construction, and minimize disturbances to the Design Professional. Based upon the volume of information that needs to be presented, it is likely that the Site Logistics Plan will consist of several drawings along with some narratives. The following are examples of the type of information that the CM/GC should include on this plan:

   - Perimeter fencing and/or barricades, entrances, and gates (including construction traffic patterns in/out of the site)
   - Building access for construction workers
   - Visitor check-in
   - Road lane closures (if required)
   - Public traffic patterns (by foot and vehicle)
   - Covered sidewalks
   - Sidewalk closures (if required)
   - Field offices and storage trailers
   - Construction parking
   - Material storage & staging
   - Cranes (including air right requirements), scaffolding, and/or hoists
   - Material deliveries
   - Concrete staging (pumps & wash downs)

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   - Special requirements (shoring, underpinning, and other special requirements) to protect existing property (including utilities, buildings, roads, walks, landscaping, and others special requirements)
   - Trash removal
   - Security systems (including alarms, guard facilities, and/or cameras)
   - Environmental control (e.g., sediment and erosion barriers, stabilized construction entrances, storm water management, tree protection, debris, airborne materials and noise)
   - Vibration monitoring and/or testing (during basting or pile work)
   - Signage (e.g., project, entrances, pedestrian way finding, deliveries, parking, Equal Employment Opportunity [EEO], Occupational Safety and Health Administration [OSHA], and safety notices)
   - Hazardous material storage
   - Temporary barriers and/or construction for weather protection
   - Temporary barriers and/or environmental systems for hazardous material abatement

The timing during Pre-Construction for the completion of the Safety Management Plan should be sufficiently in advance of the start of construction so that the Owner/Agency and Design Professional are afforded reasonable time to review and approve the plan. The Owner/Agency's review and approval should be limited to the CM/GC's general compliance with this requirement to have developed a comprehensive Safety Management Plan.

However, the review process is an opportunity for the Owner/Agency to define specific limitations and/or parameters that could change the CM/GC's proposed means and methods to carry out the work.

For example, the Owner/Agency may require that a loading dock for an adjacent building (in the vicinity of the work) must remain open at all times. A similar example should be that a sidewalk or roadway lane must remain open at all times. For an interior renovation project, the Owner/Agency may restrict the use of existing elevators for use of hoisting materials, thus forcing the CM/GC to provide other means of hoisting.

Therefore, the review of the Safety Management Plan is a way for the Owner/Agency to provide input into the way that the CM/GC performs the work so that acceptable means and methods are developed that minimize disruptions to the Owner/Agency.

MFC

SECTION THREE: PROJECT IMPLEMENTATION
Chapter 3.6: Construction Management
Subchapter 3.6.3: Component Change Order and GMP



When the Owner/Agency executes the CM/GC Contract, the Owner/Agency is only authorizing the CM/GC to proceed with Pre-Construction services as described in *SCM Subchapter 3.6.2: Pre-Construction*. No work may occur on site until the Owner/Agency executes either a Component Change Order (CCO) or a Guaranteed Maximum Price (GMP) Change Order.

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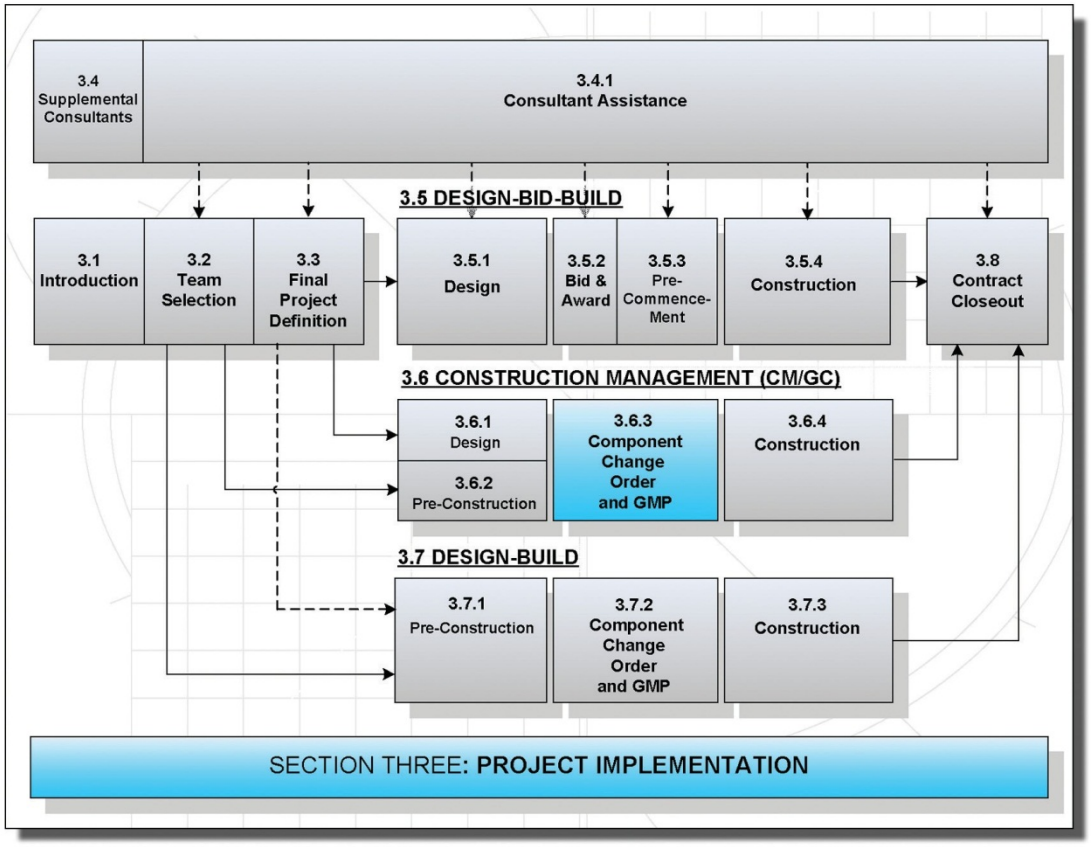


Figure 64: Project Implementation Flow Chart

A. COMPONENT CHANGE ORDER

A Component Change Order (CCO) is a change order authorizing the CM/GC to proceed to construct an element of the project for which the Design Professional agrees to prepare or segregate Construction Documents as a discrete package to permit early procurement and commencement of specific construction elements. In other words, the CCO creates a Guaranteed Maximum Price (GMP) for a portion of the total project only.

Since the mechanics of the CCO are very similar to the GMP Change Order, it is important that *SCM Subchapter 3.6.3(B): GMP Change Order*, which follows this section, should be read in order to understand the nuances about entering into a GMP. The mechanics of the process are outlined in detail there.

The Owner should advocate the use of a CCO only with an understanding of potential risks and with the consultation of the entire project team. By using the CCO process, work begins on the project without an overall GMP being in place; therefore, the Owner assumes the risk of whether or not a Guaranteed Maximum Price (GMP) can ultimately be established for the full scope of work within the Stated Cost Limitation (SCL).

Examples of common CCOs include the abatement of any hazardous materials, the demolition of an existing building to ready the site for new construction, and the relocation of utilities that conflict with new construction. Tasks such as these are good uses of a CCO, as this scope of work is easy to identify, phase, and price. In addition, this type of task will be done regardless of how the design of the new building may be finalized, and therefore creates little added risk to the Owner/Agency by starting early.

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As a continuation of the above scenario, a later CCO might include foundation work and the construction of the superstructure, or whatever other work may follow on the critical path of the CM/ GC's construction schedule. This type of a CCO is inherently more risky in that it basically locks in key design attributes such as the building shape, size, and programmatic layout before the design is finalized. Despite the fact that the Owner/Agency and CM/GC may be fully committed to finalizing the design at a GMP within the SCL, the Owner is not afforded such ultimate price guarantees until the GMP Change Order is executed. Once the Owner starts down this path, it would be very difficult to reduce the size of the building later, should it be needed to do so, for example, to reduce costs. Unless the schedule benefits gained by these fast track techniques offset the added cost risks, further construction of this type should be delayed until a GMP Change Order has been executed.

In the event that these schedule benefits outweigh the cost risks, the Owner/Agency may elect to proceed with a phased design and construction plan that necessitates multiple CCOs. To minimize the likelihood of potential problems, the Owner/Agency should ask a basic question before proceeding: *are we convinced that the CM/GC will be able to later offer a GMP Proposal for the entire scope of work at a price less than the SCL?* An Owner/Agency without sufficient experience to answer this question affirmatively should seek advice or guidance from other agencies that have good working knowledge and experience using CCOs.

The Owner/Agency might consider the following actions:

1. Verify that the remaining contingency is adequate to make certain that the GMP Change Order can be executed within the SCL.

2. Require the CM/GC and Design Professional to clearly demonstrate how they will work together to complete the desired design within the SCL.

3. Verify that the estimated value to complete the remaining work is adequate by Comparing these estimated costs against the costs of other similar projects.

4. Obtain a cost estimate from a third party consultant to verify the CM/GC cost estimate and to reconcile any differences.

5. Create a series of potential changes to reduce costs by scope or quality reductions (that could be implemented if required without making the work performed in an earlier CCO obsolete).

Once committed to proceed with any CCO, the contract requires that the Component Construction Documents meet the following minimum criteria:

1. The design shall reasonably show the intent of the work to be accomplished.

2. Stamped and sealed by licensed P.E. or design professional as required.

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3. The design shall be sufficient for the CM/GC to price the work.

4. The Fire Marshall will provide preliminary review/permitting of CCOs.

5. The design shall be sufficiently detailed to preclude the necessity for rework as the Construction Documents proceed to 100 percent completion.

In addition to the above criteria, the Owner/Agency should not approve a CCO unless the value of the CCO is within the budget for that portion of the work. The Owner/Agency cannot rely on any projected savings that might be generated after pricing future scopes of work. In the event that the value of the CCO exceeds the budget, the scope of the work included in the CCO shall either be revised until the value is within budget or changes made in other scopes of work to offset the added costs.

B. GMP CHANGE ORDER

The Guaranteed Maximum Price (GMP) is the maximum amount that the Owner/Agency is obligated to pay the CM/GC for the construction of the project pursuant to a defined scope of work and schedule. The GMP Change Order is the instrument that fixes this price after much of the Pre-Construction work is finished. By design, the amount of the GMP Change Order cannot exceed the Stated Cost Limitation (SCL) for construction. In other words, the Owner/Agency cannot authorize the CM/GC to spend more money than what is available. The GMP Proposal is an offer made by the CM/GC to facilitate the GMP Change Order.

It is likely that the GMP will be established prior to having completed Construction Documents; therefore, it is essential that the documents that support the GMP Proposal and subsequent GMP Change Order are well developed and carefully prepared in order to successfully control cost during construction as well as to avoid potential misunderstandings and/or claims. The following is *best practice* on how and when to establish a GMP.

B1.Timing of the GMP

The CM/GC Contract allows that the GMP can be established at any time after the completion of the Design Development Documents, but not later than thirty days after the completion of Construction Documents.

The Owner/Agency must carefully evaluate factors such as risk allocation, quality of the Design Documents, size of contingency, timing, and similar factors in order to determine when to require a GMP. Outlined below are examples of these factors that could help to determine the optimal timing for the GMP.

Often, the anticipated construction costs associated with early design solutions exceed the SCL, necessitating Value Engineering and redesign. The GMP cannot be established until there is an acceptable design solution so that the CM/GC is willing to offer a GMP Proposal at a cost less than the SCL. Further, the GMP should be established after the CM/GC has received bids from trade contractors for at least 50 percent of the value of construction.

In the event that the CM/GC bids work to the trade contractors based on incomplete documents, it is essential that the Design Professional and Owner/Agency disclose as much information as possible about how the design will be finished so that the CM/GC can communicate that information to the bidders. To the extent that the Design Professional has not yet fully produced such information, the GMP should be delayed.

MFC

Although the above recommendations represent *best practice*, the GMP can be established at any time during design, and the natural tendency is for the CM/GC to guarantee construction costs as early as possible. However, the Owner/Agency should not advocate an earlier GMP unless the entire project team is experienced at doing so and fully understands potential risks, examples of which are outlined below.

The earlier the GMP is established in the design process, the more guesswork as to the exact scope of work that will eventually be required by the Final Design Documents, which makes the CM/GC's cost estimates inherently less accurate and reliable. At this early stage, it is also unlikely that the CM/GC has based the GMP on many (if any) actual bids from trade contractors. The CM/GC may require larger contingencies for these added risks that, by nature, could create budget pressures that force cuts in quality and scope. The CM/GC's early GMP is likely to overstate the true costs of construction. Even though the CM/GC will most likely realize savings after bidding is completed with the trade contractors, these savings are not typically available to the Owner/Agency until the end of construction. In this scenario, the Owner/Agency's desire to have an earlier GMP could reduce the overall scope and quality of the construction.

Conversely, it is also possible that a CM/GC may underestimate the cost of the work when establishing a GMP based upon early Design Documents. This could result from several different factors including poor communication, inadequate design information, or insufficient experience on the part of the CM/GC when performing conceptual estimates. The CM/GC could sustain large financial losses, which normally cause the CM/GC's performance to suffer with respect to schedule, quality, and cost control (claims).

Another fundamental challenge with an early GMP is that the scope of the final design is not yet known, forcing the CM/GC to make a series of assumptions about what the Design Professional will eventually design. Typically these assumptions are included in the GMP Change Order.

Although the assumptions are based largely upon the CM/GC's experience in constructing similar projects, the assumptions could still be wrong, thus setting the stage for potential disagreement as to whether or not the scope of the final design is consistent with the GMP.

As a practical example of this, an Owner/Agency might request a GMP at the completion of the Schematic Design. Because little quantifiable design information yet exists, the CM/GC may have to guess on material quantities on many items including the size of various foundations. The GMP Change Order would include a summary of assumptions that the CM/GC made in the preparation of the GMP including the size of the foundations. Assuming that the final design indicated footings that were larger than those assumed, the CM/GC would request an appropriate adjustment to the GMP in order to be compensated for the added cost. A common reaction for the Owner/Agency would be to reject the request thinking that it already had a guaranteed price for the construction regardless of how the design was finalized—not true in this example as the CM/GC qualified the price by making the price contingent upon a specific understanding of how the design would be finalized.

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The example above illustrates the requirement for some sophistication on part of the Owner/Agency and Design Professional. Both must understand and manage risks associated with defining the scope of the construction work in terms of *words* versus *drawings*.

Put another way, because of the absence of drawings, a *written description* must be created that outlines how the design will be developed. If the Owner/Agency and Design Professional are not prepared to manage this process and the resulting risks, the GMP should be delayed until the design is further developed.

An Owner/Agency must always remember that until there is a GMP, the price is not guaranteed by the CM/GC. This remains true even if the CM/GC has performed numerous prior estimates, all of which may have indicated that construction costs would be less than the Stated Cost Limitation (SCL). Therefore, if the timing of the GMP is delayed until the end of the design, it is possible that the sum total of all of the bids received from the trade contractors might exceed the SCL forcing a costly and time-consuming redesign. In other words, a GMP at the completion of the design affords no better control over costs than the Design-Bid-Build delivery method.

The Owner/Agency, Design Professional, and CM/GC shall openly discuss all of the above issues and determine the optimum time to establish the GMP based upon the collective experience of the team as well as the specific nature of the project. Again, the best industry practice would be to establish the GMP at 50 percent Construction Documents.

B2. Submittal Requirements

Unfortunately, most people think of the GMP Change Order as simply the one that fixes the price. It obviously does do that, but more importantly, the GMP Change Order sets the maximum price for a defined design, scope of construction work, and the schedule. Therefore, the change order proposal necessitates the preparation of many attachments, and the requirements for such are outlined in the contract. These attachments include, but may not be limited to the following:

1. The Estimate (breakdown of the price)
2. The list of Design Documents (drawings, specifications, addenda, bulletins, and other documents) that the CM/GC relied upon to prepare the price
3. The summary of all work that is excluded from the price
4. The construction schedule
5. The shop drawing approval schedule
6. The component schedule indicating any required phasing of the design
7. The Design Professional's concurrence with the above schedules
8. The staffing plan and wage salary schedule
9. The proposed budget for the CM/GC's overhead costs (site offices, temporary structures, staffing, and similar costs)
10. The clarifications and assumptions made by the CM/GC in preparation of the GMP

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B3. GMP Documents

The Owner/Agency, Design Professional, and CM/GC must exercise due care in the preparation and review of these documents in order to successfully use the GMP as a tool to manage design and construction changes for successful cost control and quality control. The following is included to assist project team members in the preparation of some of these important documents.

B4. Establishing the Price

The GMP is defined as the total of (1) the estimated cost of the work; (2) the construction contingency; (3) the CM/GC's fee; and (4) the CM/GC's overhead costs and expenses. The GMP Change Order should consolidate and account for all previous Component Cost Change Orders executed prior to the GMP. The following are procedures as well as some basic expectations as to what should be provided by the CM/GC in the GMP Proposal.

B5. Cost of the Work

The cost of the work is defined in great detail in Section Four, Part Four of *Construction Management Agreement (CM/GC),* but it is intended to include the true costs of construction from the trade contractors (and any self-performed work by the CM/GC if the Owner has approved such). The cost of the work might be in the range of 85 percent to 90 percent of the total value of the GMP, but could be lower depending upon the specific nature of the project. Obviously, the cost of the work is the largest component of the GMP.

Prior to submission of the proposal, the Owner/Agency, Design Professional, and CM/GC should discuss and agree upon the format of the proposed estimate in order to facilitate a better and faster review. Reference SCM *Subchapter 3.6.2: Pre-Construction* for a full discussion of this. The CM/GC is then expected to produce whatever information is necessary to justify the cost of the work.

In general, the estimate should be presented in sufficient detail so that the Owner/Agency and Design Professional can fully review, understand, audit, and justify the estimate. Whether the information is included in the actual proposal or not, the Owner/Agency and Design Professional should have full open book access to whatever information they need to validate the proposed cost of the work.

As mentioned before, the best industry practice would be to establish the GMP after the CM/GC has been able to receive bids from trade contractors for at least 50 percent of the total value of construction; therefore, a large component of the GMP will be based upon actual bids. The GMP Proposal should clearly indicate those bids, and the Owner/Agency and Design Professional should have the access and opportunity to review them.

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In addition to the actual bids from the trade contractors, up to 50 percent of the total cost of the work will have been estimated by the CM/GC (without bids). This portion of the estimate must also be prepared in sufficient detail so that the Owner/Agency and Design Professional can fully evaluate the CM/GC's anticipated costs.

The estimate shall detail quantities and unit costs; therefore, this portion of the estimate should have several hundred line items. For example, the Owner/Agency and Design Professional should not expect to receive an estimate with a lump sum price for the value of the HVAC system (assuming that work had not yet been bid). The estimate should fully detail all of the labor, material, equipment, and other vendors. The detailed estimate might indicate pounds of sheet metal ductwork (by type and price), lineal feet of pipe (by size, type and price), controls (by number of points and price), and so on.

Some contracts do not permit the inclusion of allowances in the GMP. Allowances are typically used for a scope of work in which very little information is available at the time of the preparation of the GMP Change Order. In the past, it was very common for the GMP to include allowances for work such as landscaping, signage, millwork, audiovisual equipment, and similar work. This requirement puts more pressure on the Design Professional to better define this work earlier in the design process.

In the event that allowances are permitted, the Owner/Agency, Design Professional, and CM/GC should not only carefully define the scope of work to be included in the allowance, but also a reasonable and reliable estimate sufficient for the work. The Owner/Agency should be aware that the GMP will be increased or decreased depending upon the actual costs, and the Owner/Agency has this risk.

Using landscaping as an example, it might be appropriate to establish an allowance for landscaping if no design information is available. However, the definition of the allowance should clearly define the scope of work as to whether it includes plant material only, or whether it is also to include seeding, sod, irrigation, mulch beds, hardscaping, site furnishings, and similar items. Further, the amount of the allowance should be accurate. In other words, if the cost of landscaping for all past similar projects was about $200,000, it would be inappropriate to establish an allowance at only $50,000.

B6. Construction Contingency

The definition of, and purpose for, the construction contingency is outlined in Section Four, Part Four of the *Construction Management Agreement (CM/GC)*. In general, this is an amount of money that the CM/GC is allowed to spend (with Owner/Agency approval) for costs not otherwise anticipated or included in the cost of the work in the GMP Proposal. These costs might be caused by unanticipated events (arising from changes in market conditions), poor performance or defaults by trade contractors, omissions or oversights in the GMP estimate, accelerated costs needed to overcome potential delays, and other unanticipated events.

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If the GMP is established very early in design, the required contingency will be much higher than that required if the GMP is established after the completion of the design. Although the average amount for this contingency is about 3 percent of the total construction costs (based upon establishing a GMP at 50 percent Construction Documents), every project is unique; therefore, the exact amount should be determined based upon the specific risks unique to the project.

Prior to the submission of the GMP, the Owner/Agency, Design Professional, and CM/GC should meet and openly discuss all of the potential risks involved in the construction of the project, and create a matrix that assigns responsibility for these risks. For example, the additional construction costs associated with work such as rock excavation, undercut of poor soils, asbestos abatement, relocation of unknown utilities, overtime due to weather delays, and similar work are just a few examples of how the scope and cost of construction can escalate during construction.

In addition, the team should capture all of this information and create a matrix that lists different potential changes in scope or costs, as well as to assign from where the costs are to be funded. To the extent that the costs are to be funded by the CM/GC (without an adjustment to the GMP), the amount of the contingency should be adjusted by the CM/GC to appropriately deal with these potential costs.

Obviously, the more risk the CM/GC is expected to bear, the larger the contingency should be. The Owner/Agency should note that some risks might be beyond what the CM/GC is capable of taking, and the resulting contingencies included in the GMP Proposal might be larger than that necessary if the Owner/Agency had assumed the same risk. An example is when the Owner/Agency desires the CM/GC to assume the risk for relocating unknown utilities (not mapped) that might be encountered in excavation work.

The cost assigned by the CM/GC for such risks might much higher than what the Owner/Agency had expected; therefore, compromise between Owner/Agency and CM/GC would allow the risk to be shared appropriately in order to achieve an optimal GMP within the SCL.

In the event that the GMP is established prior to the completion of the design, the construction contingency should include an amount to account for estimating errors and omissions resulting from incomplete Design Documents. This is sometimes referred to a *design contingency*. However, this contingency should not be confused with the Owner's design contingency that is accounted for outside the CM/GC's GMP. After the bidding to the trade contractors is complete, the amount of this contingency should be evaluated to determine if any savings (if applicable) could be returned to the Owner. (see CM Contingencies)

B7. CM/GC's Fee

The CM/GC's fee (home office overhead and profit) is determined during the qualification-based selection process and subsequent contract negotiations. This fee may be a percentage of the total construction costs or as a fixed lump sum amount. The fee included in the GMP Proposal shall be the same fee as that agreed to during the contract negotiations. Section Three, Part Four of the *Construction Management Agreement (CM/GC)* provides definition as to what expenses (home office overhead) are included in this fee and any of those costs shall not be allowed in the CM/GC's overhead costs noted below.

B8. CM/GC's Overhead Costs and Expenses

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Overhead costs are defined in Section Four, Part One of the *Construction Management Agreement (CM/GC),* but they are basically the costs of the CM/GC's field overhead, including the salaries of the onsite staff, temporary offices, bonds, insurance, permits, temporary construction, temporary utilities, cleanup, layout, and similar overhead items. These overhead costs are not to be confused with the CM/GC's home office overhead, which by definition in the CM/GC Contract are to be included in the CM/GC's fee only.

Similar to the fee above, the CM/GC provides an estimate of these expenses during the qualification-based selection. However, the Owner/Agency and Design Professional should be aware that the estimate of these costs may differ from the original submission since factors that affect these costs can change during the development of the design.

For example, the scheduled duration of the project has a direct impact on these costs as most are driven by time (such as salaries and temporary office rental). It is also likely that the CM/GC may include some of this work in the bid packages for the trade contractors. Examples of these items might include cleanup, layout, or cranes and hoisting. Other expenses can change depending upon the nature of the design and/or required phasing of the construction.

Should the CM/GC propose to change the estimate of these expenses from that which was originally submitted, the change shall be done with appropriate explanation and justification. Since the CM/GC will have prepared multiple estimates prior to the presentation of the GMP Proposal, the estimate of these expenses should have been revised in earlier estimates. The GMP Proposal should not be the first time that the CM/GC has made the Owner/Agency and Design Professional aware of any changes in these expenses. In general, it is expected that the level of effort required by the CM/GC (in terms of staff) shall not change significantly from the time of contract negotiations.

B9. Establishing the Date for Material Completion

The date that is desired for the Material Completion of the project is included in the Owner/Agency's program of requirements and in the CM/GC Overall Project Schedule submit- ted during the Pre-Construction Phase. The CM/GC shall base the GMP on achieving that date, which may necessitate the inclusion of the cost of overtime or other schedule premiums. However, prior to preparation of the GMP Proposal, the Owner/Agency, Design Professional, and CM/GC should have discussions regarding any extraordinary efforts (cost premiums) required on the part of the CM/GC that might be necessary to achieve completion prior to the proposed date of Material Completion. The Owner may elect to adjust the date to avoid the cost of these premiums. The construction schedule (attached to the GMP Proposal) shall reflect the agreed date.

B10. Establishing Liquidated Damages

Liquidated Damages (LDs) are not a penalty, but rather an estimated value of losses incurred by the Owner/Agency by not having the project delivered on time. The values of liquidated damages are included in Section One, Part One of the *Construction Management Agreement (CM/GC)*. Obviously, the larger the amount of the LDs, the more risk that the CM/GC has; therefore, the CM/ GC may include specific schedule premiums in the price to make timely completion a certainty.

The CM/GC Contract requires that the amount of the LDs is to be "fair and equitable." The Owner/ Agency should attempt to estimate these costs based upon the actual impact of damages. An ex- ample would be in the construction of university student housing. Assuming that construction was late, the Owner/Agency would incur additional expenses to rent temporary lodging for the students. This cost is easy to quantify and could be used to establish the cost of damages. Most projects are more difficult to quantify; therefore, the Owner/Agency might consult with other agencies for guidance. The amount of the damages can vary from project to project.

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B11. Defining the Scope of Work Included in the GMP

Given that the design is not likely 100 percent complete, it is the responsibility of the CM/GC is to provide a written narrative as to any exclusions, clarifications, or assumptions that might be necessary to define the scope of work priced in the GMP. In other words, it is the CM/ GC's responsibility to tell the Owner/Agency how the CM/GC believes that the Design Professional will finalize the design.

From the Owner/Agency's perspective, a brief list would be desirable. The Design Professional should define as much of the design as possible without the CM/GC making assumptions as to how the design will be finished. The Owner/Agency and Design Professional must remember that these lists are the basis of the GMP; therefore, the lists will potentially be used later to evaluate whether or not change orders to the GMP are justified. To the extent that the final design differs from these assumptions, a justification for a change in the GMP is created. Therefore, the preparation and subsequent review of these lists are critically important to establish a meaningful GMP.

It is also critically important that the CM/GC carefully outline the assumptions made in preparation of the GMP; failure to do so may result in a waiver to claim additional costs despite how the design is completed. As an example, drawings may be complete enabling the CM/GC to quantify the amount of painting needed for gypsum walls. However, paint specifications and/or a finish schedule may not establish the type of paint. If the CM/GC has based the GMP on using flat latex paint, but fails to state that assumption, it would be difficult for the Owner/Agency to justify an increase to the GMP in the event that the final design requires more expensive epoxy paint.

B12. Review of the GMP

If the GMP Proposal is less than the Stated Cost Limitation (SCL), there is a tendency to approve the proposal without a thorough review. This should not happen. The Owner/Agency and Design Professional must sufficiently review the GMP Proposal in order to validate the cost and the CM/GC's statement of basis. The time for acceptance or rejection of the proposal is limited to fifteen days in Section Three, Part Three of the *Construction Management Agreement (CM/GC).* In the event that the Owner/Agency does not have expertise or experience in reviewing such a proposal, the Owner/Agency should seek help from other resources including other State agencies, or the Program Manager (if applicable).

As described above, the CM/GC will have prepared a great deal of information as part of the proposal. The CM/GC Contract requires a meeting with the CM/GC prior to its acceptance to present this information in a manner that the Owner/Agency and Design Professional deem necessary.

Whether the information is included in the actual proposal or not, the Owner/Agency and Design Professional should have full open book access to the information they need to validate the price and scope of the GMP. This meeting and subsequent detailed review will be the basis for the approval or rejection of the proposal.

A common mistake is to focus the review on the price only. Given that the design is probably not completed at this point, the CM/GC has many assumptions as to how the design will be completed. It is the responsibility of the CM/GC to produce this list of assumptions and exclusions. While neither the Design Professional (including the Design Professional's consultants) nor the Owner/Agency has a duty to discover potential errors in the proposal, it is their responsibility to review the proposal until they are satisfied that the CM/GC has priced the correct scope of work. Failure to do so could lead to later disputes concerning whether or not the final design is consistent with the basis of the GMP.

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For example, using a continuation of the scenario described earlier, the CM/GC was forced to assume specific footing sizes due to insufficient design information at the time of the GMP. Under this scenario, the CM/GC clearly stated that the GMP was based upon an understanding of these specific footing sizes. As a precaution, it would be prudent for the Design Professional to have the structural engineer validate that the sizes assumed by the CM/GC so that the CM/GC would later be entitled to a change order.

As previously described, the goal would be to attach a list of assumptions and exclusions to the GMP that would have the least items possible. If specific assumptions made by the CM/GC are needed to clarify the intent of the design, the Design Professional should provide the additional design information. After receipt of the enhanced design information, the CM/GC should modify the pricing (if appropriate) and remove the assumption from the list.

If the Owner/Agency or Design Professional finds any assumption that is in conflict with the intent of the design, the CM/GC shall be given direction to correct the pricing and remove the assumption from the list. Further, any specific assumptions that are not required to clarify the design shall be removed from the list.

When reviewing each of the individual clarifications and assumptions prepared by the CM/GC, the Owner/Agency and Design Professional should ask a basic question: **Is the CM/GC correct in its assumption?**

If the answer is **NO**, the Design Professional should clarify the intent of the design; the CM/ GC should be afforded the opportunity to revise its price proposal, and the item should be removed from the list.

If the answer is **YES**, the item should remain on the list and the assumption becomes a basis of the GMP. In other words, it becomes a means of measuring whether or not the design is completed consistent with the GMP. If the design is not completed in accordance with the assumption, the GMP may require an adjustment.

If the answer is **UNKNOWN**, the assumption should remain on the list. If the specific assumption is later found to be wrong, this could justify an adjustment to the GMP; however, the Owner/Agency can designate that the costs for a specific type of item be funded from the CM/GC's contingency.

Such designation should be made prior to the execution of the GMP Change Order, and the CM/ GC shall be afforded the opportunity to modify the amount of contingency included in the proposal. The GMP Change Order shall appropriately reflect such agreements.

After thorough review of these assumptions and exclusions, the Owner/Agency should reconcile any exclusion with the Total Project Budget. In other words, the Owner/Agency should identify the funding source of any work that is excluded by the CM/GC. In the event that such work is not accounted for in the overall project budget, the SCL for the construction work may need to be decreased appropriately to make certain that the Owner/Agency has adequate total project funding.

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After review of the GMP Proposal, and prior to the expiration of the fifteen days after receipt of the proposal, the Owner/Agency must approve or reject the proposal. Procedures for approval and rejection are outlined in Section Three, Part Three of the *CM/GC Contract*; however, the Owner/ Agency can reject the proposal with an expectation that the CM/GC is to revise and resubmit either a better proposal or a corrected proposal.

To help facilitate this whole process, the Owner/Agency may wish to establish a one-day (or multiple day) workshop with the entire project team to review and revise the GMP Proposal as necessary.

In this way, the CM/GC can better clarify the assumptions made in the preparation of the proposal. The Design Professional and Owner/Agency can then follow the process outlined above, allowing the CM/GC to revise the proposal accordingly.

The Owner/Agency also has the ability to reject the proposal with a desire to terminate the contract. Termination procedures are outlined in Section 5, Part 3 of the *Construction Management Agreement (CM/GC)* as well as *SCM Subchapter 3.6.4 D8(b): Construction*. However, prior to contract termination, the Owner/Agency should seek appropriate guidance as necessary to fully understand any cost and schedule ramifications associated with that action.

The presumption is that if the contract were terminated, the Owner/Agency would competitively bid the work. However, the time required to advertise, bid, and contract for the construction could significantly delay the construction of the project. Assuming the CM/GC's pricing was accurate; the Owner/Agency should not expect bids to be significantly less than the CM/GC's proposal.

B13. Replacement of the GMP with a Lump Sum

Section Three, Part Three of the *Construction Management Agreement (CM/GC)* allows for the GMP to be replaced with a lump sum price at the Owner/Agency's sole option. While such a conversion does in fact simplify some of the accounting and reporting procedures, it inherently changes the relationship with the CM/GC to that more indicative of a Design-Bid-Build approach. Unless there are compelling reasons to do so, the GMP should not be replaced with a lump sum.

Under the CM/GC delivery method, the CM/GC is reimbursed for actual costs plus a fee up to the price of the GMP. Unless the Owner/Agency has modified the contract to include a shared savings clause, the CM/GC is not entitled to retain any savings should the GMP be greater than the final cost of the work (plus the fee and allowable overhead costs). Upon completion of the project, the Owner/Agency realizes any savings. Such savings could be significant, especially if the GMP was established before the CM/GC received many bids from trade contractors; therefore, it is possible that a scenario could arise that presents a compelling justification to replace the GMP with a lump sum in order to recover savings early. But a better alternative to conversion might be for the CM/GC to allow an early release of contingency via a change order to the GMP.

In the event that it is desirous to replace the GMP with a lump sum, the Owner/Agency should be keenly aware that during this process, the CM/GC has the opportunity to enhance its fee. The CM/GC retains all savings after conversion to the lump sum. In order to reduce this potential, the Owner/Agency should request a proposal from the CM/GC only after (1) the design has been completed, and (2) the CM/GC has received bids for all of the work. The format of the proposal should be such that the Owner/Agency can fully audit the CM/GC's anticipated final costs.

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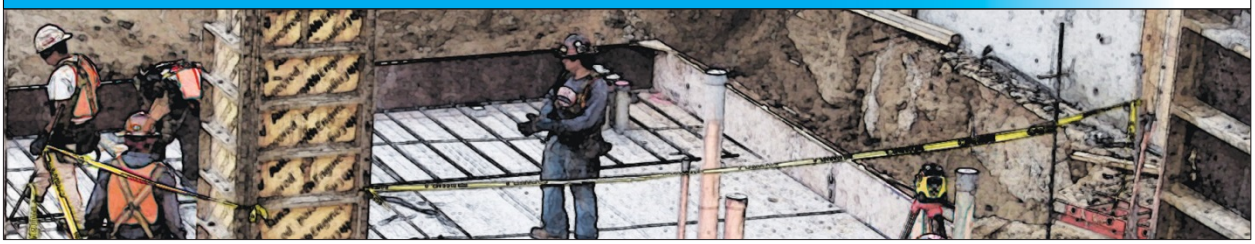
The CM/GC shall produce an open book, detailed estimate supporting the proposal that lists itemized committed costs, anticipated costs, contingencies, and fees. The CM/GC shall provide copies of all information that the Owner/Agency or Design Professional might require to audit these costs including, but not limited to, subcontracts, purchase orders, bids, accounting records, payroll journals, and similar items. Section Four, Part One of the Construction Management Agreement (CM/ GC) includes provisions to hire an auditor at the request of the Owner/Agency with the cost of such services to be paid from the CM/GC's Contingency.

While it may be appropriate for the CM/GC to include contingencies in the lump sum proposal for the estimated potential costs for various risks, the Owner/Agency should carefully evaluate and justify the amount of such contingencies. If the CM/GC has passed such risks to the trade contractors, contingencies should not be allowed in the proposal. Again, all unused contingencies at the end of the project essentially become additional fee or profit for the CM/GC.

SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.6: Construction Management

Subchapter 3.6.4: Construction Phase



A. DESIGN PROFESSIONAL CONSTRUCTION ADMINISTRATION SERVICES

The Design Professional Construction Administration Services commence upon the issuance of either a Component Change Order (CCO) or a GMP Change Order and a letter of authorization from the Owner/Agency requesting such services. The Construction Administration Service duties consist of both office and field services.

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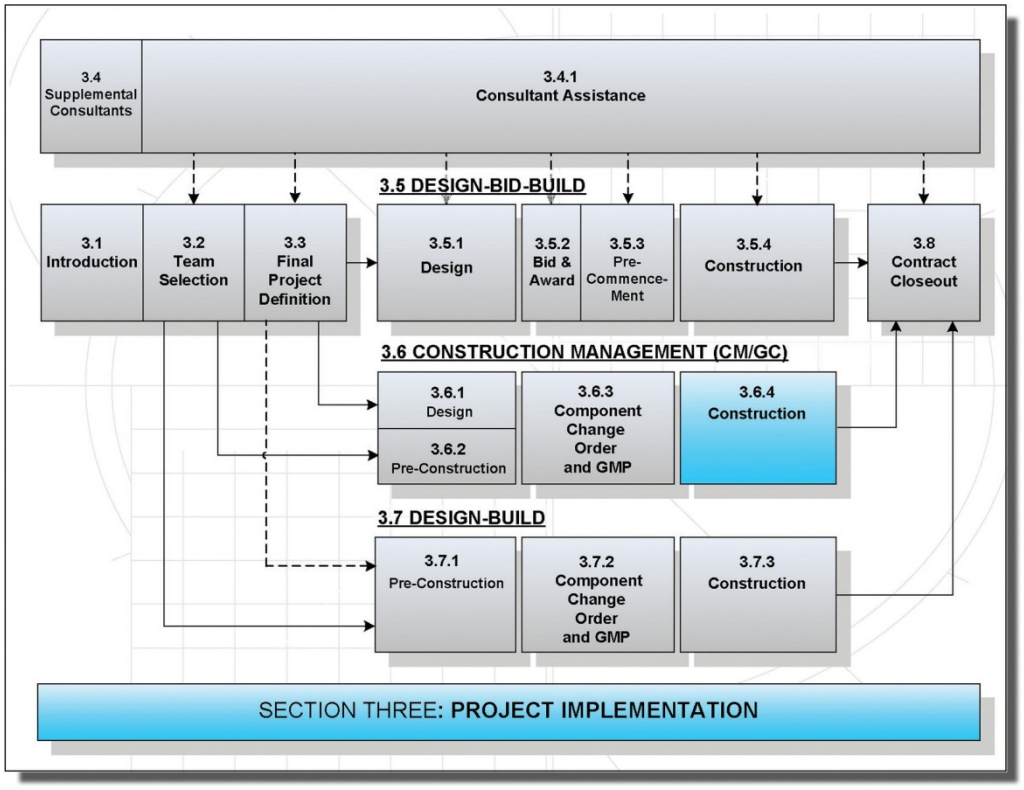


Figure 65: The Project Implementation Flow Chart

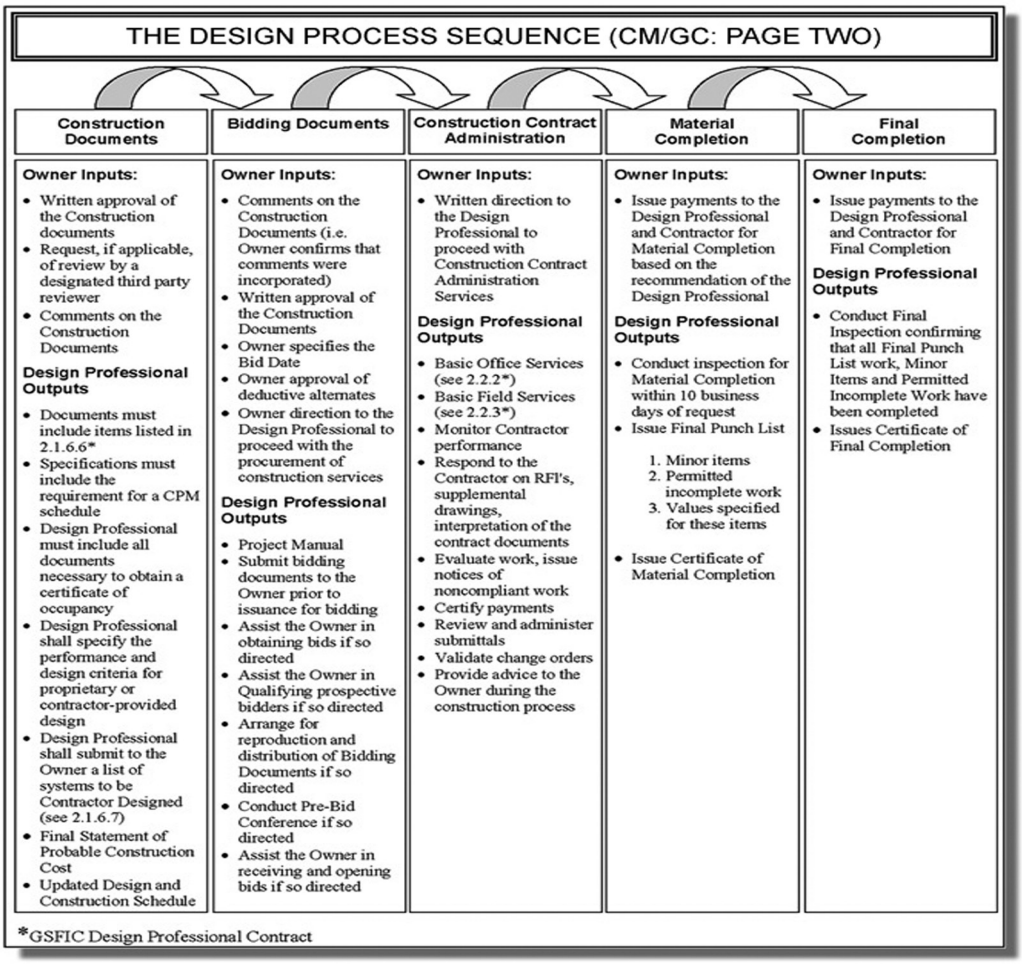
These services are necessary for the Design Professional to administer the requirements of the Contract Documents, interpret and clarify the Contract Documents, and require the CM/GC's compliance with the Contract Documents. Office Services are performed during the Construction Phase and are those administrative and technical tasks that do not require or comprise of on-site observations such as maintaining correspondence and records; reviewing shop drawings and samples; submittals; answering requests for information; making revisions, corrections, or clarifications to the Contract Documents; and similar administrative and technical tasks. See Section Two, Part Two of the Design Professional Contract (CM/GC) for additional explanation and guidelines on Office Services.

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The table below summarizes the Design Professional's Construction Administration Sequence:

Table 6: The Design Process Sequence



THE DESIGN PROCESS SEQUENCE (CM/GC: PAGE TWO)

Construction Documents	Bidding Documents	Construction Contract Administration	Material Completion	Final Completion
Owner Inputs: • Written approval of the Construction documents • Request, if applicable, of review by a designated third party reviewer • Comments on the Construction Documents **Design Professional Outputs** • Documents must include items listed in 2.1.6.6* • Specifications must include the requirement for a CPM schedule • Design Professional must include all documents necessary to obtain a certificate of occupancy • Design Professional shall specify the performance and design criteria for proprietary or contractor-provided design • Design Professional shall submit to the Owner a list of systems to be Contractor Designed (see 2.1.6.7) • Final Statement of Probable Construction Cost • Updated Design and Construction Schedule	**Owner Inputs:** • Comments on the Construction Documents (i.e. Owner confirms that comments were incorporated) • Written approval of the Construction Documents • Owner specifies the Bid Date • Owner approval of deductive alternates • Owner direction to the Design Professional to proceed with the procurement of construction services **Design Professional Outputs** • Project Manual • Submit bidding documents to the Owner prior to issuance for bidding • Assist the Owner in obtaining bids if so directed • Assist the Owner in Qualifying prospective bidders if so directed • Arrange for reproduction and distribution of Bidding Documents if so directed • Conduct Pre-Bid Conference if so directed • Assist the Owner in receiving and opening bids if so directed	**Owner Inputs:** • Written direction to the Design Professional to proceed with Construction Contract Administration Services **Design Professional Outputs** • Basic Office Services (see 2.2.2*) • Basic Field Services (see 2.2.3*) • Monitor Contractor performance • Respond to the Contractor on RFI's, supplemental drawings, interpretation of the contract documents • Evaluate work, issue notices of noncompliant work • Certify payments • Review and administer submittals • Validate change orders • Provide advice to the Owner during the construction process	**Owner Inputs:** • Issue payments to the Design Professional and Contractor for Material Completion based on the recommendation of the Design Professional **Design Professional Outputs** • Conduct inspection for Material Completion within 10 business days of request • Issue Final Punch List 1. Minor items 2. Permitted incomplete work 3. Values specified for these items • Issue Certificate of Material Completion	**Owner Inputs:** • Issue payments to the Design Professional and Contractor for Final Completion **Design Professional Outputs** • Conduct Final Inspection confirming that all Final Punch List work, Minor Items and Permitted Incomplete Work have been completed • Issues Certificate of Final Completion

*GSFIC Design Professional Contract

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It is also the Design Professional's responsibility to evaluate the CM/GC's estimates and appropriate funds prior to the GMP Change Order and reduce cost differentials.

Field Services comprise of on-site observation, evaluation and documentation by the Design Professional and its consultants to guard against non-conformity of the work with the Contract Documents, observations and documentation of any compliance concerns with the Overall Project Schedule, the superintendence of the work, and the qualifications of the skilled workers.

See Section Two, Part Two of the Design Professional Contract (CM/GC) for additional explanation and guidance for Field Services.

A1. Monthly Progress Report

The Design Professional shall provide a monthly written report on the progress and condition of the work.

A2. Monitoring CM/GC Performance

It is the Design Professional's responsibility to approve, accept, and consent to the covering of, and certifying work for payment. This responsibility is not shared with employees or other CM/GCs of the Owner/Agency.

A3. Responding to the CM/GC

The Design Professional is the initial interpreter of the Contract Documents. The Design Professional shall respond to a Request for Information (RFI) from the CM/GC within five (5) business days and to an issue, claim, or complaint within fourteen (14) calendar days from receipt of written notification. The Design Professional should provide or recommend a standard RFI form with basic information for the submittal and response to all RFIs. The CM/GC should list RFI's sequentially in a chronological order. The Design Professional and CM/GC should keep separate RFI Logs.

A4. Evaluation of the Work

The Design Professional shall visit the site during critical phases of construction and have access to all work in progress. The Design Professional shall report deviations from the Contract Documents and, if warranted, have authority to issue a Stop Work Order for such non-compliant work.

Section Two, Part Two of the Design Professional Contract (CM/GC) requires that the Design Professional and Owner/Agency predetermine and approve the number of site visits necessary for each design discipline to provide adequate field services. Additional site visits over the predetermined number can be treated as Additional Services. It should be noted that complex projects (as defined by building function, size, or limited construction duration) may necessitate more Construction Progress Meetings and site visits than might be required for a basic simple project. Therefore it is important that the number of predetermined site visits be adequate to cover field services and inspections normally required for a specific project. Note that this provision quantifies the Design Professional's scope of Basic Field Services. Additional site visits should not be necessary unless the project is experiencing construction delays or an unusual event requiring onsite observation.

MFC

The Design Professional shall not have control over nor be responsible for acts or omissions of the CM/GC. The Owner shall endeavor that all construction communication pass through the Design Professional.

A5. Certification of Payments to the CM/GC

The Design Professional shall review (and correct if required) and certify the CM/GC's monthly Application for Payment (periodical estimate). The Design Professional shall submit an *Advice on Construction Progress* with the CM/GC's Application for Payment. The Design Professional shall not approve payment for work that is noncompliant with the Contract Documents. The Design Professional shall withhold 200 percent of the value of all incomplete work after Material Completion.

A6. Submittals

The CM/GC shall prepare a submittal schedule, which is coordinated with the Overall Project Schedule, in accordance with the Pre-Construction Phase activities in Section Two, Part One of the Construction Management Agreement (CM/GC), and shall be reviewed by the Design Professional within fourteen calendar days of receipt.

After approval, all subsequent submittals (shop drawings and similar submittals) shall also be reviewed within fourteen calendar days provided they are submitted in accordance with the submittal schedule. The submittal schedule should be coordinated with the construction schedule so that adequate time is allowed for submittal review. The submittal schedule should allow additional time for complicated, large submittals such as structural steel or concrete, window systems, and MEP systems. It may be necessary for the CM/GC to send submittals that require the Design Professional consultant's review directly to the consultant, with a copy of the transmittal to the Design Professional, in order to expedite the turn-around time; however, the Design Professional is still responsible for reviewing and coordinating the information contained in the expedited submittal.

The Design Professional and its consultants shall not redesign, add, or change scope on shop drawings without first requesting a change by obtaining an approval by the Owner/Agency and issuing a change order to the Contract Documents.

A critical part of the submittal review and Project Closeout is the submission and review of the O & M Manuals. If requested, the Design Professional shall include the Owner/Agency in the review of major system (MEP) submittals and the initial O & M Manual submittal. This would be done as a courtesy in an effort to make this documentation available to the Owner/Agency at the earliest time possible. The CM/GC shall submit the O & M Manuals for review and approval prior to any required Owner training sessions. Note that the Owner training sessions and review and approval of the O & M Manuals must be completed prior to Material Completion.

MFC

A7. Changes in the Work

It is normal for changes in the Contract Documents to occur during the Construction Phase of a project. The change could be the result of an unforeseeable job site condition, an error in the Contract Documents, a necessary revision to the building code, or a new requirement of the Owner/ Agency. Approval of the Owner/Agency is required prior to any change of the work. The Design Professional will be responsible for providing the information as listed in the Figure 66, the "Two Step" Change Order Process:

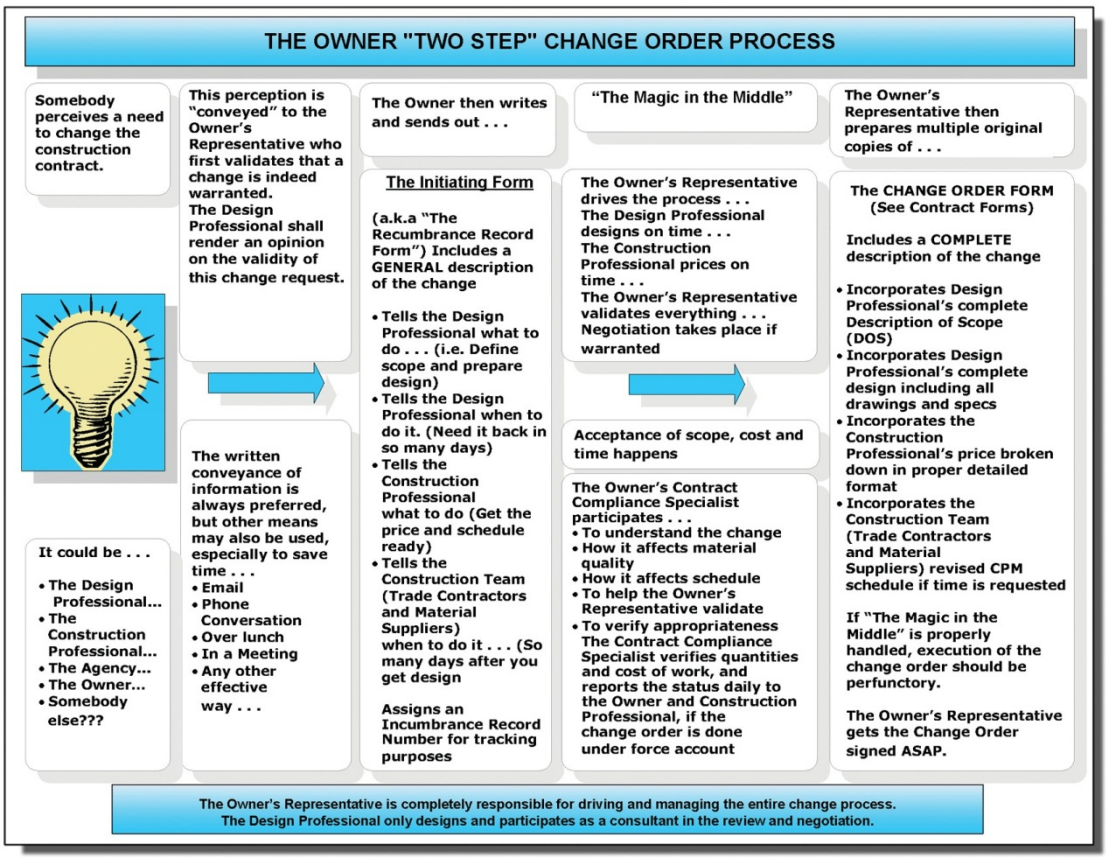


Figure 66: "Two-Step" Change Order Process

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Note that the Design Professional may be due additional compensation on change orders that increase the scope of work for the project or due to changes not caused by the Design Professional's oversight.

A8. Project Completion

Historically, Project Completion has been a problem with most State projects. Current Construction Documents have been revised to define two levels of Project Completion: *Material Completion* followed by *Final Completion*. Reference *SCM Chapter 3.8: Contract Closeout* for contract closeout procedures, guidelines, and checklists.

A9. Additional Services

In addition to those services described under Basic Design Services and Basic Contract Administration Services, Design Professionals and their consultants may be commissioned to provide certain additional Design Services and Construction Contract Administration Services. Section Three: Additional Services and Exhibit A of the Design Professional Contract (CM/GC) provide specific guidance and instruction on how to identify and contract for additional services.

Additional services that are determinable prior to executing the Design Professional Contract should be identified in Exhibit A: List and Description of Additional Services or expounded on and included in Exhibit L: Capital Asset Accounting of the Design Professional Contract (CM/GC).

Compensation for those Additional Design Services and Construction Contract Administration Services that can be agreed upon shall be included in the contract compensation amount. If compensation cannot be agreed upon, the Additional Design Services or Construction Contract Administration Services shall be performed at the hourly rates set forth in Exhibit B of the CM/GC Design Professional Contract, plus reimbursable expenses listed in Section Four Part One of the Design Professional Contract (CM/GC) with a limitation as to the maximum amount specified.

A10. Compensation and Contract Adjustments

The Design Professional Contract is a lump sum fee contract. The lump sum fee amount is based upon negotiations and agreement between the Owner/Agency and the Design Professional and includes fees for Design Professional consultants. Guidance for determination of the appropriate fee amounts are provided in the Instructions to Preparers of the Design Professional Contract between Design Professional and Owner for Construction Management (CM/GC), which is the first section of the Design Professional Contract (CM/GC).[5] The initial lump sum fee would include the following components:

- Basic design service fee
- Basic Construction Contract Administration Fee, which includes an agreed quantity of site visits and building official visits
- Agreed additional services that are described in Exhibit A and Exhibit L of the Design Professional Contract (CM/GC)

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The cost for expenses such as travel, site visits, long distance telephone, materials and supplies, and in-house and consultant printing is included in the Basic Services Fee. The cost for reproduction of drawings and Project Manuals for Owner/Agency review, reviews by building authorities having jurisdiction, and twenty-five copies to be provided to the selected CM/GC shall be reimbursed at actual cost, but not greater than the most competitive market rate. Site visits, in addition to the quantity included on Exhibit A of the Design Professional Contract (CM/GC) shall be reimbursed at the unit price established in Exhibit A of the Design Professional Contract (CM/GC).

The Design Professional is entitled to payment of the Basic Design Services Fee in accordance with the following schedule:

SCHEDULE DESIGN	20 PERCENT
DESIGN DEVELOPMENT	25 PERCENT
CONSULTANT/BIDDING DOCUMENTS	50 PERCENT
CONSTRUCTION PROCUREMENT	5 PERCENT

Partial payments for Basic Design Phase Services may be made monthly with the amount prorated over the scheduled time required to complete a particular phase. In no case shall the total of the partial payments for a particular phase exceed the total fee for that phase.

Fee payments to the Design Professional for Basic Construction Contract Administration shall be made on a monthly basis in equal proportion to the amount of work certified for payment by the Design Professional on the Application for Payment of the CM/GC until such payments equal ninety percent of the Basic Construction Contract Administration Services Fee. When the Certificate for Material Completion has been executed by the Design Professional, additional partial payment of five percent of the Basic Construction Contract Administration Services fee will be paid. When the Certificate of Final Payment has been executed by the Design Professional and upon completion of all of the requirements of the CM/GC Design Professional Contract, including furnishing Record Documents, final payment shall be made in a sum to complete payment of 100 percent of the Basic Construction Contract Administration fee.

Payments to the Design Professional on account for approved additional services and authorized reimbursable expenses shall be made monthly as follows:

- **Lump Sum Additional Services**: Commensurate with the percentage of completion of the service
- **Hourly Additional Services**: Based on the hourly rates and time records of the Design Professional and the Design Professional's consultants
- **Reimbursable Expenses**: Based on documented costs

B. CM/GC ADMINISTRATIVE SERVICES

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After successfully completing Pre-Construction, and within ten days from receipt of the Proceed Order from the Owner/Agency, the CM/GC shall commence the work in accordance with the Construction Management Plan, Overall Project Schedule, Quality Control Program, Safety Program, and similar guidelines that were developed and approved during the Pre-Construction Phase.

B1. Pre-Construction Meeting

If a significant amount of time has elapsed (more than a month) between the Pre-Construction coordination meeting and the receipt of the Order to Proceed from the Owner/Agency, the CM/GC may elect to schedule and host a Pre-Construction Meeting to present the current Construction Management Plan and Overall Project Schedule and to confirm agreement on the coordination procedures and processes for prosecuting the work.

B2. Construction Means & Methods

The CM/GC shall have control of all means and methods—all labor, materials, and services necessary to produce the construction of the project in accordance with the Contract Documents, including the entire construction of the various separately identifiable parts thereof. Work includes, and is the result of, performing or providing all labor, services, and documentation necessary to produce such construction; in addition, work includes, and is the result of, furnishing, installing and incorporating all equipment, fixtures and supplies into the construction, all as required by the Contract Documents.

B3. Construction Progress Meetings

In addition to the CM/GC's internal project management activities for efficient and orderly management of the project, the CM/GC shall schedule and host at the site biweekly Construction Progress Meetings with the Owner/Agency, Owners representative, and the Design Professional(s) representatives. This meeting serves to communicate project progress and to discuss and resolve or develop a plan to resolve outstanding questions or issues affecting the timely completion of the work. The CM/GC shall issue minutes of the meeting indicating decisions made and plans of action that include the identification of the party responsible and a date for resolution of the outstanding issue(s).

B4. Coordination with Design Professional and Consultants

Where the CM/GC has determined that the Contract Documents are not complete, definite, and clear enough to complete the work, the CM/GC shall submit a request for information to the Design Professional in writing with a copy to the Owner/Agency for additional information.

B5. Changes to the Work

Changes in the work may occur either as a result of a change requested by the Owner/Agency or by a change to the work due to the discovery of some unforeseen existing physical condition not anticipated in the Contract Documents.

(a) Owner's Right to Make Changes

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Without invalidating the contract, the Owner/Agency may authorize or order extra work or changes by altering, adding to, or deducting from the work or the contract time. Changes to the work can only be authorized by an executed change order.

(b) Unforeseen Circumstances

By executing the Construction Contract, the CM/GC acknowledges that it has visited the project site and has taken into consideration all open and apparent conditions that might affect the work. No claims for changes based on lack of knowledge of existing conditions are permitted unless the existing physical conditions cannot be discovered by a reasonably observant person. Changes to the work relating to conditions that were not open and apparent, and are materially different from the Contract Documents, may be adjusted by change order.

(c) No Change without Owner Approval

Neither the Design Professional nor the CM/GC can make any change in work without an approved change order. Without a change order, the CM/GC shall have no claim for payment for cost, fee, or revision to the completion schedule based upon or resulting from changes to the work. This requirement does not apply where changes in the work are required due to emergency situations when the CM/GC takes reasonable precautions to protect the safety of persons, property, work, or of adjoining property.

(d) Change Order Forms

The change order is the written instrument by which adjustments in the contract sum and contract time are legally modified. The change order shall be in the format as shown in Exhibit I: Specimen Change Orders in the Construction Management Agreement (CM/GC).

The change order must be accompanied by a breakdown of the quantities, prices, and expenditures for labor and materials used in computing the proposed change in the contract scope.

The CM/GC's breakdown must have a separate line item for each trade contractor's proposed cost on the letterhead of the CM/GC and properly signed by an authorized representative of the trade contractor. The breakdown shall include the following oath:

> *I do solemnly swear to the best of my knowledge, information, and belief, that the costs shown hereinabove do not exceed current costs for like services or materials in the locality of the project and, in the case of a force account, the costs represented do not exceed the actual costs to the CM/GC, and that the quantities shown do not exceed actual requirements.*

An approved change order may be issued as a Lump Sum Change Order or a force account or Indefinite Amount Change Order.

MFC

Change orders may be issued under either of the following conditions and shall contain the following language as appropriate:

(i) For Lump Sum Change Order

The payment and extension of time, if any, provided by this change order constitutes compensation in full to the CM/GC and its trade contractors, suppliers, and for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all de- lays or time-related costs thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any claims related thereto against the Owner/Agency and the Design Professional, and design consultants.

(ii) For Force Account or Indefinite Amount Change Order

The payment and extension of time, if any, provided by this change order constitutes interim compensation to the CM/GC and its trade contractors, suppliers, and for all costs and markups, directly and indirectly attributable to the changes ordered herein, and for all de- lays or time-related cost thereto and for any acceleration costs for performance of changes within the time stated and to be completed by the Material Completion and Occupancy Date and for any claims related thereto against the Owner/Agency and the Design Professional, and design consultants.

(iii) For All Change Orders

Any changes or reservations by the CM/GC to the representations and releases in the change order, or refusal of the CM/GC to execute the change order, shall be a material breach of this contract that may be sufficient cause to issue a declaration of default.

Each change order shall include all time and monetary impacts of the change. Failure to include a change in contract time or contract sum in a change order shall be considered either or both a Zero Time or Zero Price Change Order and shall waive any change in contract time or contract sum at a future date. Commencement of work upon a change order is conclusive proof that the CM/GC has accepted the change order.

(e) Change Order Process

Using the proper format, the Owner/Agency, through the Design Professional, shall issue a change order request or directive in writing to the CM/GC. The CM/GC shall respond to the Design Professional in writing within fourteen days of receipt of the request or directive. The CM/GC's written response shall contain proposed modifications, with appropriate breakdown and backup, in the contract time and sum. The Owner/Agency and Design Professional shall review the CM/ GC's change order proposal and respond to the CM/GC within fourteen days of receipt of the CM/ GC's change order proposal.

If the CM/GC's change order proposal is acceptable, the CM/GC shall execute the change order, certified by Design Professional and executed by the Owner/Agency.

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(f) Disagreement between Design Professional and CM/GC

Should the Design Professional and the CM/GC disagree as to the amount of the adjustment of the contract sum and contract time and such disagreement is not resolved between them in seven days, the Owner/Agency, desiring the change order work to proceed, may make direct the following actions:

(i) As to Contract Sum

Advise the CM/GC to proceed under a change order for force account of indeterminate amounts.

(ii) As to Contract Time

Advise the CM/GC to proceed on the basis that the Design Professional's assessment of the adjustment in the contract time is final and shall be the basis for the change order.

(iii) Other Disagreements

Should the Design Professional disagree with the CM/GC as to matters other than contract sum or contract time, the dispute shall be reviewed by the Owner/Agency as set forth in Section 5, Part 2: Contract Adjustments and Disputes of the CM/GC Construction Management Agreement (CM/GC).

(g) Costs Associated with the Change Order

The allowed cost for an approved change order would include all labor cost, including cost of payroll, overtime premiums, and fringe benefits, for employees directly employed in the change of the work and all materials and equipment incorporated into the work, and the equipment used in accomplishing the work. If the equipment used in accomplishing the work is rented expressly for accomplishing the change in the work, the allowable cost shall be the actual rental rate according to the time of rental agreement. Allowable cost for rental equipment shall be limited to the rates submitted and approved during the Preconstruction Phase and as descended in the Construction Management Agreement (CM/GC). Other allowable costs include the following:

- Cost increase in premiums for CM/GC's (Payment and Performance bonds)
- Applicable rates and consumer taxes
- Any other cost directly attributable to the change in work and approved by the Owner/ Agency, such as professional engineer cost and similar costs

Costs that are specifically *not allowed* for changes in the work:

- Cost due to negligence of the CM/GC, trade contractor suppliers, or any other person for whom the CM/GC is responsible

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- Home office expenses for payroll cost for the CM/GC's or any trade contractor's or supplier's officers, executives, administrators, accountants, counsel, engineers, timekeepers, estimators, clerks, and other similar administrative personnel who are not directly included in the change in the work, but are only providing general administration of the work
- Home Office and Branch Office expenses of CM/GC's, trade contractor's, or supplier's home and branch offices, capital expenses, interest on capital used for the work and other general overhead expenses of the home office and branch office
- Wages and benefits of a foreman, if the foreman is concurrently supervising other work at the project site
- Premiums for bonds required of trade contractor by the CM/GC

(h) Subsurface Conditions

Unless the Contract Documents stipulate specific quantities and units of rock or unsuitable soils, the CM/GC can assume that material below the surface of the ground to be earth and other material that can be removed by power shovel or similar equipment and would not be allowed as a change in the work due to unforeseen conditions. Should conditions encountered below the surface of the ground be at variance to the number of unit requirements as indicated on the Contract Documents (if any), and if the subsurface material is significantly different than what cannot be removed by a power shovel or similar equipment, it shall be classified as

Compensable Rock, and would be allowed as a change in the work due to unforeseen conditions, and absent any agreed unit price established in the Construction Contract, the contract sum and/or Time may be adjusted by change order. Section Three, Part Four, *Compensable Rock* in the Construction Management Agreement (CM/GC) includes specific definitions and descriptions of the material that classifies the material as non-compensable and compensable rock.

(i) Other Unforeseen Conditions

If unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents, then the CM/GC shall give notice to the Design Professional promptly before conditions are further disturbed, but in no event later than two (2) business days after the first observance of the conditions.

The Design Professional shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the CM/GC's cost or time required for performance of any part of the work, the Design Professional may recommend an adjustment by change order to the contract sum or contract time, or both. If the Design Professional determines that the conditions at the site are materially different from those indicated in the Contract Documents and that no change in the terms of the contract is justified, the Design Professional shall so notify the Owner/Agency and the CM/GC in writing, stating the reasons.

B6. Changes in Contract Time

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All change orders must state that the contract time and the Material Completion and Occupancy Date either are not changed or are increased or decreased by a specific number of days. The CM/GC must provide written justification for the extension to the Design Professional and to the Owner/Agency. The written justification must demonstrate an anticipated actual increase in the time required to complete the work beyond that allowed by the contract as adjusted by prior change orders to the contract. No extension to the contract time shall be allowed by the contract as adjusted by prior change orders to the contract.

No extension to the contract time shall be allowed unless the additional or changed work increases the length of the critical path beyond the Material Completion and Occupancy Date. If approved, the increase in time required to complete the work shall be added to the contract time. The Owner/Agency may decrease, by change order, the contract time when an Owner/Agency-requested deletion from the work results in a decrease in the actual time required to complete the work as demonstrable on the Critical Path Method (CPM) Schedule.

B7. Determining the Cost to Owner for Changes

The cost to the Owner/Agency of any changes shall be determined in one of the following three ways:

(a) Lump Sum

The change order cost is determined by mutual agreement of a lump sum amount changing the contract sum allowed for completion of the work. The change order shall be substantiated by documentation itemizing the estimated quantities and costs of all labor, materials, and equipment required. The price change shall include the amount allowed for the CM/GC's overhead and profit.

(b) Unit Price Work

The change order cost is calculated by using unit prices and calculating the number of net units of work in each part of the work that is changed, either as the work progresses or before work on the changes commences, and by then multiplying the calculated number of units by the applicable unit price set forth in the contract or multiplying by a mutually agreed unit price if none was provided in the contract. No additional percentage markup for overhead or profit shall be added to the unit price, as this markup is included within the unit prices.

(c) Force Account

The change order cost is accomplished by force account in the event the CM/GC and Design Professional cannot agree on the cost of the change order or the cost cannot be reasonably determined prior to beginning the work. A force account is the establishment by the Owner/Agency's encumbrance record of a maximum dollar amount (Stipulated Maximum Sum) beyond which no changed work may be undertaken, subject to amendment for funding all costs of a change order.

MFC

As the work authorized by the change order progresses, the CM/GC must provide an accounting of actual costs incurred in accomplishing the work. The accounting must include an annotated copy of the Overall Project Schedule to accurately show the status of the work at the time the change order utilizing a force account is issued, to show the start and finish of the changed work, and to show the status of the work when the changed work is completed.

Actual costs, except as otherwise agreed to in writing by the Owner/Agency, shall not exceed those prevailing for the trades or crafts, material, and equipment in the locality of the project, shall include only those items listed as allowable in Section Three, Part Four of the Construction Management Agreement (CM/GC), and shall not include any of the cost listed as not allowable in Section Three, Part Four of the Construction Management Agreement (CM/GC). The Owner/Agency shall be permitted, on a daily basis, to verify such records and may require such additional records as are necessary to determine the cost of the change to the work.

The Owner/Agency shall prescribe the dollar limit for a force account in writing by authorizing a Stipulated Maximum Sum of money to be committed toward execution of the said change, and the CM/GC shall have no authority to perform any changes that will cost the Owner/Agency in excess of the Stipulated Maximum Sum. The Stipulated Maximum Sum shall be based on the estimated cost of the work and the CM/GC's allowance for overhead and profit as set forth in Section Three, Part Four of the Construction Management Agreement (CM/GC), including any time extension and a reasonable contingency.

It shall be the sole responsibility of the CM/GC to apply in writing to the Owner/Agency, NOT to the Design Professional, for an increase in the stipulated maximum sum if the total value of the work is approaching and might exceed the stipulated maximum sum. Within fourteen days of the conclusion of such work ordered by force account, the CM/GC and the Owner/Agency shall arrive at the total lump sum cost for the change order. Such lump sum cost shall be incorporated into and finalize the change order, and shall reference and close the encumbrance record establishing the force account.

B8. Overhead and Profit

(a) Overhead and Profit

The percentage for overhead and profit to be used in calculating additive changes in the work (not including changes covered by unit prices) shall not exceed the percentages for each category listed below. Said percentages for overhead and profit shall be applied only on the net cost of the changed work, (i.e., the difference in cost between original and revised work).

(i) CM/GC

If the CM/GC does all or part of the changed work with employees that work directly for the CM/GC, its markup for overhead and profit on the changed work the CM/GC performs with its employees shall not exceed contractual limits of the net Allowable Costs, if any.

MFC

(ii) Trade Contractor

If a trade contractor does all or part of the changed work with employees that work directly for the trade contractor, the trade contractor's markup for overhead and profit on the work the trade contractor performs with its employees shall not exceed contractual limits of the net Allowable Cost.

(iii) CM/GC's Markup on Trade Contractor Work

The CM/GC's management markup on the trade contractor's net additional allowable expenditures shall not exceed contractual limits.

(iv) Second and Lower Tier Trade Contractor

If a trade contractor at any tier does all or part of the changed work with its own employees, the trade contractor's markup on the trade contractor's work with its own employees shall not exceed contractual limits of the net allowable cost, if any. The management markup of a trade contractor's work by the CM/GC and all intervening tiers of trade contractors shall not exceed contractual limits for the CM/GC and additional contractual limits for a trade contractor, or a total not to exceed contractual limits for the changes to the work. The above contractual limits shall be applied to the net Allowable Costs, if any, as limited and defined in Section Three, Part Four of the Construction Management Agreement (CM/GC). If the net difference between Allowable Costs and credits to the Owner/Agency result in a decrease in the Owner/Agency's cost, the amount

of credit allowed the Owner/Agency shall be the net decrease without any allowance for overhead profit. All costs that are not specifically allowed in Section Three, Part Four of the Construction Management Agreement (CM/GC) or disallowed in Section Three, Part Four of the Construction Management Agreement (CM/GC) shall be considered as overhead and shall be exclusively compensated in the allowances provided for in the above paragraph.

C. TIME

By execution of the Construction Contract, the CM/GC has represented to the Owner/Agency that the CM/GC is experienced in managing construction in accordance with contract requirements and in a timely manner within the stipulated contract time.

Time is of the essence of the contract and all scheduled completion times are contractual obligations when not met may be a cause for a claim of breach of contract.

C1. Commencement, Prosecution, and Completion

The CM/GC is required to (1) commence work under this contract written two (2) business days of the date specified in the in the Proceed Order from the Owner/Agency; (2) prosecute the work with faithfulness and energy; (3) install the various parts of the work with equal steps shown on the Overall Project Schedule and at the same rate (or better) as shown on the Overall Project Schedule; and (4) to complete the work within the contract time.

MFC

In the event the CM/GC shall be delinquent in respect to achieving milestones duties established in the Overall Project Schedule, the CM/GC, within seven days of receipt of a written document of the Owner/Agency, shall cause its employees, trade contractors, and suppliers to perform work at an accelerated pace necessary to promptly bring the work into compliance with the Overall Project Schedule. The CM/GC can have no claim against the Owner/Agency for the cost for accelerating the work to bring the work into compliance with the approved Overall Project Schedule.

C2. Overall Project Schedule (Construction Progress Schedule)

During the Preconstruction Phase of the work (See *SCM Subchapter 3.6.2: Preconstruction* and Section Three, Part Five of the Construction Management Agreement (CM/ GC), the CM/GC must submit for review by the Design Professional and approval by the Owner/Agency, a Construction Progress Schedule showing duties and the completion of the work required by the Contract Documents.

Upon recommendation by the Design Professional and approval by the Owner/Agency, the Construction Progress Schedule shall become the Overall Project Schedule, and becomes a part of the Construction Contract.

C3. Monthly Schedule Updates

The CM/GC must submit with the monthly pay request an Overall Project Schedule update to show completed activities and any changes in sequencing, activities durations,

and completion of milestone dates. Failure by the CM/GC to maintain a rate of progress consistent with the milestone dates in the Overall Project Schedule may be grounds to withhold, in whole or in part, any request for payment as may be necessary to protect the Owner/Agency from loss due to failure of the CM/GC to prosecute the work in accordance with the Overall Project Schedule.

C4. Damages for Delay, Extensions of Time

As a general rule, the CM/GC is not entitled to any damages for delay or to any other reimbursement as a cost of the work, or to an increase in the contract sum for direct, indirect, impact, or disruption damages arising because of delay or other hindrance of any kind whatsoever except as described below as Extensions to General Rule for Construction Delay and as permitted in Section Three, Part Five of the Construction Management Agreement (CM/GC). Extensions of the contract time shall be the CM/GC's sole remedy for delays which are not the fault of the CM/GC and are included in the three following sections.

(i) Force Majeure

MFC

If, between the Proceed Order and the Material Completion and Occupancy Date, as amended, the CM/GC is unable to perform or is delayed in the performance of any of the terms and provisions of this contract as a result of (1) governmental preemption of materials in connection with a national emergency declared by the President of the United States; (2) riot, insurrection, acts of terror or terrorism, or other civil disorder affecting performance of the work; or (3) earthquakes, or unusual and extreme weather conditions constituting Acts of God, then, and in any such event, such inability or delay shall be excused, and the time for completing the affected portions of the project (and the entire project, if applicable) shall be extended for such reasonable period of time as the delay has affected the performance of the work hereunder. The CM/GC shall take all reasonable actions to minimize the delay caused by any of the above factors, and shall notify Owner/Agency in writing with a copy to the Design Professional of any event allowing for excuse or delay not later than seven days after the CM/GC first becomes aware of the event, or should have become aware, of the event; otherwise, the CM/GC will be deemed to have waived the excuse or delay.

(ii) Abnormal Weather

Extensions of time will be granted for abnormal inclement conditions that delay the critical path of the progress of the work.

Abnormal weather delay is defined as days lost to weather conditions either (1) in excess of days specified in the Supplementary General Conditions, or (2) if not defined in the Supplementary General Conditions, as days in excess of a local historic average prevailing at the site recorded by the National Oceanic and Atmospheric Administration (NOAA) for the 120 months immediately preceding the date specified in the Proceed Order Date.

Not later than ten days after the first occurrence of the event giving rise to the claim, or with respect to claims for extensions of time as a result of abnormal weather, and not

later than ten days after the end of each calendar month thereafter, the CM/GC shall file a claim with the Design Professional with a copy to the Owner/Agency. By not later than fifteen days from the receipt of the claim, the Design Professional shall render a decision concerning the allowance of an extension of time and shall report the decision to both the CM/GC and the Owner. If additional time is allowed, the Design Professional will prepare a change order pursuant to Section Three, Part Four of the Construction Management Agreement (CM/ GC), increasing the contract time for execution by both the CM/GC and Owner/Agency.

C5. Exceptions to General Rule: Compensable Delay

The CM/GC may be entitled to an extension of time or and adjustment to the contract sum for a delay caused by the following hindrances or delays of the Owner/Agency, Design Professional, or separate CM/GC.

(i) Delay by Owner or Design Professional

If the CM/GC is delayed in the progress of the work between the proceed order and the Material Completion and Occupancy Date, as amended, by an act or neglect of the Owner, Owner's employees, Design Professional, or separate CM/GCs employed by the Owner.

(ii) Delay in Responses to Submittals

MFC

Any claim by CM/GC for a change in the Material Completion and Occupancy Date due to delay of responses to submittals may be made during the time while the failure of the Design Professional to act or perform continues, or within seven days after such failure to act or perform has been cured. If no submittal schedule or agreement as described in Section Three, Part Five of the Construction Management Agreement (CM/GC) and as required in Section Two, Part Two of the Construction Management Agreement (CM/GC) is agreed upon, then a claim for delay will be allowed only after the Design Professional has been allowed fourteen days to take action.

(iii) Other Factors

In the event of delay as described in the two previous paragraphs, the contract time may be extended by change order for such reasonable time as the Design Professional and the Owner/Agency may determine providing that (1) such delays extend the Overall Project Schedule's critical path; (2) the CM/GC has taken all reasonable actions to mitigate the effects of the delays on the work; (3) the fault or negligence of the CM/GC or the CM/GC's agents or employees did not materially contribute to such causes; and (4) the CM/GC shall have notified Owner/Agency of the cause or causes of such delay within fourteen days from the date on which the CM/GC first becomes aware of such delay.

C6. Owner-Requested Changes

If the Owner requests changes in the Contract Documents that would materially affect the completion of the work by lengthening the critical path of the Overall Project Schedule, the Design Professional shall determine the appropriate number of days and thereby extend by change order the Material Completion and Occupancy Date.

C7. Other Change Orders (Not the Fault of the CM/GC)

For change orders involving the following situations that would materially affect the completion of the work by lengthening the critical path of the Construction Progress Schedule, the Design Professional shall determine the appropriate number of days and thereby extend the Material Completion and Occupancy Date.

- Changes due to subsurface or other unforeseen conditions (Section Three, Part Four of the Construction Management Agreement [CM/GC])
- Changes for compensable rock (Section Three, Part Four of the Construction Management Agreement [CM/GC])
- Changes deleting work (Section Three, Part Four of the Construction Management Agreement [CM/GC])

C8. Submission of Claims for Compensation for Delay and Extension of Time

(i) Time for Submission

Except as specified in the following paragraph, any claim by CM/GC for a change in the contract sum or the Material Completion and Occupancy Date shall be made within fourteen days of the day on which the CM/GC becomes aware of the event on which the claim is based, or if the Contract Documents specify a shorter or longer period with respect to such event, within the period specified by the Contract Documents.

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(ii) Delay Claim Must Be In Writing

Any claim to extend the contract sum or Material Completion and Occupancy Date must be in writing, must set forth in detail the basis for the claim and the number of days of delay claimed, must be coordinated with the approved Overall Project Schedule, must be executed by the CM/GC and delivered to the Design Professional and the Owner, and must be reviewed and an appropriate time assessed by the Design Professional.

(iii) When Delay Claim Deemed Waived

Any claim to extend the contract sum or Material Completion and Occupancy Date not made in writing to Owner within the above time period shall be deemed waived and shall not thereafter be valid. In the case of a continuing delay as a result of a single event, only one claim submission is necessary.

(iv) Design Professional to Decide

The contract sum or the Material Completion and Occupancy Date may be extended for such reasonable time as the Design Professional may decide, and the Overall Project Schedule shall then be updated.

C9. Recovery Schedules

(i) Recovery of Schedule Delays

If the Design Professional determines that the project is one week or more behind schedule per the approved Overall Project Schedule, the Design Professional shall so notify the CM/GC in writing. Within seven days of the date of the Design Professional's notice, the CM/GC shall deliver a written plan to the Design Professional and Owner explaining how the CM/GC intends to bring the project back on schedule. The CM/GC's plan must provide sufficient detail to allow Design Professional and Owner to determine the proposal's feasibility.

(ii) Recovery of Schedule Delays During Last Sixty Days of Contract Time

At any time during the last sixty days of the contract time that the Design Professional finds that the CM/GC is behind schedule per the contract time, as amended, the Design Professional shall notify the CM/GC in writing. Within seven days of the date of the Design Professional's notice, the CM/GC shall prepare and deliver to the Design Professional and Owner a written plan explaining how the CM/GC intends to bring the project back on schedule. The CM/GC's plan must provide sufficient detail to allow the Design Professional and Owner to determine the proposal's feasibility.

D. CORRECTING THE WORK; INSPECTIONS; COVERING AND UNCOVERING THE WORK

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D1. Access to the Work

The Design Professional, Owner/Agency, and their representatives shall have access at all times to the work wherever it is in preparation or progress, and the CM/GC shall provide proper facilities for such access and for inspection.

D2. Notice of Non-Compliant Work

The Notice of Non-Compliant Work shall be in writing, shall be dated and signed by the Design Professional, shall be addressed to the CM/GC with a copy to the Owner/Agency, and shall contain three elements as follows:

(a) Description of the Non-Compliant Work

- Work that has been omitted
- Work that is unexecuted as of the date of the Notice of Non-Complaint Work, the time for its incorporation into the work as planned in the Overall Project Schedule having expired
- Work that has not been executed in accordance with the methods and materials designated in the Contract Documents

(b) Contract References

Contract references are the citation of the provision or provisions of the Contract Documents that specify the work to be executed.

(c) Time for Compliance

Time for compliance is the fixing of a reasonable space of time within which the CM/GC shall have made good the deficiency.

D3. Correcting the Work

(a) Removal and Making Good of Non-Compliant Work

The CM/GC shall remove from the site, within the space of time designated in Notice of Non-Compliant Work, all work determined by the Design Professional as failing to conform to the contract, whether incorporated in the work or not, and the CM/GC shall promptly replace and re-execute the work in accordance with the contract and without expense to the Owner and shall bear the expense of making good all work of other CM/GCs destroyed by such removal or replacement. The CM/GC shall supply any omitted work and perform all unexecuted work within the space of time fixed by the Design Professional in notices of non-compliant work.

(b) Remedy of the Owner for Breach of Notice of Non-Compliant Work

(i) Failure to Make Good a Deficiency

MFC

If the CM/GC does not make good a deficiency within a reasonable space of time fixed in a Notice of Non-Complaint Work, the Owner/Agency, after three days written notice to the CM/GC, may do any of the following:

- Remove the non-compliant work and store it at the expense of the CM/GC. If the CM/GC does not pay the expenses of such removal and storing within ten days after receipt of written demand of the Owner, the Owner may upon three days notice in writing to the CM/GC sell such materials at private sale or at auction and shall account for the net proceeds thereof after deducting all proper costs incurred by the Owner/Agency.

- Supply omitted work, perform unexecuted work, or replace and re-execute work not done in accordance with the methods and materials designated in the Contract Documents, and deduct the cost thereof from any payment then or thereafter due the CM/GC.

(ii) Notice of Correction from CM/GC

The CM/GC shall give prompt notice in writing to the Design Professional, with copy to the Owner, upon completion of the correction of the non-compliant work. In the absence of such notice, it shall be and is presumed under the contract that there has been no correction, supplying remedy, or performance of unexecuted work.

D4. Inspections

The Design Professional and its consultants shall have access to the project sites to observe the work and to approve, accept, and comment to covering of and certify work for payment.

(a) Notice of Readiness for Inspection to Design Professional from CM/GC Prior to Covering Work

As required by the Contract Documents, if the Design Professional's instructions (either in the specifications or issued later in writing) or any laws, ordinances, or public authority require any work to be specially tested or approved, the CM/GC shall give the Design Professional timely notice in writing of its readiness for inspection. If the inspection is by any authority other than the Design Professional, the CM/GC shall give timely notice of the date fixed for such inspection. Inspections by the Design Professional shall be made promptly and, where practicable, at the source of supply.

(b) Fire Marshal Inspections

The State Fire Marshal may make inspections at any time. It shall be the responsibility of the CM/ GC to request an inspection at 80 percent completion and at 100 percent completion, and to give notice when all items on the 100 Percent Inspection Report have been completed. Requests shall be in writing with a copy to the Owner/Agency and Design Professional.

(c) False Start

MFC

In the event the CM/GC issued the notice of readiness prematurely, its action shall be deemed to be a "false start." The CM/GC shall be liable for the damage resulting from the aforesaid false start, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced by the aforesaid false start.

(d) Certificate of Occupancy

The CM/GC's obligation under the contract is to install the work in accordance with the Contract Documents, obtain the Certificate of Occupancy from the State Fire Marshal or its deputy, and for- ward it to the Design Professional as a part of the closeout procedures. The Design Professional's obligation is to design the work to comply with the applicable codes and to qualify for a Certificate of Occupancy.

D5. Covering and Uncovering Work

(a) Re-examination or Re-testing of Work Covered Pursuant to Consent of Design Professional

Re-examination or re-testing of questioned work previously covered pursuant to consent of the Design Professional may be ordered by the Design Professional. If so ordered, the work must be uncovered by the CM/GC. The Owner shall pay the cost of re-examination and replacement or of re-testing if such work is found in accordance with the Contract Documents. The CM/GC shall pay such cost if such work is found not in accordance with the Contract Documents, unless the CM/ GC can show that a separate CM/GC caused the defect in the work. In that event, the Owner shall pay such cost.

(b) Re-examination or Re-testing of Work Covered Without Consent of Design Professional

If any work should be covered without approval or consent of the Design Professional or contrary to any provision of the Contract Documents, such work must be uncovered for examination by the Design Professional at the CM/GC's expense. The CM/GC shall be liable for the costs resulting from the aforesaid uncovering, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced thereby.

D6. Subcontractors, Trade Contractors, and Suppliers

During the Preconstruction Phase but no later than fourteen days after the effective date of the Construction Contract, the CM/GC shall submit in writing to the Design Professional a list of the names of trade contractors, and major material and equipment suppliers that the CM/GC intends to employ on the work.

The list of trade contractors and suppliers is not submitted for approval, but is for the purpose of establishing the following:

1. What trade and portions of the work are to be performed under subcontract?

2. What are the names of the parties selected by the CM/GC to perform work by subcontract, the aforesaid selection being a matter lying solely within the discretion of the CM/GC?

MFC

3. The CM/GC shall identify each minority-owned and female-owned trade contractor or supplier performing work on, or supplying material to, the project.

4. By not later than the tenth day of the month following the end of each quarter, the CM/GC shall submit to the Owner a list of all minority and female-owned trade contractors or suppliers performing work on, or supplying material to the project, and the amount paid to each for that quarter.

By submitting the list of trade contractors and suppliers**,** the CM/GC represents that the trade con- tractors and suppliers selected by it are reputable, skilled, reliable, competent, and qualified in the trade or field in which they are to perform on the project and thoroughly familiar with the codes and laws applicable to their work.

The Owner/Agency and the Design Professional's review of the trade contractors and suppliers does not indicate or insinuate approval of any trade contractor or suppliers.

(a) CM/GC Responsible For Acts and Omissions

The CM/GC is responsible for the acts and omissions of its trade contractors, suppliers, and employees, and further of all persons directly or indirectly employed by them, as the CM/GC is for the acts and omissions of employees and persons directly employed by the CM/GC. The subcontracting of work does not relieve the CM/GC of the responsibility for the proper execution of the work and for compliance with all requirements of the Contract Documents.

(b) No Contract Between Owner and Any Trade Contractor, Supplier, or Employee

Nothing contained in the Contract Documents shall create any contractual relation between the Owner/Agency and any trade contractor, supplier, or employee of the CM/GC or its trade contractors.

(c) Relationship of CM/GC With Trade Contractor and Suppliers

The CM/GC shall bind every trade contractor and supplier to the terms of the Contract Document insofar as they are applicable to their work, and the CM/GC will be bound to the subcontractor and supplier by all the obligations that the Owner/Agency owes to the CM/GC under the Contract Documents.

The CM/GC also agrees to require that the subcontractors and suppliers agree to be bound by the terms of the Contract Documents and to assume toward the CM/GC all the obligations and responsibilities that the CM/GC assumes toward the Owner.

(d) Owner Not Obligated to Any Subcontractor or Supplier

There is no obligation on the part of the Owner to pay to or to see to the payment of any sums to any trade contractor, subordinate contractor, supplier, laborer, employee, or person supplying labor, materials, machinery, or equipment to the project.

D7. Compensation

MFC

The Owner/Agency will make periodical progress payments to the CM/GC for all work that has been performed and materials and equipment that have been supplied in full accordance with the terms and conditions of the Contract Document.

(a) Application For Payment

The CM/GC shall periodically (usually monthly) submit to the Design Professional an *Application for Payment* per the form provided in the Construction Management Agreement (CM/GC).

Application for payment shall be broken down by CSI Category and for the Final Certification of Cost by CSI description and Capital Asset Category. See Exhibit K, Application for Payment and Exhibit L, Final Certification of Costs in the Construction Management Agreement (CM/GC).

Prior to the first Application for Payment, and as previously developed in the Pre-Construction Phase, the CM/GC shall submit a schedule of values to the Design Professional of the various parts of the work including quantities and aggregating the total sum of the contract, divided in the same manner as set forth in the *Application for Payment* in the Construction Management Agreement (CM/GC) , showing the CM/GC's right to payment claimed, arranged, and itemized to meet the approval of the Design Professional and supported by such documentation as to its correctness.

The CM/GC shall attach backup material to the Application for Payment including, but not limited to, receipts or other vouchers showing the CM/GC's payments for material and labor, including payments previously made to trade contractors.

(b) Material Stored on Site

If the Application for Payment includes materials that have been delivered and suitably stored at the site (i.e., protected from weather, theft, damage from construction activities, and similar storage as required by the Contract Documents), but not yet incorporated into the work, the Application for Payment may include a request for payment for these materials.

Approval for payment for stored materials will be conditional upon submission with the CM/GC's Application for Payment, bills of sale, or such other procedure or document as will establish the Owner/Agency's title to such material and otherwise adequately protect the Owner/Agency's interest in the stored material. The CM/GC remains responsible for the existence, security, protection, and if necessary, replacement of the material until execution of the Certificate of Final Completion by the Design Professional.

(c) Material Stored Off-Site

As a general policy, the Owner/Agency will not pay for materials stored off-site. There have been exceptions to this rule where the project site may be small, congested, and unsuitable to store materials, or where off-site storage may better protect and secure the materials. Approval for Payment of material off site requires the approval of the Director of the Construction Division of the Georgia State Financing and Investment Commission.

(d) Retainage

MFC

To account for possible unforeseen deficiencies and lack of performance of installed materials and equipment, retainage will be withheld from each periodic payment to the CM/GC per contractually defined amounts of the sum of the total amount earned for work in place under the original contract, total amount earned for work-in place for change orders, and value of material stored at the site.

After half of the contract sum, including change orders, becomes due, the CM/GC may request and, upon approval of the Design Professional, the sum being held as retainage will be converted to a lump sum and held by the Owner until the Design Professional issues a Certificate of Material Completion. No further retainage will be withheld from payments. The conversion of previously withheld retainage to a lump sum and elimination of retainage or future payments can occur if the following conditions are met:

1. The project is on or ahead of the Overall Project Schedule.

2. There are no breaches of Notices of Non-Complaint Work.

3. There is no delinquency in the completion of work and filing and of the final breakdown and accounting pursuant to any change orders utilizing force account.

The Owner/Agency may reinstate the retainage on any subsequent Applications for Payment due to be paid if one or more of the following events occur:

1. The percentage of work completed falls behind the percentage required by the Overall Project Schedule by as much as 5 percent.

2. The CM/GC breaches a Notice of Non-Compliant Work.

3. The CM/GC becomes delinquent filing the final breakdown and accounting payment to any change order utilizing force account.

4. The CM/GC commits any Breach of the Contract.

The CM/GC should be given written notice by the Design Professional of the reinstatement of the retainage on the Application for Payment.

The Owner/Agency, upon the Design Professional's recommendation, may reconvert the retainage to a lump sum if the CM/GC subsequently satisfies the following conditions:

1. Recovers all lost time and gets the work back on the Overall Project Schedule.

2. Remedies all breaches of Notice of Non-Complaint Work.

3. Supplies a proper breakdown and accounting pursuant to any change order utilizing a force account.

All retainage sums withheld while either or all of the events existed may be again converted to a lump sum to be held until the Design Professional issues the Certificate of Material Completion.

(e) Trade Contractor Retainage Release

MFC

Upon the request of the CM/GC and at the Owner/Agency's discretion, an amount equal to the retainage on the value of a trade contractor contract amount may be separately released from the CM/GC's retainage held by the Owner/Agency as the trade contractor completes its work.

The CM/GC must file an application for release of a trade contractor's retainage. The application for release of trade contractor's retainage shall contain a release of all claims by the trade contractor and shall bear the original certificates of the trade contractor, CM/GC, and the Design Professional that the trade contractor's work has been fully performed, and that the sum for which payment is requested is due by the CM/GC to the trade contractor. Checks releasing a trade contractor's retain- age shall be made payable to the CM/GC, the CM/GC's Surety, and the trade contractor, and shall be mailed to the CM/GC's Surety.

The Owner/Agency's willingness to release the retainage of a trade contractor that has completed work does not create any contracted relationship between the Owner/Agency and the trade contractor, and does not create any duty of the Owner/Agency to pay any trade contractor.

(f) Processing the Application for Payment

Upon receipt of the Application for Payment (Construction Management Agreement [CM/GC]) from the CM/GC, the Owner's representative (Construction Compliance Specialist [CCS]) will review the Application for Payment prepared and executed by the CM/GC. If the Owner's representative (CCS) concurs, the Design Professional shall execute a certificate on the face of the Application for Payment as to its accuracy. The Design

Professional shall visit the project site after the CM/GC and Owner's representative (CCS) have agreed to and forwarded the Application for Payment. The Design Professional conducts such inspections and reviews as are necessary to make a decision as to the accuracy of the Application for Payment.

If the CM/GC and Owner's representative (CCS) cannot agree on the appropriateness of the Application for Payment, the Design Professional shall make a decision. Upon determining the appropriateness of the Application for Payment and making such adjustments as necessary, the De- sign Professional shall execute the certificate on the Application for Payment and forward it to the Owner/Agency for payment. The Design Professional shall have seven days after receipt of the Application for Payment to issue the Design Professional's Certificate of the Application for Payment for such amounts as the Design Professional decides to be properly due. If any sums are withheld, the Design Professional will State in writing the reason for withholding any sums in the certificate. The Owner/Agency shall make payment within ten days after receipt of the Certification of the Application for Payment by the Design Professional.

(g) Effect of Design Professional's Certificate on an Application for Payment

No certificate issued by the Design Professional nor payment made to the CM/GC by the Owner/ Agency, or partial or entire use or occupancy of the work by the Owner/Agency shall be an acceptance of any work or material not in accordance with the Contract Documents.

(h) Payment Due Dates and Interest

MFC

Should the Owner fail to pay a proper invoice within thirty calendar days of receipt, the CM/GC shall notify the Owner in writing by certified or statutory mail. If the Owner fails to pay within five business days of receipt of the notice, the CM/GC may receive, in addition the sum named in the proper invoice, interest thereon at the rate of one half percent per month on the unpaid balances as may be due.

(i) Payments for Change Order Work

Payments will not be made for any changes in the work until a change order has been executed.

(j) Payments Withheld or Nullified

The Design Professional or the Owner/Agency may withhold or, on account of subsequently dis- covered evidence, nullify in whole or in part any Application for Payment to such extent as may be necessary to protect the Owner from loss because of the following conditions:

- Defective work not remedied
- Claims or liens filed
- Failure of the CM/GC to make payments properly to trade contractor for material or labor
- A reasonable doubt that the contract can be completed for the balance then unpaid
- Damage to a separate contractor, to the Owner, or a third party

- Failure to maintain a rate of progress consistent with the Overall Project Schedule
- Failure to supply enough skilled workers or proper materials
- Court-ordered retention
- State Tax Forms not on file
- Breach of the Contract

When the conditions above are remedied withheld payments may be made to the CM/GC.

D8. Contract Adjustments, Disputes, and Termination

(a) Dispute Resolution

It is very likely at some point during the construction of the project that the CM/GC will make claims for additional costs or time. It is also very likely that the Design Professional and Owner/Agency will reject some of these claims and that the CM/GC will protest that decision. The contract provides specific tools for dispute resolution; however, it specifically excludes the use of arbitration. Basically, arbitration is a binding alternative to litigation.

This section of the SCM is intended to help the Owner/Agency find ways to resolve these claims. Assuming that the team participated in a formal partnering process, any specific procedures established as a result of partnering should be reviewed and implemented prior to more formal resolution procedures discussed below.

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(i) Negotiations

After the Design Professional has rejected a general claim, the CM/GC is afforded thirty days to protest the decision by submitting a *Statement of Claim.* According to the contract, all parties shall first endeavor to resolve the claims through discussions. In other words, the team should meet whereby the CM/GC's project staff should present the merits of the claim, followed by the Design Professional justification for rejection. The Owner (or Program Manager if applicable) shall attempt to be somewhat impartial and resolve the differences. It is advisable that the senior administrators not attend these meetings. Further, it is advisable that these meetings take place as soon as possible after the initial rejection (possibly at the time of the next scheduled progress meeting).

(ii) Dispute Resolution Board

Ideally, any partnering sessions (if applicable) established a Dispute Resolution Board consisting of the senior designates or administrators from the Owner/Agency, Design Professional, and CM/GC. If the project did not implement partnering, and/or no such board exists, the project team should consider the establishment of one. Often, this board includes a neutral member to help facilitate the meetings. This member is typically from the industry, but is not closely associated with the Owner/Agency, Design Professional, or CM/GC. This position can be a paid position (such as a mediator, attorney, or similar paid position) or strictly a volunteer.

In the event that the project staff cannot promptly resolve the dispute, the staff shall refer the dispute to the Dispute Resolution Board, who shall meet and attempt to resolve the claim. It is advisable that the project staff (that failed to resolve the dispute) not be permitted to attend this meeting. In this manner, the board is more likely to objectively resolve the issues without being biased by the possible emotions or degraded relationships of the project team. On larger or contentious projects, it might be advisable for this group to schedule monthly meetings to resolve any such disputes, and/or critical issues that occurred during the preceding month, even if no such claims exist. In this fashion, the dynamics are such that the project team often resolves issues prior to next scheduled meeting of the Dispute Resolution Board.

(iii) Mediation

If the Dispute Resolution Board is unable to resolve the claim, the parties can elect to submit the dispute to mediation. Mediation is a more formal process of resolving disputes involving one or more neutral mediators who facilitate the process. Unlike litigation, this process does not necessarily result in a decision as to which party was right or wrong. Mediation is more often a process of negotiations whereby the mediator(s) try to resolve the differences, often with both parties having to moderate their stance.

Although mediation is not binding, it is a very effective way of resolving a dispute short of litigation. Litigation is always much more costly and time-consuming, and therefore mediation should always be encouraged prior to litigation.

(b) Termination

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Caution: Termination is a serious action and should only be contemplated after thorough consultation with senior administrators, attorneys, and any other agencies or consultants who might help weigh all other options, as well as help formulate a recovery plan. Termination is likely to cause a very significant cost and schedule impact to the project, while resulting in protracted litigation with the CM/GC.

The Contract Allows for Three Basic Means of Termination of the Contract:

1. **Termination for convenience by both the Owner and CM/GC**: *Termination For Convenience* means that the CM/GC did nothing wrong to give reason for the termination. It may simply be that the project is no longer feasible, and the Owner may elect to forego the construction.

2. **Termination for cause by the Owner:** *Termination For Cause* means that the CM/GC did something that gave the Owner reason to terminate the contract.

3. **Termination by the CM/GC for the event of non-payment or suspension of the project:** The CM/GC also has some specific rights to terminate the contract in the event of non-payment or suspension of the project.

This section of the SCM is intended to assist the Owner with tools and considerations in the event that termination is necessary.

(i) Conditions of Termination

The following section expands on the three conditions for termination by giving considerations and examples of each condition with scenarios that serve to highlight the issues and questions involved when the possibility of termination exists. The sections end with Tools and Outside Assistance section that suggests remedies for these conditions:

(A) Condition One: Termination for Convenience

Considerations: After completing a significant portion of the design, or even after beginning construction, the Owner/Agency has the option to cancel the construction if the project is no longer feasible. Example scenarios along with corresponding considerations are given below:

Example One

The government may simply no longer need the project. This could be a result of major programmatic changes, new priorities, restructuring or elimination of departments or groups, or similar reasons. If the project were designed only, it is very easy to terminate contracts without any significant issues; however, as a more difficult example, the Owner/ Agency would need a good post-termination or recovery plan if this decision were made at about the mid-point in construction. What does the Owner/Agency plan to do with the unfinished building? Is it going to be a "white elephant"? The Owner/Agency will need a plan as to whether to abandon the project, demolish it, or complete it and/or retrofit it to satisfy another purpose. Further, the Owner/Agency would need to consider the cost of termination. In other words, the Owner would owe the Design Professional and CM/GC for the value of all work to date including stored materials and their cost associated with the termination.

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Example Two

The project might be too expensive to build. Prior to commencement, it is possible that the CM/GC's construction costs significantly exceed the available funds, therefore making the project no longer feasible. Under this scenario, the impact of the termination is not as great since the Owner/Agency would basically pay for the design (or portion thereof) plus the CM/GC's nominal expenses allowed under the terms of the contract.

Example Three

As an extension of the above example, a more cumbersome scenario would be if construction had begun and the cost overruns occurred during the construction. This might be caused due to unforeseen conditions (such as rock removal, relocation of unknown utilities, or hazardous material abatement) that required large amounts of the allocated project funds. The termination of a project at this stage would be more similar to the first example above, forcing the Owner/Agency to create a plan to deal with an unfinished building.

Tools and Outside Assistance: The State of Georgia has much to offer in the way of internal and external resources. There are most likely very good people in the system that can help and share invaluable lessons that were learned.

(B) Condition Two: Termination for Cause

Considerations: Termination for Cause basically means that the CM/GC is being fired because of a contractual default which it did not cure. Again, this action shall not be taken without serious consideration and consultation with senior administrators, attorneys, the Design Professional, Program Manager (if applicable), and possibly other experts in the industry. Termination will most likely result in a costly and time-consuming litigation with the CM/GC. Likewise, the cost and time to complete the unfinished project will likely increase (sometimes significantly).

Outlined in the contract are specific examples of when the Owner/Agency has a right to terminate the contract. However, some scenarios along with corresponding considerations are given below:

Example One

The work may be done correctly, but the CM/GC is significantly behind schedule and is not properly staffing the project with a sufficient number of skilled employees. Further, despite repeated warnings to the CM/GC's site staff, the CM/GC has taken no action to correct the problem.

In this scenario, the Owner/Agency may be justified in terminating the contract; however, the Owner/Agency should first have conversations with the CM/GC's senior administrators (home office) as well as its bonding company. Often, this will correct the problem. If termination still seems like the best option, the Owner should consult with attorneys to make sure that proper notifications have been made (including notifications of default). The Owner/Agency should also make certain that there were no excusable delays (delays caused by events or parties beyond the CM/GC's control). Lastly, the Owner should evaluate whether or not the recovery plan (probably involving a replacement CM/GC) will result in a delivery any sooner than the late completion anticipated by the CM/GC.

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Example Two

The CM/GC has repeatedly failed to pay its trade contractors and other vendors. Further, the pace of the project seems to be slowing down as fewer resources are committed to the effort. There are rumors that the CM/GC is having financial troubles and could be going bankrupt. In this scenario, the Owner/Agency needs a quick clear picture of the CM/GC's financial status before taking action. This investigation might include contact with the CM/ GC's bonding company, which is probably already keenly aware of such problems, if true. The bonding company might not be totally forthcoming; therefore, the Owner/Agency should also obtain a credit report (such as that by Dunn & Bradstreet).

The Owner/Agency should also investigate the payment history with the trade contractors and verify whether or not proper payments have been made. Assuming this investigation does indicate probable bankruptcy, the Owner should seek appropriate legal advice prior to a declaration of default. For example, the actual termination could cause insolvency of the CM/GC that had financial troubles (but was not yet bankrupt).

Example Three

In the third scenario, the project is in total disarray. While the CM/GC may or may not be on schedule, the Design Professional has identified much defective work and has issued many condemnation orders. The CM/GC, on the other hand, has issued hundreds of Requests for Information (RFIs) and alleges a deficient design.

Further, the CM/GC alleges a lack of leadership on the part of the Owner/Agency to resolve these issues resulting in the CM/GC's loss of time and money. The relationships are contentious between all parties and the Design Professional demands that the Owner terminate the CM/GC. This is the worst case scenario, and most likely, everyone shares a measure of the blame. In the event that the CM/GC is terminated, the action will almost certainly initiate protracted litigation.

The project time and cost will most likely be seriously impacted. Before termination and litigation occurs, drastic action must be taken. The Owner/Agency must be willing to overcome the internal dynamic to solve this problem with existing staff. The Owner/Agency must seek outside help and possibly force large staffing changes on the part of all parties so that a fresh team can resolve the differences and complete the project.

Example Four

Another scenario might be that the CM/GC has installed the wrong door hardware. As a result, the Design Professional promptly issues a Notice of Non-Compliant Work. Despite the nominal expense in making the correction, the CM/GC has failed to correct the work within thirty days, and the Owner/Agency declares the CM/GC in default of the contract as allowed under the terms of the contract. Although technically allowed under the contract, the Owner/Agency would not be exercising good judgment in terminating the contract. The CM/GC would almost certainly initiate litigation, and the cost and delivery date of the project would be seriously impacted. In this case, the Owner/Agency should find other means to motivate the CM/GC to correct the deficiencies.

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Tools and Outside Assistance: Prior to taking any action, the Owner/Agency should consult with its legal advisors. Prior to termination, the contract requires that the Owner/Agency issue a ten-day written notice of the Owner's intent to declare default to the CM/GC and its bonding company (surety). The CM/GC is then allowed to attempt to cure the default (prior to termination) in this ten (10) day period.

Again, the likely internal dynamic of an Owner/Agency's staff faced with a troubled project is to attempt to solve the problem without seeking outside help. The hope is that things will somehow work out. The senior administrators should endeavor to recognize such situations and overcome this dynamic by seeking as much outside help as may be required. The State of Georgia has much to offer in the way of internal and external resources. As bad as a project might appear, there has probably been one in the past that has overcome even tougher challenges. As such, there are most likely very good people in the system that can help and share invaluable lessons that were learned.

(C) Condition Three: CM/GC's Right to Terminate

Considerations: The CM/GC basically has two conditions that could give rise to a right to terminate the contract. Reference Section Five of the Construction Management Agreement (CM/GC) for a complete understanding of these terms and conditions:

Example One

Under specific conditions, the CM/GC can terminate the contract after seven days written notice if work on the project is stopped for more than thirty days.

Example Two

If the Owner/Agency fails to pay the CM/GC when due, the CM/GC can provide a thirty-day notice of intent to terminate the contract due to non-payment. If the Owner fails to pay the CM/GC before the expiration of this period, the contract can be terminated. This is not likely to happen; however, the Owner should be aware that the Design Professional basically controls the approval of the CM/GC's payment application. The Design Professional failure to provide timely approval could create a late payment from the Owner.

Tools and outside assistance: The State of Georgia has much to offer in the way of internal and external resources. There are most likely very good people in the system that can help and share invaluable lessons that were learned.

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SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.7: Design-Build



A. FORWARD

The Design-Build project delivery method has been the State's least utilized construction delivery option. The overriding concern when using this process is that most of the traditional contractual relationships between the Owner/Agency and the Design Professional that have protected the Owner/Agency's interest no longer exist.

The Owner/Agency must contract with either GSFIC or an independent professional services firm as an Executive Administrator to assist the Owner/Agency in the management and monitoring of the project. The Design-Build entity that executes the Design-Build contract is the single source of responsibility for the Owner/Agency and must be capable of financially and legally entering into a contract that can guarantee completion of the work. Historically, this single source of responsibility has been a General Contractor that has the necessary balance sheet and bonding capacities; however, the Design-Build Construction Contract could be executed with a reputable qualified Design Professional, a qualified General Contractor, or an outside third party.

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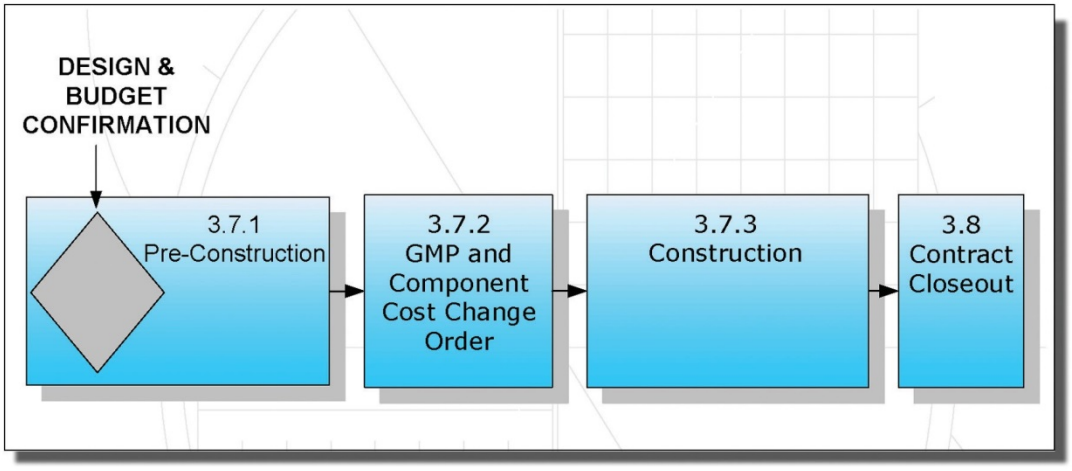


Figure 67: The Design-Build Task Flow sequence

The Design-Builder is under contract to provide both design and construction services to initiate, plan, design, construct, and turn over a completed facility to the Owner/Agency for occupancy in a "turnkey" fashion. The Design-Builder holds all Design Professional, trade contractor, and trade supplier contracts. Recommended guidelines for understanding and selecting the appropriate project delivery method can be found at *SCM Chapter 2.3 (C6): Initial Planning*. The Owner/Agency must obtain approval from GSFIC to enter into a Design-Build contract. The Design-Build project delivery process is a sequence of five major tasks. Some tasks are non-linear and may run concur- rent with other tasks.

The first three tasks are described in *SCM Subchapter 3.7.1: Pre-Construction*, *SCM Subchapter 3.7.2: Component Change Order*, and *SCM Subchapter 3.7.3: Construction*. The final task is described in *SCM Chapter 3.8: Contract Closeout* of the State Construction Manual.

Because the Design-Build delivery process allows concurrent design and construction activities, the Total Project Schedule may be reduced, as construction may begin on early award packages, such as rough grading, site work, foundations, structural steel, and similar packages, prior to completion of the 100 percent Contract Documents. The Owner/Agency's financial interest is protected because the Design-Builder is providing both design and construction services either under an agreed-to Guaranteed Maximum Price (GMP) or a lump sum contract. Individual early award packages can be awarded through a Component Change Order (CCO) that authorizes a component of work at an agreed-to price and confirms that the Total Project Cost will not exceed the agreed- to Stated Cost Limitation (SCL). The Design-Build delivery process transfers the cost risks of the project due to external influences such as material escalation and other similar external influences from the Owner/Agency upon execution of the GMP.

MFC

The Design-Builder, as the sole source responsible for all design and construction services, has a fiduciary role and responsibility to the Owner/Agency. The Design Builder must act in the best interest of the Owner/Agency and use the Design-Builder's best efforts to perform the project in an expeditious and cost-effective manner consistent with the Owner/Agency's program of requirements and budget.

The Owner/Agency, through the Georgia State Financing and Investment Commission (GSFIC), designates an Executive Administrator (EA) to assist the Owner/Agency in monitoring the design and cost control for the project. In some situations, the Owner/Agency may elect to have the EA or a selected Program Manager assist the Owner/Agency in managing the project.

SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.7: Design-Build

Subchapter 3.7.1: Pre-construction Stage



Prior to the initiation of any Design-Build Services, the Owner/Agency will enter into a contract with a Design-Builder who has been selected in accordance with the team selection procedures and requirements described in *SCM Chapter 3.2: Team Selection*. The Design-Build Construction Contract will include the legal terms and conditions that specify the Design-Builder's scope of work, roles, and responsibilities.

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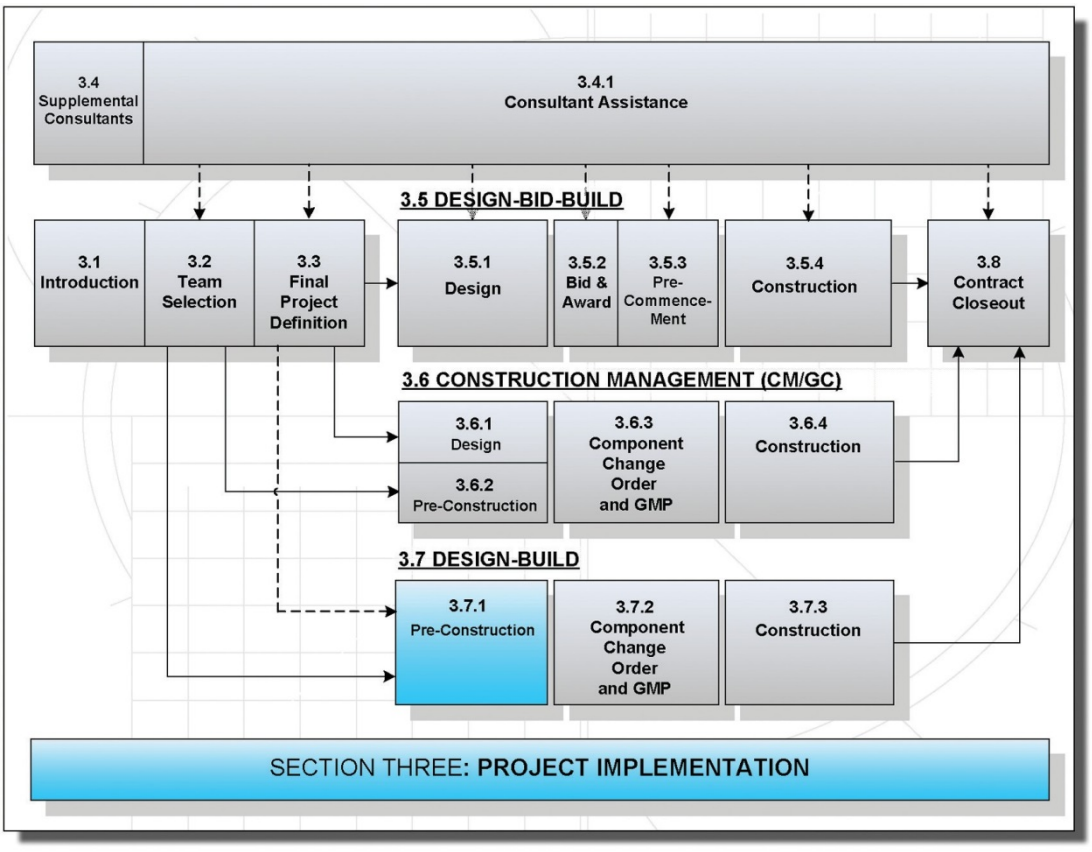


Figure 68: Project Implementation Flow Chart

The Design-Build Contract specifically contains the project's guaranteed maximum cost limitations, the Design-Builder's fee (including breakdown of design fee), Pre-Construction fee, and Construction fee, which are not to exceed the amount for design-build overhead cost and expenses, a daily rate for adjusting time-dependent overhead cost, the Material Completion and Occupancy Date, and the agreed daily amount for liquidated damages.

The Design-Builder shall not proceed with the performance of any services until the Design-Builder receives a copy of the Final Project Definition documentation or program of requirements from the Owner/Agency that has been approved by the Governor's Office of Planning and Budget.

A. THE DESIGN-BUILD TEAM

Under the Design-Build project delivery process as shown in Figure 69, the Owner/Agency executes only one agreement with the Design-Builder to provide Professional Design Services, Pre-Construction Consulting Services, Construction Services, and Contract Closeout Services. The Design-Builder also executes a contract with the Design Professional who executes design contracts for engineering services, design subconsultants, and specialty design consultant contracts. The Design-Builder also executes subcontractor and supplier contracts with trade contractors, suppliers, and equipment vendors.

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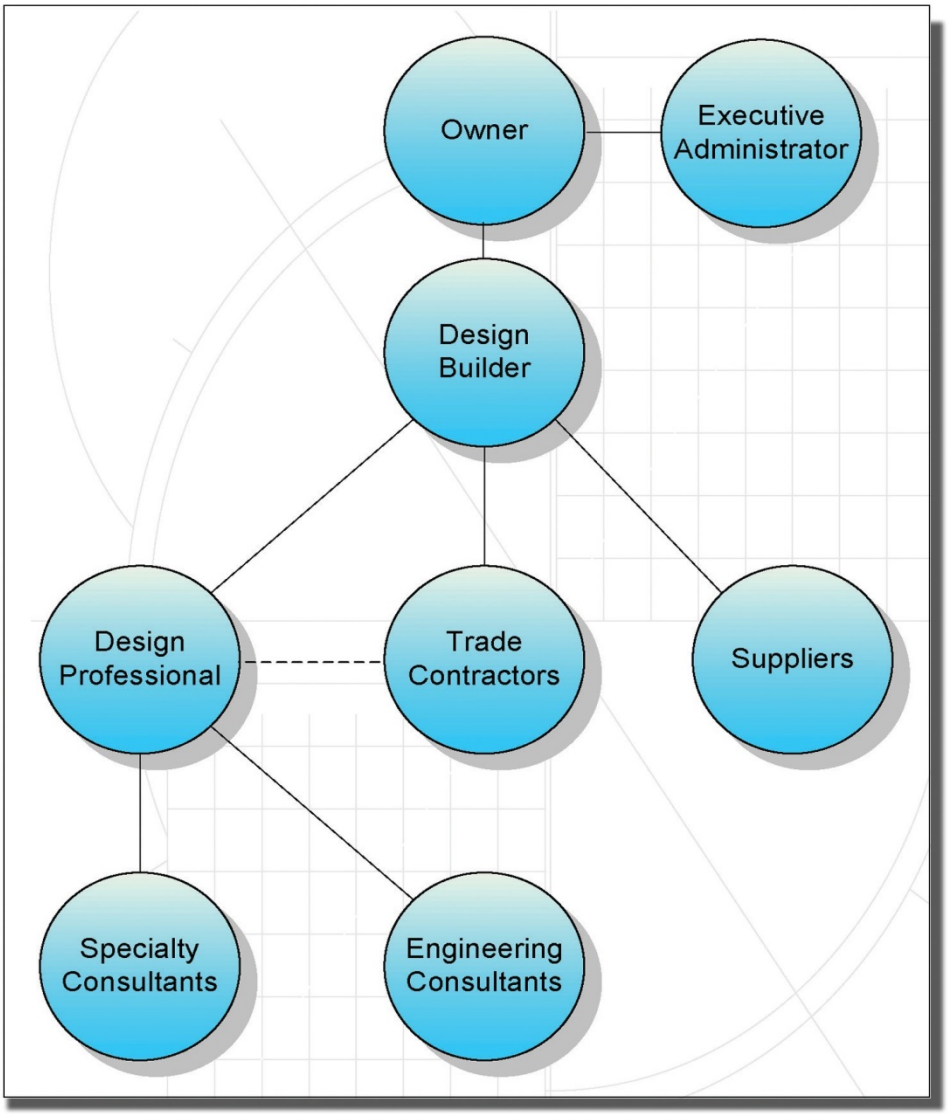


Figure 69: The Design-Build Team Diagram

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Because the Design Professional is under contract to the Design-Builder, the Design Professional is no longer contractually obligated to represent the Owner/Agency's interest; however, the Design Professional still maintains its professional responsibility to the Owner/Agency and the Public for public safety and adherence to the Owner/Agency's program of requirements.

The Owner/Agency may contract with an independent professional service firm as an Executive Administrator who assists the Owner/Agency in monitoring the design and controlling the costs of the project, and if required by the Owner/Agency, monitors and manages the Construction Contracts.

B. OWNER'S RESPONSIBILITIES

The Owner/Agency shall furnish to the Design-Builder the following project information:

- Final Project Definition (predesign study) documents, including a cost estimate and milestone schedule completed in *SCM Chapter 3.3: Final Project Definition*
- Project site topographical survey
- Written legal description of the project site
- Land/Utility Survey of the project site
- Prior geotechnical reports on the project site
- Executed Design-Build Contract

If the Owner/Agency doesn't furnish the above information, or if the information is inadequate, needing additional information or programming to enable the design of the project, the additional information shall be provided in a timely manner by the Owner/Agency. The Owner/Agency may elect to have the Design-Builder's Design Professional provide this information as an additional service described in Section One, Part Three of the Design Professional Contract (DBB). Caution should be used by the Owner/Agency to obtain a full detailed proposal for any Additional Service before authorizing any extra work.

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C. DESIGN-BUILDER SERVICES

Upon the Design-Builder's receipt of the Owner/Agency's Letter of Intent to Award, the Design-Builder shall, concurrently with the design services, be authorized to initiate the traditional contractor Pre-Construction services. No physical work may begin on the site until the Design-Builder's receipt of an Owner/Agency approved Component Change Order (CCO) or Guaranteed Maximum Price (GMP) Change Order. Within sixty days of the Design-Builder's receipt of the Owner/ Agency's Letter to Proceed with Pre-Construction Services, the Design-Builder shall provide the Owner/Agency the following items. If the Design-Builder does not, without reasonable excuse, provide all such items and issue a proceed order, the Design-Builder may be in default.

1. Prior to Commitment of Pre-Construction Services

- Executed Design-Build Contract
- Proof of Insurance (Reference Section Two, Part Two of the Design-Build Construction Contract)
- Payment bond for Pre-Construction review (Reference Section Seven, Contract Forms of the Design-Build Construction Contract.)

2. Prior to acceptance of the initial Component Change Order (CCO)

- Component Change Order executed by the Design-Builder (Reference Section 3, Part 2 of the Design-Build Construction Contract.)
- Payment and Performance Bonds (Reference Section Three, Part Two of the Design-Build Construction Contract.)
- Construction Management Plan (Reference Section Two, Part Two of the Design-Build Construction Contract)
- Land Disturbance Documents (Reference Section Two, Part One of the Design-Build Construction Contract.)
- Quality Control Program (Reference Section Two, Part Two of the Design-Build Construction Contract.)
- Written Safety Program (Reference Section Two, Part Two of the Design-Build Construction Contract.)
- Schedule of Equipment Rental Rates and Wage/Salary Rates (Reference Section Two, Part Two of the Design-Build Construction Contract.)
- List of intended trade contractors that are part of the Component Change Order (Reference Section Three, Part Two of the Design-Build Construction Contract.)

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3. The following items should be submitted prior to the issuance of the Proceed Order from the Owner/Agency, but no later than seven days of execution of each Component Change Order for the work planned to be completed by the Component Change Order.

   The items should be written seven (7) days of the execution of the GMP Change Order for all work necessary to complete the project:

- Submittal and shop drawings schedule (Reference Section Two, Part One of the Design-Build Construction Contract.)
- Detailed Construction Progress Schedule (Reference Section Three, Part Five of the Design-Build Construction Contract.)

C1. Management Plan

Development of a management plan should be the first activity initiated by the Design-Builder in the Pre-Construction Phase, and should be completed within the first two weeks after receiving a Notice to Proceed. The plan can be a short and relatively simple document (consisting of as few as ten pages). The purpose of this plan is for the Design-Builder to identify exactly which services are to be required by the Owner/Agency and Design Professional and how and when the Design-Builder will deliver those services. These services might include, but are not limited to the following:

- Cost Estimating
- Value engineering
- Constructability & Design Reviews
- Scheduling
- Recommendations as to phasing of the design
- Establishing a Quality Control Plan
- Establishing a Safety Management Plan (including site logistics)

As a minimum, the management plan should consist of the following four basic sections:

(a) Outline of Services

The Request for Proposal (RFP), as well as the contract, defines the Basic Services that will be required of the Design-Builder and Design Professional during the Pre-Construction Phase; however, these documents do not provide substantial detail concerning these services. Therefore, the entire project team should meet and define exactly how the Design-Builder and its Design Professional can assist the Owner/Agency during the Pre-Construction Phase. For example, if the contract requires the Design-Builder to update estimates at *appropriate intervals*, the project team should determine what those intervals should be, and the management plan should memorialize the agreement.

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This outline of services should include a listing of the deliverables that will be required of the Design Builder during Pre-Construction as well as timing and/or frequency of meetings.

(b) Staffing Plan

The Design-Builder shall provide specific organizational charts, names, and positions with resumes. The staffing plan should reconfirm the Design-Builder's entire team of consultants and staff for Pre-Construction and Construction.

An organizational chart for both Pre-Construction and Construction should document the location of the personnel (home office or site), their time commitment during each phase, whether or not that person's salary is cost of the work (as opposed to the fee for overhead and profit), and their roles and responsibilities. The organizational chart can be described in a narrative or displayed as a matrix chart.

(c) Pre-Construction Schedule

The management plan should include a preliminary schedule that indicates the major design activities and Pre-Construction services described above. Since the Design-Builder is providing services to manage the design effort, the format of this schedule should be based largely upon the design activities (Schematic Design, Design Development, and Construction Documents). For each major phase of design, the corresponding activities might include the following:

- Prepare the design
- Prepare the estimate
- Reconcile the estimates
- Perform Value Engineering or cost reduction
- Prepare a revised estimate
- Perform constructability reviews
- Prepare submittal dates and time allowed for approval of the design

The construction schedule is a deliverable required by the management plan.

(d) Development Basic Procedures & Control Systems

The management plan should also outline and/or define the systems that the Design-Builder will use for project controls during the Pre-Construction and Construction Phases. The Design-Builder shall explain what software systems they intend to use for estimating, cost control, information control, and other tasks. Further, the management plan should outline the basic timing of reports and possibly include example formats.

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The management plan is simply a tool to better define how the Design-Builder will lead the team during the Design Phase. The plan should be concise and could be presented in as few as ten pages.

The Design-Builder and its Design Professional shall advise the Executive Administrator and Owner/Agency, regarding the following:

- Necessary reviews in connection with site use and improvements
- Selection of materials
- Building systems and equipment
- Construction feasibility
- Availability of materials and labor
- Time and schedule requirements for initiation and construction
- Other factors related to project cost (including costs of alternative designs or materials, preliminary budgets and allowances, and possible cost saving opportunities)
- Scheduling of design and construction activities
- Provide Life-Cycle cost and Value Engineering analysis and other studies to make certain a cost effective design

C2. Design-Builder Consultation

The Design-Builder and its trade contractors, vendors, and suppliers, in collaboration with its Design Professional and the Owner/Agency's Executive Administration and Project Management Staff, will participate in the review and development of the project as set forth in the Owner/ Agency's program of requirements and shall participate in the scheduling of such design work and construction of the project, including components approved for construction by a Component Change Order (CCO) and the entire project under a GMP Change Order.

C3. Coordination Meetings

During the design of the project, the Design-Builder, with its Design Professional, shall develop a schedule for conducting meetings and attend the scheduled meetings with the Executive Administrator, the Owner/Agency, and other interested parties.

C4. Schedule

On a monthly basis, the Design-Builder shall develop and update an Overall Project Schedule that coordinates and integrates the Design Team's efforts with the Design-Builder's actual or anticipated construction schedule(s), including the specific commencement and completion scheduled dates for proposed phasing of the construction, and for award of early construction components by Component Change Order. The schedule must include the dates for commencement and completion of the work as required by Section Two, Part One of the Design-Build Construction Contract.

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The design and construction milestones must be clearly indicated, scheduled, and organized to identify the critical path of the project. The schedule will have the minimum number of activities required for the Design-Builder to efficiently and accurately manage and monitor the progress of the design and construction activities. The schedule will represent the complete scope of work and define the project's critical path and associated activities to the Executive Administrator and Owner/Agency. The Construction Progress Schedule should reflect how the Design-Builder will submit shop drawings and sample submittals for approval by the Design Professional, correlating the associated approval dates for the shop drawings and samples with the construction activities. Upon recommendation by the Executive Administrator with acceptance by the Owner/Agency, the Construction Progress Schedule shall become the Overall Project Schedule and become part of the contract.

There is not a State-mandated format for the development of the Overall Project Schedule. The Design-Builder shall provide the Overall Project Schedule utilizing one of the nationally recognized construction scheduling software programs. These programs utilize network analysis diagrams to plan and organize construction activities in an orderly manner along with the critical path. For review and approval, the Design-Builder shall submit the type and capabilities of the computerized network system proposed to be used to the Executive Administrator and Owner/Agency.

Notwithstanding which computerized network system is to be utilized, as a minimum, the Overall Project Schedule shall have a complete sequence of design and construction by activities, with dates for beginning and completing each element of the design and construction.

As a minimum, the Overall Project Schedule shall include the following:

1. All activities involved in the project, including every activity having a bear- ing on the time required to complete the work

2. An illustration of the order and interdependence of activities, the sequence of work, how the beginning of a given activity depends on completion of preceding activities, and how completion of the activity may affect start of subsequent activities

3. An illustration of the complete sequence of design and construction by phase and activity, identifying work on separate floors or areas as appropriate

4. Dates for submittals, including those for the following Owner/Agency furnished items: (1) the Design Professional submittal review periods, (2) dates for the return of submittals, (3) dates for procurement and delivery of critical equipment and products, and (4) dates for installation and provision for testing and commissioning activities

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5. Activity durations indicated on the schedule that should not exceed fifteen calendar days each in length, except the non-construction activities, such as procurement and production of equipment and materials, delivery of materials and equipment, or the curing of concrete

6. Separate activities for submittal, submittal review and approval, and material delivery and installation. All work items involving submittals, materials, and installation shall not be included in the same activity

7. The Design-Builder's submittal and review and approval dates, manufacturing durations, delivery dates, and installation duration time for materials and equipment to be furnished by Owner/Agency, or obtained from the Owner/Agency

8. A Work Breakdown Structure (WBS) format that summarized activities in accordance with an acceptable schedule of values

C5. Cost Containment

The Design-Builder shall provide to the Executive Administrator and Owner/Agency cost estimating expertise, constructability evaluations and recommendations, and monitor and comment on project's scope and quality as both relate to the project construction budget.

The Design-Builder shall provide a Construction Cost Estimate setting forth in detail the Design-Builder's estimate of construction cost, including all actual costs and Design-Builder contingencies and fees, for the construction of the entire project and each component thereof.

The Design-Builder cost estimates during design shall be provided in CSI Uniformat with the cost classifications at the level suitable for the particular phase of the design. If approved by the Executive Administrator, the Design-Builder may utilize CSI Masterformat when it becomes necessary to compare the estimate with trade contractor's pricing. Cost estimates will be prepared and updated continually as Construction Documents are developed and shall be submitted to the Executive Administrator and Owner/Agency at least monthly and when each Component Change Order is issued or at more frequent intervals as the Owner/Agency may reasonably request.

The Design-Builder shall provide to the Executive Administrator and Owner/Agency a Construction Cost Estimate that has been reconciled with the independently derived Executive Administrator's Estimate of Probable Construction Cost, each being based upon the program of requirements and design documents prepared by the Design Professional at the following project milestones:

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1. Conclusion of Schematic Design
2. Conclusion of Design Development
3. At 50 percent complete Construction Documents (prior to submission of GMP Change Order
4. Issuance of any Component Change Order
5. Issuance of any GMP Change Order

If at any time the Executive Administrator's Estimate of Probable Construction Cost and the Design-Builder's Cost Estimate, in the Design-Builder's judgment, cannot be reconciled or exceed the corresponding components of the project budget, the Executive Administrator, Owner/Agency, and the Design-Builder with its Design Professional shall confer to resolve such differences.

D. DESIGN PHASE SERVICES

The Design-Build Basic Service for the Design Phase includes all normal and customary professional services of the Design Professional and its consultants required in connection with the Schematic Design, Design Development, and Construction Documents.

The successful design of the project relies heavily on the data developed during *SCM Section Two: Project Development*, and then finalized in the *SCM Chapter 3.3: Final Project Definition.*

Prior to beginning design, the Design Professional, under the direction of the Design-Builder, should review and validate the Final Project Definition (Pre-programming) Documents, confirming that the project scope of work and program of requirements is compatible with the Stated Cost Limitations (SCL) and the Preliminary Design and Construction Schedule.

If parts of the project scope of work or program of requirements are not compatible with the SCL/ Budget, the Design-Builder shall reconcile the differences prior to the initiation of design. It is not *best practice* to proceed with design until the project scope of work and program of requirements are reconciled.

Examples of possible problems due to change in the project scope of work and program of requirements include the following:

- Delay of project funding
- Changes in scope due to Owner/Agency changes in the function of the facility
- Changes by the Owner/Agency in the required project delivery schedule and project delivery method
- Discovery of unforeseen and unfounded elements for successful operations of the facility, such as utility extensions
- Changes in code requirements and regulations (i.e., high impact glazing and seismic conditions)
- Changes in external economic conditions such as cost escalation and material availability due to natural weather disasters, terrorist threats, and other worldwide economic influences
- Discovery of the Owner/Agency's Construction Cost Limitations (CCL) not being compatible with the project scope of work and program of requirements
- Increase of the number of additional quality assurance services such as Building Commissioning and Value Engineering

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E. PROJECT STARTUP

The Design-Builder begins the design process by scheduling a project "kick-off" meeting with the Owner/Agency. At this meeting, the project team participants are introduced and the general project parameters are reviewed. The Design-Builder should produce and distribute minutes of the meeting. The SCM Appendix includes a sample kick-off meeting agenda.

At project start-up, one of the Design Professional's primary responsibilities is code compliance. Unique to State projects, there is no State building official other than those employed for Life Safety, Elevator, Building Accessibility, and Fire Safety Rules Regulations and Codes. The Design Professional serves as the Building Official.

A recent additional code requirement is the Special Inspections per International Building Codes (IBC). GSFIC has provided guidance and forms for compliance with these requirements.

- Building Codes
- Georgia State Amendments to the State Minimum Standards Codes
- State Fire Marshal's Office
- Life Safety Code
- State Accessibility Code

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- Department of Community Affairs
- Department of Labor (escalators, elevators & boilers)

F. INSTRUMENTS OF SERVICE

Unlike many private sector projects, the Instruments of Service described in the contract are "works for hire" and belong to the Owner. There are rights of use specific to both the Design-Builder and Design Professional.

G. PARTNERING

The Owner/Agency should employ a team concept in connection with the design and construction of the project. To that end, the Owner/Agency may elect to employ a separate third-party consultant to conduct a Partnering Workshop for the project team. See *SCM Chapter 3.4: Supplemental Consultants* and *SCM Subchapter 3.4.1: Consultant Assistance* for guidance and instruction regarding the selection and scope of work for a separate third party consultant for Partnering.

It is the Owner/Agency's expectation that the project team shall work cohesively to achieve the commencement and completion of the design in accordance with the Owner/Agency's scope of work and program of requirements, budget, and construction in accordance with the Contract Documents.

The project team includes the following:

- The Owner/Agency's project staff
- Executive administrator, GSFIC, specialty consultants
- The Design-Builder, its Design Professional, and major trade contractors
- Owner/Agency-retained consultants
- Separate Contractors, retained by the Owner/Agency, who are working at the site

H. SITE EVALUATION AND PLANNING SERVICES

Review of the project site and Owner-furnished information shall be done by the Design-Builder concurrently with Schematic Design Services. Site data should include the following:

- The Site Memorandum (Exhibit C-2 of the Design-Build Construction Contract)
- Geotechnical Report
- Seismic Analysis (if applicable)
- Environmental Site Assessment (ESA) (See *SCM Chapter 2.4 [C8]*)

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- Utilities checklist
- Boundary, topographic, and tree survey
- Special or site/project-specific data such as demolition, historic, wetlands permitting, and similar data

In addition to a review of site data, the Site Evaluation and Planning Services include the Geotechnical Engineer's Foundation Design and Stage Two Statement; the Plot Plan; erosion, sedimentation, and pollution control Best Management Practices (BMPs); and the procurement of testing services.

I. SCHEMATIC DESIGN SERVICES

Schematic Design Services are subdivided into the development of Concept Design Studies, Site Analysis, Schematic Design Documents, and require a Construction Cost Analysis of each proposed solution. Schematic Design Documents should be based on the approved Concept Design.

I1. Concept Design Studies

Concept Design Studies consist of the following in sufficient detail to convey to the Owner/ Agency the intended design solution that achieves the Design Professional's program requirements.

- Site Plan
- Building Plan
- Sections
- Elevations
- Other graphic and narrative information as required

The Board of Regents has a specific checklist of Concept Submittal Requirements that can be used as a guide for the development of a Schematic Design/Concept schedule.

I2. Project Schedules and Updates

The Design-Builder shall be responsible for the creation of an Overall Project Schedule within the first seven days of receipt of a Notice to Proceed. The Design-Builder shall develop an Overall Project Schedule that reflects a realistic sequence of design, construction, and procurement activities for approval by the Owner/Agency. These activities are necessary to achieve the completion of design, commencement, and construction of the project in accordance with the Design Professional's Program.

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The Overall Project Schedule shall include, but is not limited to, the following:

1. Each distinct Design Phase, detailed design activities, dates for submittal to Owner/Agency, and approval periods for Owner/Agency
2. Due dates of required information yet to be provided by the Owner/Agency
3. Dates for completion of the Construction Documents for the entire project
4. Commencement and completion timeline for construction and procurement documents for each project component (Bid Package), and when separate Construction Documents are to be prepared
5. Date when the Design-Builder shall propose a GMP Change Order to the Design-Build Construction Contract
6. Date by which the Design-Builder anticipates the Design-Builder shall pro- pose a Lump Sum Price Change Order to the Design-Build Contract
7. Approval times for shop drawings and submittals required of the Design-Builder (keep in mind that the Design-Builder shall be instructed to take into account large submittal documents that will require longer review times, e.g., submittals with over fifty sheets of drawings)

8. Dates for the submittal of approval documents to the Owner/Agency
9. Schedule of dates for the submittal of approval documents to other State agencies

In the event the Owner/Agency proposes a change to the Design Professional's program, the Design-Builder shall review the proposed revision to determine whether the change requires a change in the Stated Cost Limitation (SCL).

The Overall Project Schedule shall be submitted to the Executive Administrator and the Owner/Agency for review. The Executive Administrator should review and approve the schedule within fourteen days of submission, or provide a list of questions and comments required for clarification before approval.

I3. Site Analysis

Site Analysis considers and defines the implications on the design of the following factors:

- Physical environment and characteristics of the site
- Climate
- Topography
- Soils and conditions

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- Ecology
- Utilities
- Circulation
- Views
- Noise
- Existing structures

I4. Schematic Design Documents

Schematic Design Documents are a further development of the approved Concept Design Study. The building systems should be described and furniture and equipment locations shown to scale. For guidance and information that is generally developed in Schematic Design, see ASTM E 1804-07 Standard Practice for Performing and Reporting Cost Analysis during the Design Phase of a project.

Summarized from ASTM E 1804-07, the following should be included in the Schematic Submittal:

- Preliminary specification outlines
- General finish schedule information
- Structural, mechanical, and electrical (MEP) information
- Site plan
- Floor plans
- Wall sections
- Roof system
- Any specialty construction

The Board of Regents has developed a specific checklist of Schematic Submittal Requirements that can be used as a guide by other agencies for the development of their own Schematic Design Submittal Checklist.

The Design-Builder must obtain *approval* of Schematic Design by the Owner/Agency before proceeding to the Design Development Phase.

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I5. Value Engineering and Value Management

Value engineering (VE) and Value Management (VM) are processes performed during the Design Development Phase by the Design-Builder, Owner/Agency, Design Professional, Executive Administrator, and possibly a VE consultant with the goal of enhancing the overall design quality and value of the project.

Utilizing the Design-Build delivery method, the objective is for the entire project team to benefit from the Design-Builder's construction knowledge and experience. Should it be found that Owner/Agency has more programmatic or qualitative needs that what the construction budget can support, the team might implement a cost reduction strategy to better align scope with the budget. This effort should occur no later than the Schematic Design Phase. Scope reductions and quality reductions made in order to save money are NOT Value Engineering.

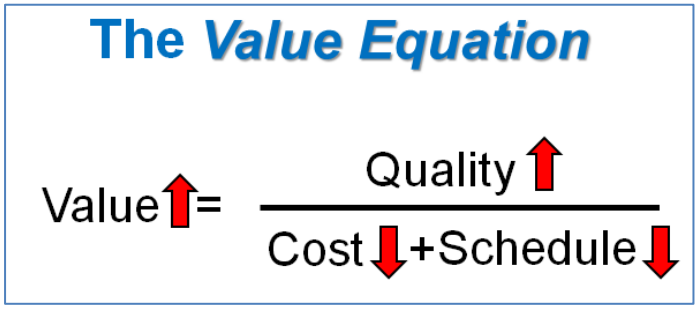
The process of Value Engineering should result in a design that is attractive, functional (meets the programmatic needs), cost effective, easy to build (constructible), and maintainable.

Value engineering results in a design that is sustainable (lower operating costs) and has a cost-effective life span. The Executive Administrator and the Owner/Agency may elect to formalize a Value Engineering Study that includes a third-party VE consultant as well as the project team, or a less formal Value Management process that is managed by the Design-Builder. The differences between Value Engineering and Value Management are noted below.

(a) Value Management

Value Management (VM) is a process performed throughout the project, but primarily during the Design Phase, by the entire project team with the goal of enhancing the value of the project for the State. This process requires meeting the program goals in a way that optimizes the value received for the investment being made. The key objective of the VM process is to help the Owner assess and communicate the specific value objectives for the project. This project specific value definition will be crafted and refined throughout the duration of the VM process.
Value has many aspects typically grouped under the banners of Schedule, Cost and Quality. Examples include:

- Schedule
  - Occupancy Start
- Cost
  - First Cost
  - Lifecycle Cost
- Quality
  - Functionality/Quality
  - Building Aesthetics
  - Sustainability



The "Value Equation" illustrates the relative nature of each of these: As cost and schedule go up, value typically goes down; when quality goes up, value goes up. These three priorities are not mutually exclusive, but they involve tradeoffs. Value is created by optimizing these tradeoffs for the each owner's needs for each unique project. Managing value is not just managing cost, managing schedule or managing quality; it is about managing ALL THREE and doing so simultaneously.

MFC

Making good decisions before the VM process will allow VM efforts to focus on optimizing value in lieu of solving fundamental misalignments in value objectives such as the a design that significantly exceeds the budget. The VM process is continuous throughout the evolution of design and does not need to be tied only to specific drawing releases although these milestones usually provide good "snapshots in time" to capture ideas and make decisions.

Four major considerations must be addressed for a successful VM process:

Owner/Agency must lead the VM Process - Involving the entire project team is vitally important as each team member brings specific perspectives, roles, objectives, and contributions to the process. The Owner/Agency portion of the team often includes multiple parties such as those responsible for the operation and maintenance of the facility as well as the users of the facility. It is important for there to be clear roles along with clearly defined responsibilities among the Owner/Agency team members. Since the Owner/Agency team plays a critical decision making role in the Value Management process, it is highly recommended that the Owner/Agency provide a single point of contact to the rest of the team for purposes of maintaining an efficient VM process.

We Work for the Project - The team must individually and collectively work for the benefit of the overall project throughout the VM process. The CM/GC or design-builder must be assigned (in the case of design-bid-build someone must be assigned) to assemble the pricing, schedule, constructability information and administrate the VM process. The entity assigned this responsibility is the ASSIGNED ENTITY and usually takes the lead in updating the VM

analysis tool. The Owner/Agency must make decisions that account for the limited resources that must be optimized to create the greatest overall value. The design professional must design to the program and project budget and be conscious of the value tradeoff decisions made by the Owner/Agency. All team members must collaborate to optimize overall value in lieu of protecting their turf to the detriment of the project.

Earlier the Better - Timing is key to the success of the VM effort. The greatest opportunities to optimize value occur early in the design process. Therefore, the VM process should focus in the early stages of design on major systems (mechanical, electrical, structural, and skin) and other significant decisions affecting programing, site conditions, etc. For example, the design options for the superstructure of a three-story building might include a composite steel and concrete frame, or a concrete beam/joist system. Both options meet the programmatic needs of the building, but one option may be significantly less expensive than the other given the specific design requirements, as well as other factors in the local marketplace. Typically, such an analysis should be performed during the development of the concept or schematic design so that the structural system and bay layouts are set as early as possible and will not affect the evolution of the architecture or systems. A less desirable situation would be if the suggested changing of the structural systems occurred after the design was at a 50% construction drawing level. As the design progresses the VM effort moves to more detailed options with less opportunity for major changes without the potential of having a major impact.

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Furthermore, timing is also a key in Owner/Agency decision making. Delaying critical decisions can disrupt the design, procurement and VM process flow leading to lost project value including costly re-design and preconstruction rework. The entire team should work to identify deadlines for the individual decisions for the Owner/Agency to: 1) keep every decision from becoming “critical” and 2) assist the Owner/Agency from missing the opportunity to make a value-based decision while it can still be incorporated effectively.

Everyone Must Understand the Goals - The entire project team must understand the value goals for the project. Some value goals are quantifiable; for example the project must be ready for occupancy before the start of the fall semester at a University, LEED Gold must be achieved, or the budget must not be exceeded. Others such as low maintenance and optimum life cycle cost are not as easy to quantify. It is important for the Owner to communicate their value goals to the team as early as possible in the project so the project team evaluates items during the VM process with these value goals in mind.

For example, the VM process can be used to enhance aesthetics and functionality/quality. While a sloped roofing system using asphalt shingles may be relatively inexpensive compared to a metal standing seam roof, the standing seam roof would generally be considered a superior aesthetic solution and may outlive the shingles by three to four times the life of shingles. The metal roof may also functionally outperform the shingles, affording the Owner/Agency better protection from leaks. A good VM analysis of the two systems would take performance issues, as well as the expense and inconvenience of a roof replacement into account. Therefore, the results of the analysis might determine that the more expensive roofing system is a better value.

Also, using a research laboratory as an example, the VE process can be used to enhance value by determining the best HVAC systems to reduce total life-cycle costs. These labs typically require 100 percent outside air with ten to twelve air changes per hour. Therefore, they consume tremendous amounts of energy to condition and heat (or cool) the incoming air. Although heat recovery systems such as glycol loops or heat enthalpy wheels may

increase first-time construction costs, operating expenses (energy consumption) are greatly reduced. Consequently, the increased costs could be recovered in as few as three or four years.

In both of these examples represent excellent VM ideas. However, the project may already be significantly over budget with the Owner/Agency's highest priority being a set fixed cost; in this case the team must focus VM efforts on cost savings options. The VM process must offer options to optimize value as defined by the Owner/Agency. When the Owner/Agency clearly communicates their value priorities the ASSIGNED ENTITY and the Design professional can calibrate their efforts to efficiently achieve the Owner/Agency priorities.

When a team member fails to meet one of these three requirements other team members may be impacted, sometimes significantly, and may jeopardize the success of the project.

The formal portion of the VM process is typically linked to a formal review and pricing of the design documents. The ASSIGNED ENTITY prepares the Construction Cost Estimates and conducts a constructability review of the design. In conjunction with this effort, the ASSIGNED ENTITY begins reviewing the design and identifying various design options that might enhance the value as described previously; the Owner/Agency and design professional (including consultants) should do the same thing.

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The goal is for the ASSIGNED ENTITY to capture ideas from all of the parties in a single document. Sometimes the collection (or brainstorming) of these ideas can be done in a workshop or charrette involving the entire project team. These individual ideas are often referred to as *Value Engineering* suggestions and feed into this overall Value Management process. After a list is compiled, the team should discuss the pros and cons of each option. This evaluation should be *value-based* and NOT just focused on cost reductions.

Because there is often a limited amount of design information available to define the work, extra communication between all members of the project team ensures the accuracy of the pricing and ultimately increases the likelihood of a proper evaluation and categorization by the Owner/Agency.

The ASSIGNED ENTITY should organize the Value Management list by major building components (site work, structure, skin, interior finishes, mechanical, electrical, plumbing, and other systems).

The formatting of this list (aka the "VM Tool") can vary based upon the project needs. The basic information that is required on the list includes the following:

- A numbering system that identifies a specific idea or design alternative
- A basic description of the idea/alternative (the description should evolve to include as much detail as possible so that, as the categorization and status of each item are determined, all project team members clearly understand the impacts and the design professions understand how to document the accepted changes)

- An Order of Magnitude Price (increase or decrease) from the corresponding Construction Cost Estimate for each item
- A method for the Owner/Agency to **categorize the option** (see description below)
- A date before which each decision must be made for each item
- An **approval status** (see description below)
- A method for determining how the cumulative approved changes impact the Construction Cost Estimate

Item **Categorization** should be based on input from the entire project team, but the final determination of the categorization of each item is the responsibility of the Owner/Agency. It is here that a single point of contact from the Owner/Agency portion of the team is crucial. The category assigned to each item must represent a consensus of the members of the Owner/Agency team. Suggested categories for the Owner/Agency are:

Category A - Regardless of available funding, these items would be recommended
Category B - Reasonable scope changes that offer value while supporting the program objectives
Category C - Drastic modifications altering scope and program objectives

It is vitally important for all team members to take into account the project program and the value goals set forth by the Owner/Agency when identifying the category of each item. The goal is for the project team to agree upon desired changes that will optimize the overall project value over the entire life of the facility. Assigning of items to categories can be done at any time, in a single day or multiple-day workshop, but due to the cost impact being tied to a specific pricing/design document, it is very important to keep close track of the status of each item relative to a specific Construction Cost Estimate and specific design document package.

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The VM analysis tool helps the team work through an **Approval Status** - which items have been accepted, rejected, or simply put on hold (pending). Accepted items should also be tracked closely as to whether they have actually been incorporated into the design and reflected in the current documents. Suggested Approval Statuses are:

- Pending
- Rejected
- Accepted
- Incorporated

In determining when to make a “go-no go” decision on each item, it is important to understand the timeline for which a decision must be made. This allows in some instances to delay difficult or uncertain decisions until necessary to maintain design and construction schedules.

Conversely, decisions can be made early and the project team can establish a *Wishlist* that can be tracked for items that could be added back to the project at a later date. For example, a decision could be made to use carpet in lieu of stone flooring in a building lobby during the schematic or design development phase of the work. An item then could be added to the *Wishlist* that is to add the stone back into the project if enough funds remain in the project budget once the construction progresses to a point where the flooring needs to be procured.

In determining the value of each item, the team should take in consideration that in many cases, the ideas are conceptual in nature and should establish a contingency for the likelihood that additive or deductive items may be slightly more or less respectively upon execution in the design.

The design professional should not proceed further in design without clear directives as to how to progress the design relative to the items being considered as part of the Value Management process. The ASSIGNED ENTITY should revise the previous Construction Cost Estimate summary information to reflect the Owner/Agency approved options.

In theory, this process could continue over and over again, but depending on how much is expected from the Value Management process, it can delay the design, add additional design/preconstruction cost, and there is a point of diminishing return where the time being spent is no longer worth the expected results. High level options should be evaluated early in the VM process and more detailed oriented options should be evaluated later in the process. This progression focuses effort in the way that maximizes value gains and supports the natural VM process sequence and conclusion.

Every project can benefit from a well-managed Value Management process regardless of whether or not the project is *over budget*. A common misconception is that this process is only necessary when a Construction Cost Estimate is over the approved cost limitation. In fact, it is increasingly being accepted as an industry best practice to go through a Value Management process on **every project** regardless of the status of the current Construction Cost Estimate. The goal of Value Management is to optimize the value by finding the best balance of cost, schedule AND quality, NOT just the cost.

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(b) Value Engineering

Value Engineering is a formalized three-to-four-day process that includes participation by project team members and other qualified consultants during which a systematic application of analyses are used for building systems and components of the work, establishing the value of these functions and selecting the necessary functions required to meet the Owner/Agency's program of requirements at the lowest overall life-cycle cost.

An experienced and preferably certified Value Engineer should lead the formalized VE process. VE should be performed near the completion of the Schematic Design Phase; however, VE can be performed at or near the completion of the Design Development Phase. In all cases, VE must be performed prior to the development and acceptance of a GMP Change Order. See *SCM Chapter3.4: Supplemental Consultants* and *SCM Subchapter 3.4.1: Consultant Assistance* for a description of the scope of services and activities of the VE consultant plus guidelines and procedures for selection and managing the VE consultant.

J. DESIGN DEVELOPMENT SERVICES

Based on the approved Schematic Submittal, the Design-Builder's Design Professional will expand and refine the project. The major elements of the Design Development Documents are the drawings, outline specifications, and possible illustrations, models, or renderings. The Design Development Documents are also required to be submitted by the Design-Builder for Initial Code Compliance Review to the State Fire Marshal's Office.

J1. Design Development Meetings

Design Coordination Meetings for the purpose of collaborating and coordinating the Design Development Documents shall be held by the Design-Builder. Attendees shall include the Owner/ Agency Project Management Staff, the Design-Builder's team, and the Executive Administrator. The Design-Builder shall be responsible to schedule and host these periodic meetings (as often as appropriate, but not less than monthly).

Through its Design Professional, the Design-Builder, together with the Owner/Agency and Executive Administrator, is responsible for coordinating the development of the design of the project within the budgeted cost and schedule.

The objective of the coordination is to make certain that the design meets the Design Professional's program in all respects.

Coordination between the parties facilitates the following items:

- Cost containment and monitoring
- Cost-effective decisions
- Compatibility with Owner/Agency's architectural standards
- Consistency with both the tenant and the Owner/Agency's expectations in the Design Professional's program

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- The appropriate provision of all necessary services and utilities
- The necessary level of environmental review and documentation
- That the Owner/Agency, and Executive Administrator are kept fully aware of the progress of the project
- That the project schedule is maintained
- That construction quality assurance complies with the Design Professional's Program
- That all design and Construction Documents are reviewed for constructability
- That permits and approvals are obtained for occupancy by the Design Professional

J2. Design Development Drawings

Design Development Drawings include the following in sufficient detail to convey to the Owner/ Agency the intended design solution that achieves the Design Professional's program requirements and in sufficient detail for the development of a statement of cost.

- Site Plan, including grade elevations, existing utilities and proposed utility, roads, sidewalks, parking areas, storm water system components, and similar elements of the site plan
- Building plans, including floor plans, building sections, elevations
- Tabulation confirming the program area (by type of space) reflected on the drawings as compared to the program areas
- Preliminary structural design including foundation building structural module, and typical details and notes
- Typical construction details
- Equipment layouts
- Preliminary furniture layouts
- Other drawings needed to describe the project

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J3. Outline Specifications

Outline Specifications should describe the size, character, and quality of the entire project. The outline should follow the CSI MasterFormat numbering system and include the following:

- Materials to be used, including example manufacturer and key installation criteria
- Criteria used in sizing major components
- Special equipment sizes and capacities
- Approximate layouts and clearances for selected components
- Typical finish schedule by types of rooms
- Descriptions of all mechanical and electrical systems, including preliminary material selection, equipment sizes, acceptable manufacturers and where necessary for clarity, the design objectives

J4. Illustrations and Models

Perspective illustrations, physical or 3-D computer models may be requested by the Owner. These services are performed as Additional Services.

J5. Statement of Possible Construction Cost

An updated Statement of Probable Construction Cost (SPCC) is to be provided by the Design-Builder and reconciled with the Executive Administrator.

J6. Project Schedule Update

The Design-Builder shall update the Overall Project Schedule on a monthly basis to reflect progress to date and anticipate design schedule dates and construction durations.

J7. Code Compliance Review

Initial Code Compliance Review is accomplished by the Design-Builder's submission of the Design Development Documents to the GSFIC Plan Review Division for the State Fire Marshal's review. Accompanying the drawing must be a Plans Transmittal Letter.

J8. Design Development Approval

Approval of Design Development by the Owner/Agency is required before proceeding to Construction Documents.

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J9. Design Development Checklist

The Board of Regents has developed a specific checklist of Design Development Submittal Requirements that may be used as a guide by other agencies for the development of a Design Development Submittal Checklist.

J10. Construction Component Change Order (CCO) Documents (Early Award Construction Packages)

In addition to providing Design Development Documents for the entire project, the Design Professional may also provide complete Construction Documents and specifications to the Design-Builder for the early award of construction component packages that have been identified by the Design-Builder. The Design-Builder shall be authorized to proceed with the work through the execution of a Component Change Order in accordance with Section Three, Part Two of the Design-Build Construction Contract.

The use of a Component Change Order allows the Design-Builder to proceed with construction on a defined portion of the work prior to the completion of Construction Documents on all parts of the project and also prior to the execution of a GMP Change Order. The Owner/Agency should require some form of assurance from the Design-Builder that these components, when bid, support the overall project cost limitation prior to award of the component to a trade contractor.

The Owner/Agency should not advocate the use of a CCO unless the entire project team fully understands the potential risks. Since portions of the project will be under construction while the remaining portions are still being designed, the use of Component Change Orders adds responsibilities and time constraints on the Design-Builder and Design Professional.

Component Construction Documents issued by the Design Professional for pricing should be complete and thorough so as to fully identify the scope of work required. The Design-Builder shall review the Component Change Order price as it relates to the current Probable Construction Cost Estimate.

The Design-Builder will recommend any appropriate corrective action necessary to maintain the Project Cost within the Stated Cost Limitation (SCL) to the Executive Administrator and Owner/Agency for approval. Only after approval by the Owner/Agency, the Executive Administrator shall issue a Proceed Order under the Component Change Order issued to the Design-Builder.

The issuance of a Component Change Order authorizes the Design-Builder to proceed with construction of the work and initiates the Construction Administrative Services.

K. CONSTRUCTION DOCUMENTS

Progressing the project documentation from earlier phases into Construction Documents reflects a fundamental shift from communicating the design intent of the Owner/Agency to communicating construction requirements to the Design-Builder.

K1. Review of Contractor Documents

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The Owner/Agency may require the Design-Builder to submit the Construction Documents through the Executive Administrator to a designated third party for a review of the constructability and completeness of the Construction Documents.

K2. Design-Builder's Responsibilities

The Design-Builder's responsibilities for providing proprietary design services such as steel detailing and shop drawings for construction means and methods must be approved by the Owner/Agency and clearly described in the Construction Documents. The performance criteria to be met by the Design-Builder's specialty consultant must be clearly indicated. As an example, the Design-Builder may have included options relating to specified roofing systems in the design. The roofing systems manufacturer would be required to meet the specific wind uplift criteria and demonstrate by calculations and shop drawings sealed by a Georgia-licensed engineer that the criteria have been met.

Such delegated design is consistent with normal industry practice. However, caution should be used to avoid transferring the Design Professional's obligation under applicable law to a third party.

K3. GMP Change Order

When the Contract Documents for the entire project have reached a stage of completion of approximately 80 percent, but not later than thirty days after the completion of the Contract Documents, the Design-Builder shall submit a proposed change order to the Design-Build Construction Contract to the Executive Administrator and the Owner/Agency in order to establish the Guaranteed Maximum Price (GMP). This change order shall include all costs to perform the construction of the entire project in accordance with the Owner/Agency's program of requirements as described in the Construction Documents and to achieve Final Completion by a date specified in the change order.

The Executive Administrator shall review the prepared GMP Change Order to determine its compliance with the Owner/Agency's program of requirements and the terms and conditions of the Design-Build Construction Contract.

Consequently, the Executive Administrator shall recommend approval or disapproval to the Owner/Agency of the GMP Change Order. The recommendation shall include the following:

1. Analysis of the GMP Change Order price as it relates to the Probable Construction Cost and to the Stated Cost Limitations
2. Establishment of an amount to be the Owner/Agency's contingency reserve
3. Confirmation that the scheduled completion date in the GMP Change Order is consistent with the completion dates in the Overall Project Schedule

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4. Confirmation that the work in the proposed GMP Change Order and the assumptions on which it is based are consistent with Owner/Agency's program of requirements and Construction Documents

If the GMP Change Order reflects a GMP which, taking into account the contingency reserves recommended by the Executive Administrator, exceeds the Stated Cost Limitation for construction of the project, the Design-Builder, in collaboration with its Design Professional, shall recommend such corrective action necessary to reduce the GMP price so that it is within the SCL. If the Owner/Agency agrees to a GMP that exceeds the SCL, then the SCL shall be thereafter be equal to the GMP price. The Design-Builder or its Design Professional shall not receive any increase in compensation as a result in the change to the SCL. The GMP Change Order will incorporate all of the previously approved Component Change Orders into the GMP price.

Upon approval of the GMP Change Order the following shall occur:

1. The Owner/Agency shall issue to the Design-Builder a Notice to Proceed.
2. The Design-Builder's Design Professional shall complete the design of the project. The completed design will include Construction Documents and shall be developed in accordance with the basis of the work as stated in the GMP Change Order.

SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.7: Design-Build

SUBCHAPTER 3.7.2: COMPONENT CHANGE ORDER AND GMP



When the Owner/Agency executes the Design-Build Construction Contract, the Owner/Agency is only authorizing the Design-Builder to proceed with *Pre-Construction Services* as described in *SCM Chapter 3.7.1: Pre-Construction*. No work may occur on site until the Owner/Agency executes either a Guaranteed Maximum Price (GMP) Change Order or a Component Change Order (CCO).

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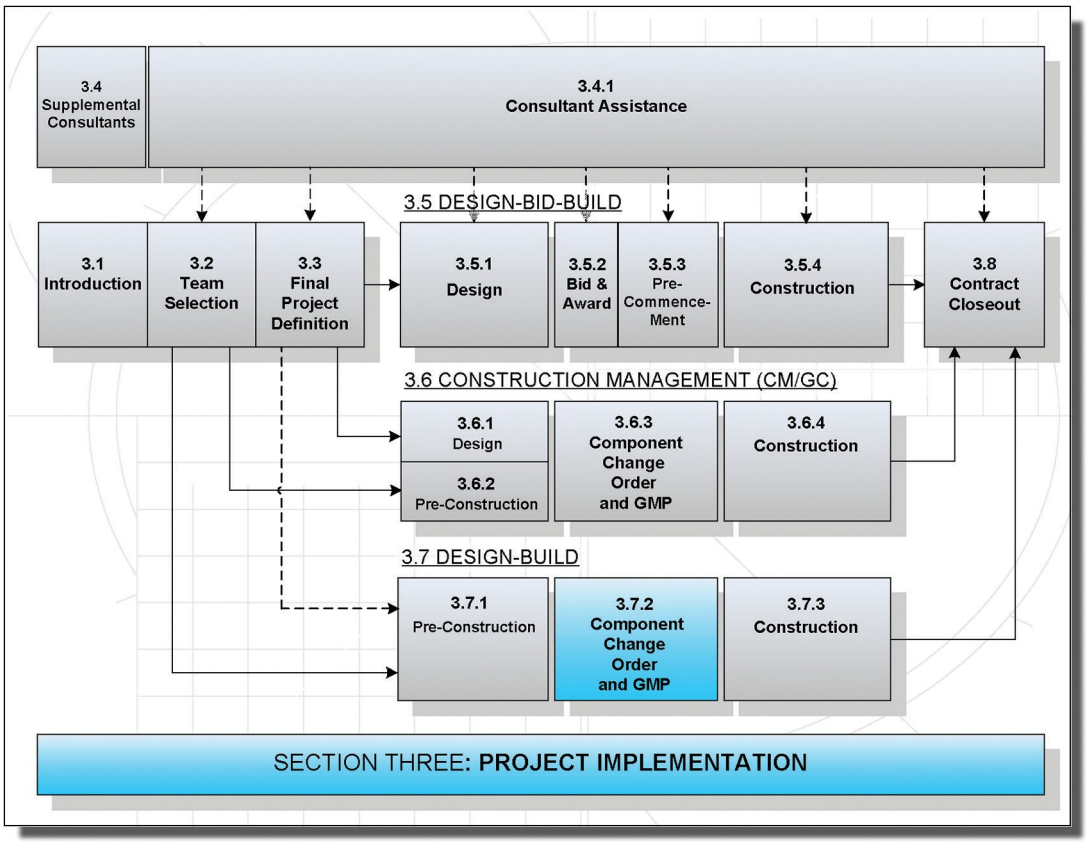


Figure 70: The Project Implementation Flow Chart

A. GMP CHANGE ORDER

The Guaranteed Maximum Price (GMP) is the amount that the Owner/Agency is obligated to pay the Design-Builder for the construction of the project pursuant to a defined scope of work and schedule. The GMP Change Order is the instrument that establishes this price after much of the design and pre-construction work is finished. The Design-Builder offers a GMP Proposal to facilitate the GMP Change Order.

The amount of the GMP Change Order cannot exceed the Stated Cost Limitation (SCL) for construction, and the Owner/Agency can not authorize any amount greater than the SCL.

The GMP may be established prior to having complete Design Documents; therefore, it is essential that the documents that support the GMP Proposal and subsequent GMP Change Order are well developed and carefully prepared in order to successfully control cost during construction as well as to avoid potential misunderstandings and/or claims. The following is *best practice* on how and when to establish a GMP.

A1. Timing of the GMP

Section Three, Part Three of the Design-Build Construction Contract establishes that the GMP can be formalized at any time after the completion of the Design Development Documents, but not later than thirty days after the completion of Construction Documents. The Owner/Agency must carefully evaluate factors such as risk allocation, quality of the Design Documents, size of contingency, timing, and similar factors in order to determine when to require a GMP.

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Often, the anticipated construction costs associated with early design solutions exceed the SCL, necessitating Value Engineering and redesign. The GMP should be established when there is an acceptable design solution, and the Design-Builder is willing to offer a GMP Proposal at a cost that is less than the SCL. Typically, the GMP is established after the Design-Builder has received bids or confirmation pricing from trade contractors for a significant portion of the work (suggested percentage range is at least 75 percent of the cost of the work).

The Design-Builder will bid work to the trade contractors based upon incomplete documents; therefore, it is incumbent upon the Design-Builder's Design Professional to disclose as much information to the trade contractors as possible about how the design will be finished. The Design-Builder is responsible to obtain this information from its Design Professional to minimize change to the GMP. The GMP Change Order will include Assumptions and Clarifications documenting this information.

The above are recommendations and represent *best practice*; however, the GMP can be established at any time following completion of design development drawings, and the natural tendency or desire is for the Design-Builder to guarantee construction costs as early as possible. But the Owner/Agency should not advocate an earlier GMP unless the entire project team is experienced at doing so and fully understands the potential risks, examples of which are outlined below.

(a) Examples of Risks Associated with Requesting a GMP Prematurely

When the GMP is established very early, there is more guesswork as to the exact scope of work that will eventually be required for the Final Design documents, therefore making the Design-Builder's cost estimates inherently less accurate. At this early stage, Design-Builder will be relying more on budget estimates rather than confirmed pricing from trade contractors.

The Design-Builder may require larger contingencies for these added risks that, by nature, may create budget pressures that force cuts in quality and scope; therefore, the Design-Builder's early GMP is likely to overstate the true costs of construction.

The Design-Builder may be conservative in establishing a GMP and once trade contractor bidding is completed, significant buyout savings may be returned to Design-Builder's construction contingency. The Owner/Agency may have to wait until closer construction before having an opportunity to spend those savings on the project.

Conversely, it is also possible that the Design-Builder may grossly *underestimate* the cost of the work when establishing a GMP based upon early Design Documents. This could result from several different factors including poor communication, poor design information, or just inexperience on the part of the Design-Builder when performing conceptual estimates. The Design-Builder could suffer large financial losses, which normally have a detrimental impact to the Design-Builder's performance with respect to schedule, quality, and cost control (claims).

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Another fundamental challenge with an early GMP is that the scope of the final design is not yet known, forcing the Design-Builder to make a series of assumptions of what its Design Professional will eventually design. These assumptions should be included as part of the GMP Change Order. Although the assumptions are largely based upon the Design-Builder's experience in constructing similar projects, the assumptions could still be wrong, thus setting the stage for potential disagreement within the design-build team concerning whether or not the scope of the final design is consistent with the GMP.

(b) Examples When Requesting a GMP Later in the Process

Conversely, it would be very easy to delay the timing of the GMP until after receipt of 100 percent of the Construction Documents. In this way, little or no assumptions would need to be included in the GMP; however, this approach also contains risks. An Owner/Agency should be aware that until there is a GMP, the final price is not guaranteed by the Design-Builder. This remains true even if the Design-Builder has performed numerous estimates, all of which may have indicated that construction costs would be less than the Stated Cost Limitation (SCL).

When the timing of the GMP is delayed until the end of the design, it is possible that the sum total of all of the bids received from the trade contractors might exceed the SCL forcing a time-consuming redesign. Simply put, a GMP at the completion of the design affords no better control over costs than the Design-Bid-Build delivery method.

The Owner/Agency, Executive Administrator, and members of the Design-Builder team should openly discuss all of the above issues and determine the optimum time to establish the GMP based upon the collective experience of the team as well as the specific nature of the project. The recommended best industry practice is to establish the GMP at 75-80 percent Construction Documents.

A2. Submittal Requirements

The GMP Change Order Proposal necessitates the preparation of many attachments, and the requirements for such are outlined in the contract. These documents establish the defined scope of work, the design of that scope, and the construction parameters under which that work will be delivered. The attachments to the change order should include, but may not be limited to the following:

- Estimate (breakdown of the price)
- List of the Design Documents (drawings, specifications, addenda, bulletins, and similar documents) that the Design-Builder relied upon to prepare the price
- Summary of all work that is excluded from the price
- Construction schedule
- Shop drawing approval schedule

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- Component schedule indicating any required phasing of the design
- Design Professional's concurrence that the program requirements have been met by the design and all applicable building codes and life safety requirements have been included in the design
- Staffing plan and wage salary schedule
- Proposed budget for the Design-Builder's overhead costs (site offices, temporary structures, staffing, and similar costs)
- Qualifications made by the Design-Builder in preparation of the GMP

B. Component Change Order

A Component Change Order (CCO) is a change order authorizing the Design-Builder to proceed to construct an element of the project. For this element of the project, the Executive Administrator and the Owner/Agency agree to prepare or segregate Construction Documents as a discrete package to permit early procurement and commencement of specific construction elements. This CCO creates a Guaranteed Maximum Price (GMP) for only a portion of the project.

The mechanics of the CCO are very similar to the GMP Change Order, and the support information required by a GMP should be used for the submittal of a CCO proposal.

The Owner/Agency and Executive Administrator should not advocate the use of a CCO unless the entire team is experienced at doing so, and fully understands the potential risks as outlined in this section. By using the CCO process, work begins on the project without an overall GMP being in place; therefore, the Owner creates the risk of whether or not a Guaranteed Maximum Price (GMP) can ultimately be established for the full scope of work within the Stated Cost Limitation (SCL). The *best practice* would be to delay the start of any construction until a GMP Change Order is executed for the entire project.

An example of a commonly used CCO would be for the abatement of any hazardous materials or the demolition of an existing building to ready the site for the construction. Another example might be to relocate utilities that conflict with new construction. In these examples, the CCO is a tool to expedite the construction by starting critical activities earlier in the process. These are good uses of a CCO, as this scope of work is easy to identify, and can be accurately priced. In addition, this type of work may need to be done regardless of how the design of the new building may be finalized.

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Other uses of a CCO may include foundation work, construction of the superstructure, procurement of long lead items, or other work that may be on the Design-Builder's critical path. This kind of a CCO is inherently more risky and locks in key design attributes such as the building shape, size, and programmatic layout long before the design is finalized. Despite the fact that the Owner/ Agency and Design-Builder may be fully committed to finalizing the design at a GMP within the SCL, the Owner is not afforded such ultimate price guarantees until the total GMP Change Order is executed. Once the Owner/Agency starts down this path, it would be very difficult to reduce the size or reconfigure the building to reduce costs later in the process.

Unless the schedule benefits gained by these fast-track techniques offset the added cost risks, this method of proceeding should be delayed until a total GMP Change Order has been executed. In the event that these schedule benefits outweigh the cost risks, the Owner/Agency may elect to proceed with a phased design and construction plan that necessitates multiple CCOs. The Owner should establish a process of evaluating each CCO against the SCL. The Owner/Agency should be convinced that the Design-Builder's team can be successful in delivering the project within the SCL. An Owner/Agency without sufficient experience to answer this question affirmatively should seek advice or guidance from other agencies that have experience using CCOs. In addition, Owners might consider the following actions:

1. Verify that the remaining contingency is adequate to make certain that the GMP Change Order can be executed within the SCL.

2. Require that Owner/Agency and Design-Builder (including their Design Professional) clearly demonstrate how they will work together to complete the desired design within the SCL.

3. Verify that the estimated value to complete the remaining work is adequate by comparing these estimated costs against the costs of other similar projects.

4. Obtain a cost estimate from a third-party consultant to verify the Design-Builder's cost estimate and to reconcile any differences.

5. Create a series of potential changes to reduce the scope of work or evaluate the quality reductions (that could be implemented if required without making the work performed in an earlier CCO obsolete).

Once committed to proceed with any CCO, the contract requires the Design-Builder's Design Professional to provide component Construction Documents that meet the following minimum criteria:

1. The design shall reasonably show the intent of the work to be accomplished.

2. The design shall be sufficient for the Design-Builder to price the work.

MFC

3. The design shall meet regulatory and Fire Marshal Requirements.

4. The design shall be sufficiently detailed to preclude the necessity for rework as the Construction Documents proceed to 100 percent completion.

In addition to the above criteria, the Owner/Agency should not approve a CCO unless the value of the CCO is within the budget for that portion of the work. The Owner/Agency cannot rely on any projected savings that might be generated after pricing future scopes of work. In the event that the value of the CCO is over budget, the scope of the work included in the CCO shall either be revised until the value is within budget, or changes should be made in the scope of work to offset the added costs.

C. GMP DOCUMENTS

The Owner/Agency, Executive Administrator, and Design-Builder's team must exercise due care in the preparation and review of these documents in order to successfully use the GMP as a tool to manage design and construction changes for successful cost and quality control.

D. ESTABLISHING THE PRICE

The GMP Change Order is defined as the total of (1) the estimated cost of the work, (2) the construction contingency, (3) the Design-Builder's fee, and (4) the Design -Builder's overhead costs and expenses. The GMP Change Order should consolidate and account for all previous Component Cost Change Orders executed prior to this GMP Proposal. The following are procedures and some basic expectations that the Owner/Agency has for the Design-Builder's GMP Proposal. It is expected that the entire Design-Builder team including the Design Professional will have reviewed all cost information prior to submittal to the Owner/Agency and Executive Administrator.

D1. Cost of the Work

The cost of the work is defined in great detail in Section Four, Part Four of the Design-Build Construction Contract and is intended to include all costs of construction from the trade contractors (and any self-performed work by the Design-Builder if the Owner/Agency has provided written approval). The cost of the work might be in the range of 85 percent to 90 percent of the total value of the GMP, depending upon the specific nature of the project. The cost of the work is the largest component of the GMP. Prior to submission of the proposal, the Owner/Agency, Executive Administrator, and Design-Builder should discuss and agree upon the format of the proposed estimate in order to facilitate a better and faster review. The Design-Builder is then expected to produce the detailed information necessary to justify the cost of the work. The estimate should be presented in sufficient detail so that the Owner/Agency and Executive Administrator can fully review, understand, and confirm the estimate. This information would include actual proposals and detailed estimates. The Owner/Agency and Executive Administrator should have full open book access to all cost information the Design-Builder has developed when validating the proposed cost of the work.

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The industry *best practice* would be to establish the GMP after the Design-Builder has been able to receive bids from trade contractors for a significant portion of the total value of construction; therefore, a large component of the GMP will be based upon actual bids. The GMP Proposal should clearly indicate those bids, and the Owner/Agency and Executive Administrator should have the access and opportunity to review them in detail.

The remaining portion of the estimate must be prepared in sufficient detail so that the Owner/Agency and Executive Administrator can fully evaluate the Design-Builder's anticipated costs. The estimate shall be fully detailed with quantities and unit costs; therefore, this portion of the estimate could and should have several hundred line items. For example, the Owner/Agency and Executive Administrator should not expect to receive an estimate with a lump sum price for the value of the HVAC system (assuming that work had not yet been bid). The estimate should fully detail all of the labor, material, equipment, and other vendors. For example, the detailed estimate might indicate pounds of sheet metal ductwork (by type and price); lineal feet of pipe (by size, type, and price); controls (by number of points and price); and so on.

While the Design-Build Contract does not allow any cash allowances, any time the Design-Builder is going to GMP without 100% construction documents there are going to be scopes of work with too little information to support trade contractor pricing. In the past, it has been very common for the GMP to include agreed-upon not-to-exceed budgets for work such as landscaping, signage, millwork, audiovisual equipment, and similar allowances. This convention puts more pressure on the Design-Build Team, and in particular the Design Professional, to better define this work earlier in the design process.

E. CONTINGENCIES

E1. Design Contingency

The design contingency and its components are defined in Section Four, Part Four of the Design-Build Construction Contract. These are funds set aside by the Owner/Agency for discrepancy in Construction Documents, omissions, or Owner-directed changes in scope.

The Owner is in control of this contingency, and it can only be used by the Design-Builder upon receipt of a change order issued by the Owner/Agency or Executive Administrator.

E2. Construction Contingency

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The construction contingency and components that are acceptable uses of this contingency are defined in Section Four, Part Four of the Design-Build Construction Contract. The construction contingency is an amount of money that the Design-Builder is allowed to set aside in the contract for unanticipated events that may arise during construction and that would affect the cost of work. These costs might be caused by unanticipated events (arising from changes in market conditions), poor performance or defaults by trade contractors, omissions or oversights in the GMP estimate, or acceleration costs needed to overcome potential delays, and similar unanticipated events

When the GMP is established early in design, the required contingency will be much higher than that required if the GMP is established after the completion of the design.

Although the average amount for this contingency might be about 3 percent of the total construction costs, every project is unique; therefore, the exact amount should be determined based upon the specific risks unique to the project.

Prior to the submission of the GMP, it is suggested that the Owner/Agency, Executive Administrator, Design-Builder and its Design Professional should meet and openly discuss all of the potential risks involved in the construction of the project and create a matrix that assigns responsibility for these risks. For example, the additional construction costs associated with work such as rock excavation, undercut of poor soils, asbestos abatement, relocation of unknown utilities, and similar construction costs are just a few examples of how the scope and cost of construction can escalate during construction and would normally be considered Owner cost responsibilities.

The team should capture all of this information and create a matrix that lists different potential changes in scope or costs, as well as sources to fund these potential costs. To the extent that the costs are to be funded by the Design-Builder (without an adjustment to the GMP), the amount of the contingency should be established by the Design-Builder to appropriately deal with those potential costs.

After the Design-Builder has completed the bidding to the trade contractors, the amount of this construction contingency should be evaluated to determine if any savings (if applicable) could be returned to the Owner.

F. DESIGN-BUILDER'S FEE

The Design-Builder's fee is determined during the Qualification-Based Selection process and subsequent contract negotiations. This fee may be in the form of a percentage of the total construction costs or as a fixed lump sum amount. This fee is included in the GMP Proposal and shall be the same fee as that agreed upon during the contract negotiations. Section Four, Part Two of the Design-Build Construction Contract provides definition of home office as overhead expenses that are not to be included in this fee.

G. DESIGN-BUILDER'S OVERHEAD COSTS AND EXPENSES

Overhead costs are defined in the Design-Builder's fee in Section Four, Part One of the Design-Build Construction Contract. These costs include the Design-Builder's field over- head, including the salaries of the on-site staff, Design Professional fees (if any), temporary offices, bonds, insurance, permits, temporary construction, temporary utilities, cleanup, layout, and similar overhead items. These overhead costs are *not* to include the Design-Builder's home office costs as defined in Section Three, Part Four of the Design-Build Construction Contract.

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In addition to the Design-Builder's fee, the Design-Builder includes a not-to exceed limit for overhead costs and expenses.

Should the Design-Builder propose to change the agreed-upon expense estimate, the change shall be done with appropriate explanation, justification, and the contract agreement amended by change order. The Design-Builder will have prepared multiple construction estimates prior to the presentation of the GMP Proposal, and the revised expense estimate should have been captured in these estimates. The GMP Proposal should not be the first time that the Design-Builder advises the Owner/ Agency and Executive Administrator of any changes in the expenses.

In general, it is expected that the level of effort required by the Design-Builder (in terms of staff) shall not change significantly from the time of contract negotiations.

H. ESTABLISHING THE DATE FOR MATERIAL COMPLETION

The desired date for Material Completion of the project is included in the Owner/Agency's program of requirements and in the Design-Builder's Overall Project Schedule submitted during the Pre-Construction Phase. The Design-Builder shall base the GMP on achieving that date, which may necessitate the inclusion of the cost of overtime or other schedule premiums.

However, prior to preparation of the GMP Proposal, the Owner/Agency, Executive Administrator, Design-Builder and its Design Professional should have discussed any extraordinary efforts (cost premiums) required on the part of the Design-Builder that might be necessary to achieve project completion prior the proposed date of Material Completion. The Owner may elect to adjust the date to avoid these cost premiums. The construction schedule (attached to the GMP Proposal) and the GMP Change Order shall reflect any changes in agreed-upon completion date.

I. ESTABLISHING LIQUIDATED DAMAGES

Liquidated damages (LDs) are not a penalty, but rather an estimated value of losses incurred by the Owner/Agency by not having the project delivered on time. The values of liquidated damages are included in Section One, Part One of the Design-Build Construction Contract.

The Design-Build Contract should reflect fair and equitable liquidated damages should they need to be assessed. The Owner/Agency should attempt to estimate those costs based upon a true impact of damages. An easy-to-understand example would be in the construction of university student housing. Should the Design-Builder finish the housing late, the Owner/Agency would incur additional expenses to rent temporary lodging for the students. The cost of temporary housing and any moving costs to the permanent housing would be reasonable damages. For projects more difficult to quantify, the Owner/Agency should consult with other agencies for guidance. The amount of the damages can vary dramatically from project to project.

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J. DEFINING THE SCOPE OF WORK INCLUDED IN THE GMP

It is the responsibility of the Design-Builder to provide the statement of the basis of the GMP. When the design is not 100 percent complete, the Design-Builder is to provide a written narrative as to any exclusion, clarification, or assumption that might be necessary to clearly define the scope of work included in the GMP. In a separate document, the Design Professional shall certify that the scope of work meets the program of requirements, and all related life safety and code requirements have been included in the design.

From the Owner/Agency's perspective, the goal would be that such a list would be very short. It is desirous to have the Design-Builder's Design Professional define as much of the design as possible regarding how the project design will be finished.

The Owner/Agency, Executive Administrator, and Design-Builder must remember that these lists are the basis of the GMP; therefore, they will potentially be used later to evaluate whether or not change orders to the GMP are justified. To the extent that the final design differs from these assumptions, a justification for a change in the GMP is required. Therefore, the preparation and subsequent review of these lists are critically important to establish a meaningful GMP.

It is also critically important that the Design-Builder carefully outline the qualifications made in preparation of the GMP. Failure to do so may result in a waiver to claim additional costs despite how the design is completed.

K. REVIEW OF THE GMP

The Owner/Agency, Executive Administrator, Design-Builder and its Design Professional must sufficiently review the GMP Proposal in order to validate the cost and the qualification statements. The time for acceptance or rejection of the proposal is limited to fifteen (15) days by the contract. In the event that the Owner/Agency does not have the expertise or experience in reviewing such a proposal, the Owner/Agency should seek help from other resources such as an Executive Administrator, and/or project management consultant.

The Design-Builder will have prepared a great deal of information as part of the proposal. The Design-Build Construction Contract requires a meeting between the Owner/Agency, Executive Administrator, and the Design-Builder prior to its acceptance of the GMP to present this information in a manner that the Owner/Agency and Executive Administrator deem necessary. Whether the information is included in the actual proposal or not, the Owner/Agency and Executive Administrator should have full open book access to whatever information they need to validate the price and scope of the GMP. This meeting and subsequent detailed review will be the basis for the approval or rejection of the proposal.

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A common mistake is to focus the review on the price only. Given that the design is not likely to have been completed, the Design-Builder has made many qualifications to how the design will be completed. It is the responsibility of the Design-Builder to produce this list of qualifications. While neither the Owner/Agency, Executive Administrator or its consultants have a duty to discover potential errors in the proposal, it is their responsibility to review the proposal until they are satisfied that the Design-Builder has priced the right scope of work. Failure to do so could lead to disputes as to whether or not the final design is consistent with the basis of the GMP.

The goal is to attach a list of qualifications to the GMP that contains as few items as possible. Because specific qualifications made by the Design-Builder to clarify the intent of the design are needed, it is preferable that the Design-Builder's Design Professional should provide that additional design information. After receipt of the enhanced design information, the Design-Builder should modify the pricing (if appropriate) and remove the qualification from the list.

If the Owner/Agency or Design-Builder's Design Professional finds any qualification that is in conflict with the intent of the design, the Design-Builder shall be given direction to correct the pricing and remove the qualification from the list. Further, any specific qualifications that are not required to clarify the design shall also be removed from the list. When reviewing each of the individual qualifications, the Executive Administrator, the Owner/Agency, the Design-Builder and its Design Professional should ask a basic question: **Are the Design-Builders correct in their assumption?**

If the answer is **NO**, then the Owner/Agency should direct the Design-Builder's Design Professional to clarify the intent of the design, and the Design-Builder should revise their price proposal and the item should be removed from the list.

If the answer is **YES**, the item should remain on the list and the qualification becomes a basis of the GMP. To the extent that the design is not completed in accordance with the qualification, the GMP may require an adjustment if the Owner/Agency is responsible for the change in criteria.

If the answer is **UNKNOWN**, the qualification should remain on the list. In the event that the specific qualification is later found to be wrong, this could justify an adjustment to the GMP; however, the Owner/Agency can designate that the costs for a specific type of item be funded from the Design-Builder's contingency. Such designation should be made prior to the execution of the GMP Change Order, and the Design-Builder shall be afforded the opportunity to modify the amount of contingency included in the proposal. The GMP Change Order shall appropriately document such agreements.

After thorough review of these qualifications, the Owner/Agency must reconcile any exclusion with the Total Project Budget. The Owner/Agency must identify the funding source of any work that is excluded by the Design-Builder. In the event that such work is not accounted for in the overall project budget, the SCL for the construction work may need to be decreased appropriately to make certain that the Owner/Agency has adequate total project funding.

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After review of the GMP Proposal, and prior to the expiration of the fifteen days after receipt of the proposal, the Owner/Agency must approve or reject the proposal. Procedures for approval and rejection are outlined in Section Three, Part Four of the Design-Build Construction Contract; however, the Owner/Agency has the ability to reject the proposal with the expectation that the Design Builder is to revise and resubmit either a better proposal or a corrected proposal. In order to help facilitate this whole process, the Owner/Agency may wish to establish a one-day or multiple-day workshop with the entire team to review and revise the GMP Proposal as necessary. In this way, the Design-Builder can better clarify the assumptions made in the preparation of the proposal.

The Owner/Agency also has the ability to reject the proposal with a desire to terminate the contract. Termination procedures are outlined in Section 5, Part Three of the Design-Build Construction Contract and in *SCM Subchapter 3.7.3 D7(b)*. Prior to contract termination, the Owner/Agency should seek appropriate guidance as necessary to fully understand any cost and schedule ramifications associated with that action.

L. REPLACEMENT OF THE GMP WITH A LUMP SUM

The Design-Build Contract allows for the GMP to be replaced with a lump sum price at the Owner/Agency's sole option. While such a conversion does in fact simplify some of the accounting and reporting procedures, it also changes the relationship with the Design-Builder to that more indicative of a Design-Bid-Build approach. Unless there are compelling reasons to do so, the GMP should not be replaced with a lump sum.

Under this Design-Build delivery method, the Design-Builder is reimbursed for actual costs, plus a fee up to the price of the GMP. The Design-Builder is *not entitled* to retain any savings should the GMP be greater than the final cost of the work (plus the fee and allowable overhead costs). At the completion of the project, the Owner/Agency realizes all the savings. It is possible that such savings could be significant, especially if the GMP was established before the Design-Builder received confirming proposals from trade contractors. It is therefore possible that scenarios could arise creating a compelling justification to replace the GMP with a lump sum in order to recover savings early. A better alternative to conversion might be for the Design-Builder to allow an early release of contingency via a change order to the GMP.

In the event that it is desirous to replace the GMP with a lump sum, the Owner/Agency should be aware that during this process, the Design-Builder may elect to enhance their fee, and retain all savings after conversion to the lump sum. In order to reduce this potential, it is recommended that the Owner/Agency should only request a proposal from the Design-Builder after (1) the design has been completed, and (2) the Design-Builder has received bids for all of the work. The format of the proposal shall be such that the Owner/Agency can fully audit the Design-Builder's anticipated final costs.

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The Design-Builder shall produce a fully detailed and open-book estimate supporting the proposal, indicating itemized committed costs, anticipated costs, contingencies, and fees. The Design-Builder shall provide copies of all information that the Owner/Agency or Executive Administrator might require to audit these costs including, but not limited to, subcontracts, purchase orders, bids, accounting records, payroll journals, and similar costs. The Design-Build Construction Contract includes provisions to hire a professional auditor with the cost of such services to be paid from the Design-Builder's contingency. While it may be appropriate for the Design-Builder to include contingencies in the lump sum proposal for estimated potential costs for various risks, the Owner/Agency should carefully evaluate the amount of such contingencies. To the extent that the Design-Builder has passed such risks to the trade contractors, contingencies should not be allowed in the proposal. Again, all unused contingencies at the end of the lump sum project scenario become additional fee or profit for the Design-Builder.

SECTION THREE: PROJECT IMPLEMENTATION

Chapter 3.7: Design-Build

Subchapter 3.7.3: Construction Phase



The Design-Build Contract is a unique contract delivery method in which the Design-Builder contracts with the Design Professional; therefore, the Design Professional cannot represent the Owner/Agency. However, the Design Professional still maintains its professional responsibility to the Owner/Agency and the public for public safety and adherence to the Owner/Agency's project program requirement.

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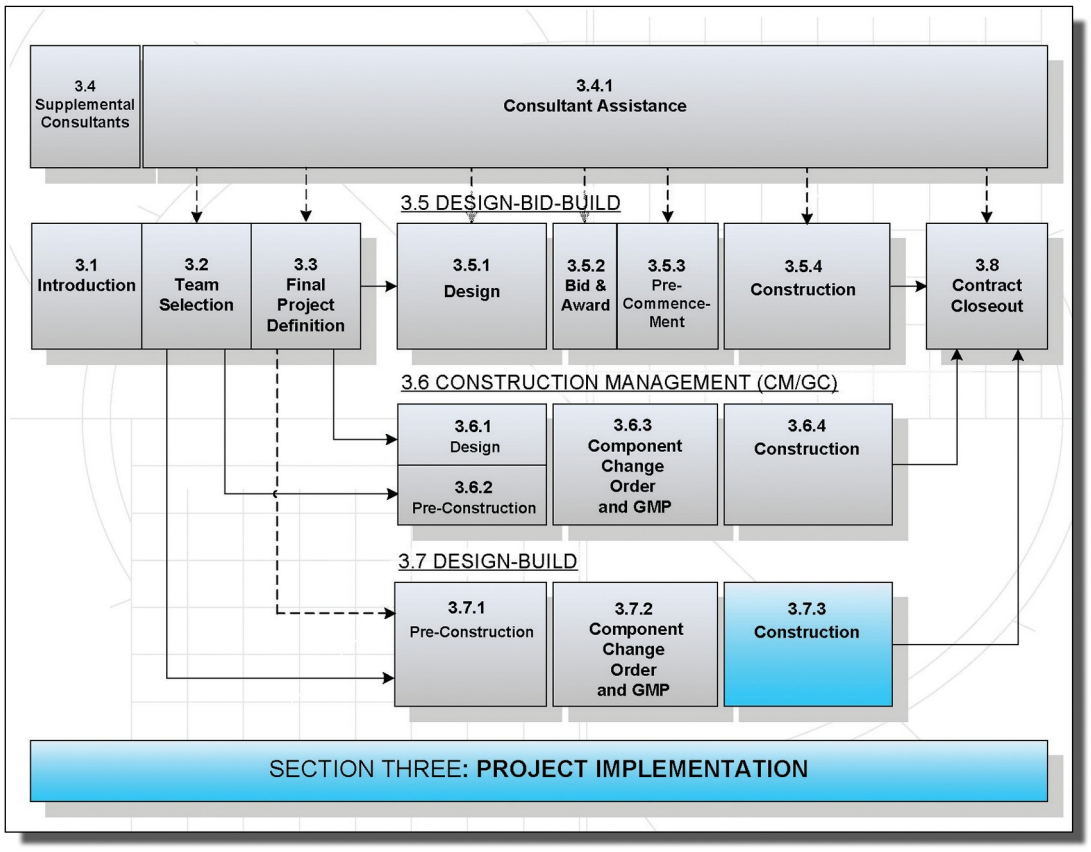


Figure 71: The Project Implementation Flow Chart

The duties typically performed by the Design Professional during Construction Administration must be divided between the Executive Administrator (or Owner/Agency if an Executive Administrator is not appointed), and the Design-Builder's Design Professional. Ultimately the Executive Administrator shall review and approve payments, recommend acceptance of the work, and initially decide on matters of contract interpretation. A preliminary responsibility matrix is included in Figure 72.

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RESPONSIBILITY MATRIX

SERVICE	EXECUTIVE ADMINISTRATOR	DESIGN PROFESSIONAL
Contract Administration	X	
Monthly Progress Report	X	
Monitor Design Build Performance	X	
Respond to RFIs		X
Shop Drawing Reviews		X
Evaluation of the Work		X
Acceptance of the Work	X	
Changes in the Scope of Work	X	
Recommendation of Change Order to Owner	X	
Review & Acceptance of Submitted Schedule	X	
Responsibilities that the Design Meets Code		X
Responsibilities that the Design Meets the Program Requirements	X	
Resolution of Disagreements	X	
Certification of Payments	X	
Recommendation on Contract Termination	X	
Shared Notice of Unacceptable Work	X	X

Figure 72: The Responsibilities Of The Executive Administrator And Design Professional

A. EXECUTIVE ADMINISTRATOR CONSTRUCTION ADMINISTRATION SERVICES

A1. Contract Administration

These services shall commence upon the issuance of either a Component Change Order or a GMP Change Order and a letter of authorization from the Owner/Agency requesting such services. The Construction Administration Service duties consist of both office and field services necessary for the Executive Administrator to administer the requirements of the Contract Documents, interpret and clarify the Contract Documents, and require the Design-Builder's compliance with the Contract Documents.

The Executive Administrator's office services are performed during the Construction Phase and are those administrative and technical tasks that do not require or comprise of onsite observations such as maintaining correspondence and records, and similar administrative and technical tasks. See Section One, Part Three of the Design-Build Construction Contract for additional explanation and guidelines on these specific Executive Administrator's office services.

Executive Administrator field services include onsite observation, evaluation and documentation by the Executive Administrator and its consultants to guard against non-conformity of the work with the Contract Documents, observations, and documentation of any compliance concerns with the Overall Project Schedule, the superintendence of the work, and the qualifications of the skilled workers. See Section Two, Part One of the Design-Build Construction Contract for additional explanation and guidance for Executive Administrator field services.

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A2. Monthly Progress Report

The Executive Administrator shall provide a monthly written report on the progress and condition of the work.

A3. Interpreter of the Documents

The Executive Administrator shall be the interpreter of the Contract Documents. This shall include evaluating all requests for changes in the scope of work and compliance with contract provisions.

A4. Certification of Payments to the Design-Builder

The Executive Administrator shall review (and correct if required) and certify the Design-Builder's monthly Application for Payment (periodical estimate). The Executive Administrator shall also submit an *Advice on Construction Progress* with the Design-Builder's Application for Payment. The Executive Administrator shall not approve payment for work that is non-compliant with the Contract Documents. The Executive Administrator shall withhold an amount of the value of all incomplete work after Material Completion. Reference the Design-Build Construction Contract.

A5. Changes in the Work

It is normal for changes in the Contract Documents to occur during the Construction Phase of a project. The change could be the result of unforeseen job site condition or a new requirement of the Owner/Agency. Approval of the Owner/Agency through the Executive Administrator is required prior to any change of the work. The Design Professional will be responsible for providing the information as listed in Figure 73, the "Two-Step" Change Order Process:

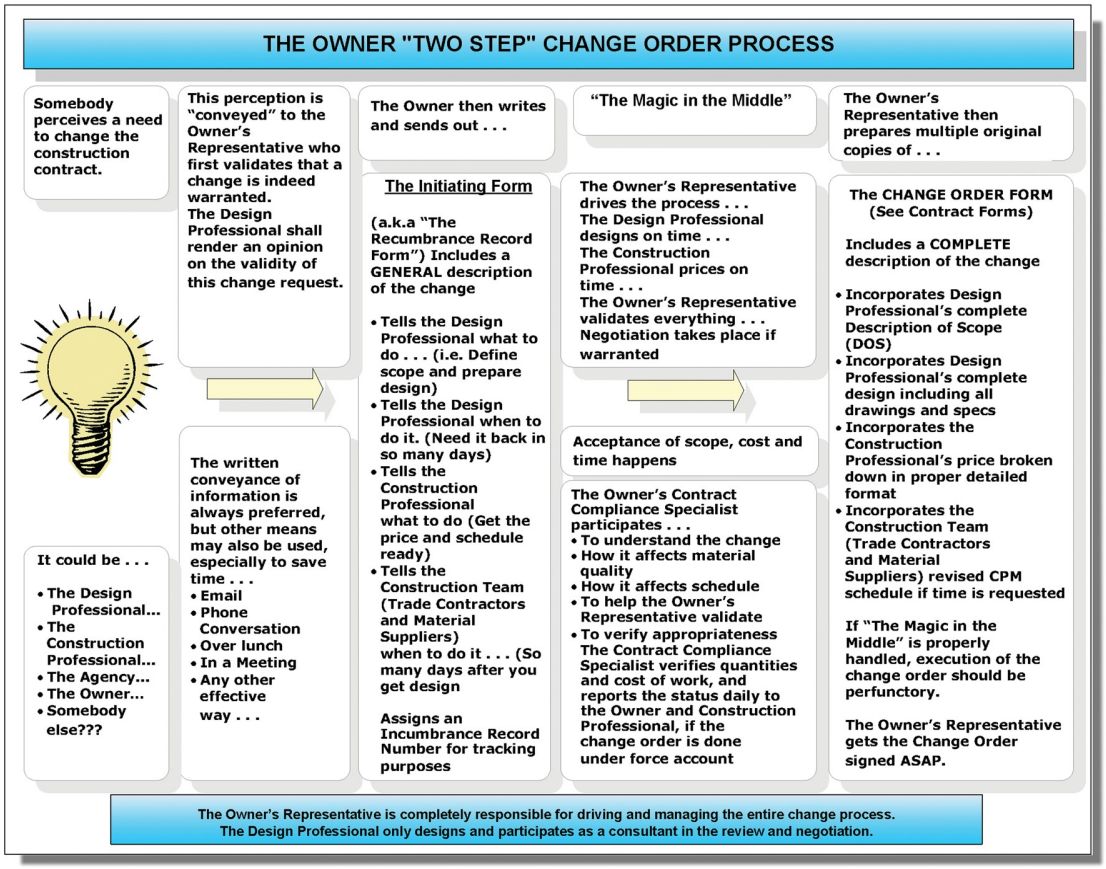


Figure 73: The "Two-Step" Design-Build Change Order Process

Note that the Executive Administrator may be due additional compensation on excessive change orders that increase the scope of work for the project or for the Design Professional's oversight.

A6. Project Completion

Current Contract Documents define two levels of project completion: *Material Completion* followed by *Final Completion*. See *SCM Chapter 3.8: Contract Closeout* for contract closeout procedures, guidelines, and checklists.

A7. Additional Services

In addition to those services described under Basic Design Services and Basic Contract Administration Services, the Executive Administrator and its consultants may be commissioned to provide certain additional Construction Contract Administration Services when the Design-Builder is late delivering the work, or for excessive changes caused by the Design-Builder's team. Refer to the specific contractual requirements for authorizing any additional services.

B. DESIGN PROFESSIONAL SERVICES DURING CONSTRUCTION

The Design Professional is under contract to the Design-Builder and shall be responsible to the Design-Builder to provide the services. This listing is not meant to be an all-encompassing list of services but rather the traditional services the Owner relies on its Design Professional to provide.

The Design Professional is professionally obligated to the Owner/Agency and the public for public safety and adherence to the project program requirements.

B1. Monitoring Design-Builder's Performance

The Design Professional's responsibility shall be to approve, accept, consent to the covering of, and to certify work that meets the design intent and meets all applicable code requirements and program requirements. This responsibility shall be performed for the Owner/Agency.

B2. Responding to the Design-Builder

The Design Professional shall respond to a request for information (RFI) from the trade contractors, Executive Administrator, or the Owner/Agency within five business days, and to an issue, clarification, or complaint information within ten business days from receipt of written notification. The Design Professional should provide or recommend a standard RFI form with basic information for the submittal and response to all RFIs. The Design-Builder should number RFI's sequentially in a chronological order. The Design Professional and Design-Builder should keep separate RFI Logs.

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B3. Evaluation of the Work

The Design Professional shall visit the site during critical phases of construction and have access to all work in progress. The Design Professional shall report deviations from the Contract Documents to the Design-Builder with copies to the Executive Administrator and, if warranted, have authority to issue a Stop Work Order for such non-compliant work.

The Design Professional Contract with the Design-Builder shall not limit the number of site visits that will be necessary for each design discipline to provide adequate field services.

B4. Submittals

The Design-Builder shall prepare a submittal schedule, which is coordinated with the Overall Project Schedule, in accordance with the Pre-Construction Phase activities in Section Two, Part Three of the Design-Build Construction Contract and be reviewed by the Executive Administrator within fourteen calendar days of receipt. After approval, all subsequent submittals (shop drawings and similar submittals) shall also be reviewed within fourteen calendar days provided they are submitted in accordance with the submittal schedule. The submittal schedule should be coordinated with the construction schedule so that adequate time is allowed for submittal review. The submittal schedule should allow

additional time for complicated, large submittals such as structural steel or concrete, window systems, and MEP systems. It may be necessary for the Design-Builder to send submittals requiring the Design Professional's consultant review directly to the consultant with a copy of the transmittal to the Design Professional in order to expedite the turn-around time; however, the Design Professional is still responsible for reviewing and coordinating the information contained in the expedited submittal.

The Executive Administrator and Owner/Agency are dependent on the contract drawings, and the Design Professional and consultants shall not redesign, add, or change scope on shop drawings without first requesting a change and obtaining an approval by the Owner/Agency through the Executive Administrator. Upon acceptance, the Executive Administrator shall issue a change order to the Contract Documents when applicable.

A critical part of submittal review and Project Closeout is the submission and review of the O & M Manuals. If requested, the Design Professional shall include the Executive Administrator and the Owner/Agency in the review of major system (MEP) submittals and the initial O & M Manual submittal. This would be done as a courtesy in an effort to make this documentation available to the Owner/Agency at the earliest time possible. The Design-Builder shall submit the O & M Manuals to the Executive Administrator for review and approval prior to any required Owner Training Sessions. Note that the Owner Training Sessions and review and approval of the O & M Manuals must be completed prior to Material Completion.

C. DESIGN-BUILDER CONSTRUCTION SERVICES

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After successfully completing the Pre-Construction activities and within ten days from receipt of the Proceed Order from the Owner/Agency, the Design-Builder shall commence the work in accordance with the Construction Management Plan, Overall Project Schedule, Quality Control Program, Safety Program, and similar guidelines that were developed and approved during the Pre-Construction activities.

The Design-Builder requirements and processes are noted below outlining the process and the parties responsible for the activities.

C1. Pre-Construction Meeting

A Pre-Construction meeting should be held directly before or immediately after an order to proceed is issued from the Owner/Agency. The Design-Builder may elect to host the Pre-Construction meeting to present the current Construction Management Plan and Overall Project Schedule and to confirm agreement on the coordination procedures and processes for prosecuting the work.

C2. Construction Means & Methods

The Design-Builder shall have control of all means and methods and all labor, materials, and services necessary to produce the construction of the project in accordance with the Contract Documents, including the entire construction of the various separately identifiable parts thereof. Work includes, and is the result of, performing or providing all labor, services, and documentation necessary to produce such construction; in addition, work includes, and is the result of, furnishing, installing and incorporating all equipment, fixtures, and supplies into the construction, all as required by the Contract Documents.

C3. Construction Progress Meetings

In addition to the Design-Builder's project management activities for efficient and orderly management of the project, the Design-Builder shall schedule and host bi-weekly Construction Progress Meetings at the site with the Owner/Agency, Executive Administrator, and the Design-Builder's Design Professional(s) representatives. This meeting serves to communicate project progress, and to discuss and resolve, or develop a plan to resolve, outstanding questions or issues affecting the timely completion of the work. The Design-Builder shall issue minutes of the meeting, indicating decisions made and plans of action that include the identification of the party responsible and a date for resolution of the outstanding issue(s).

C4. Changes to the Work

Changes in the work may occur either as a result of a change requested by the Executive Administrator or by a change to the work due to the discovery of some unforeseen existing physical condition not contemplated in the Contract Documents.

(a) Owner's Right to Make Changes

Without invalidating the contract, the Owner/Agency through its Executive Administrator may authorize or order extra work or changes by altering, adding to, or deducting from the work or the contract time. Changes in the work can only be authorized by an executed change order.

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(b) Unforeseen Circumstances

By executing the Construction Contract, the Design-Builder acknowledges a visit to the project site, having taken into consideration all open and apparent conditions that might affect the work. No claims for changes based on lack of knowledge of existing conditions are allowed unless the existing physical conditions cannot be discovered by a reasonably observant person.

Changes to the work relating to site conditions that were not open and apparent and are materially different from the documents provided by the Owner/Agency may be adjusted by change order.

(c) No Change without Owner Approval

Neither the Design Professional nor the Design-Builder can make any change in work without an approved change order. Without a change order, the Design-Builder shall have no claim for payment for cost, fee, or revision to the completion schedule based upon or resulting from changes to the work. This requirement does not apply where changes in the work are required due to emergency situations when the Design-Builder takes reasonable precautions to protect the safety of persons, property, work, or of adjoining property.

(d) Change Order Forms

The change order is the written instrument by which adjustments in the contract sum and contract time are legally modified. The change order shall be in the format as shown in Section I: Specimen Change Order in the Design-Build Construction Contract, and submitted to the Executive Administrator.

The change order must be accompanied by a breakdown of the quantities, prices, and expenditures for labor and materials used in computing the proposed change in the contract scope. The Design-Builder's breakdown must have a separate line item for each trade contractor's proposed cost on the letterhead of the Design-Builder and properly signed by an authorized representative of the trade contractor.

The breakdown shall include the following oath:

I do solemnly swear to the best of my knowledge, information, and belief, that the costs shown hereinabove do not exceed current costs for like services or materials in the locality of the project, and, in the case of a force account, the costs represented do not exceed the actual costs to the Design-Builder and that the quantities shown do not exceed actual requirements.

The Change Order process is further defined in Section Three, Part Four of the Design-Build Construction Contract in which the following methods of compensation are defined:

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1. Lump Sum
2. Unit Price
3. Force Account

(e) Change Order Process

As described in Section Three, Part Two of the Design-Build Construction Contract, the Owner/ Agency, through the Executive Administrator, may issue a Change Order Request or directive in writing to the Design-Builder. The Design-Builder shall respond to the Executive Administrator in writing within fourteen days of receipt of the request or directive. The Design-Builder's written response shall contain proposed modifications, with appropriate breakdown and backup, in the contract time and contract sum. The Owner/Agency and Executive Administrator shall review the Design-Builder's Change Order Proposal and respond to the Design-Builder within fourteen days of receipt of the Design-Builder's Change Order Proposal. If the Design-Builder's Change Order Proposal is acceptable, the Design-Builder shall prepare and execute a change order, to be certified by the Executive Administrator, and executed by the Owner/Agency.

(f) Disagreement between Executive Administrator and Design-Builder

Should the Executive Administrator and the Design-Builder disagree on the amount of the adjustment of the contract sum and contract time, and such disagreement is not resolved between them in seven days, the Owner/Agency, desiring the change order work to proceed, may make direct the following actions:

1 . As to Contract Sum

Advise the Design-Builder to proceed under a change order for force account of indeterminate amounts.

2.. As to Contract Time

Advise the Design-Builder to proceed on the basis that the Executive Administrator's assessment of the adjustment in the contract time is final and shall be the basis for the change order.

3. Other Disagreements

Should the Executive Administrator disagree with the Design-Builder as to matters other than contract sum or contract time, the dispute shall be reviewed by the Owner/Agency as set forth in Section 5, Part 2 of the Design-Build Construction Contract.

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(g) Costs Associated with the Change Order

The allowed cost for an approved change order is defined in Section Three, Part Four of the Design-Build Construction Contract. Stipulating that nothing here overrides that agreement, acceptable costs may include cost of payroll, overtime premiums, and fringe benefits for employees directly employed in the change of the work and all materials and equipment incorporated into the work and the equipment used in accomplishing the work. If the equipment used in accomplishing the work is rented expressly for accomplishing the change in the work, the allowable cost shall be the actual rental rate according to the time of rental agreement.

Allowable cost for rental equipment shall be limited to the rates submitted and approved during the Pre-Construction Phase and as described in Section Two, Part Two of the Design-Build Construction Contract. Other allowable costs include the following:

1. Cost increase in premiums for the Design-Builder's payment and performance bonds
2. Applicable rates and consumer taxes
3. Any other costs directly attributable to the change in work and approved by the Owner/ Agency, such as Design Professional's cost and testing

Costs that are specifically *not allowed* for changes in the work include the following:

1. Cost due to negligence of the Design-Builder, trade contractor, suppliers, or other person for whom the Design-Builder is responsible

2. Home office expenses for payroll costs for the Design-Builder's, trade contractor's, or supplier's officers, executives, administrators, accountants, counsel, engineers, timekeepers, estimators, clerks, and other similar administrative personnel that are not directly included in the change in the work, but are only providing general administration of the work

3. Home office and branch office expenses of the Design-Builder's, trade contractor's, or supplier's home and branch offices, capital expenses, interest on capital used for the work and other general overhead expenses of the home office and branch office

4. Wages and benefits of a foreman, if the foreman is concurrently supervising other work at the project site

5. Premiums for bonds required of trade contractor by the Design-Builder

6. Cost due to omissions by the Design-Builder's Design Professionals or necessary costs caused by the coordination of the Documents

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(h) Subsurface Conditions

Section Three, Part Four of the Design-Build Construction Contract outlines the contract procedures for subsurface conditions and defines the process for qualifying for and receiving compensation for rock where applicable.

C5. Changes in Contract Time

All change orders must state that the contract time and the Material Completion and Occupancy Date either are not changed or are increased or decreased by a specific number of days. The Design-Builder must provide written justification for the extension to the Executive Administrator and to the Owner/Agency. The written justification must clearly demonstrate how weather or the actions of the Owner/Agency have impacted the work of the Design-Builder. The request must also clearly demonstrate the anticipated actual increase in the time required to complete the work beyond that allowed by the contract as adjusted by prior change orders to the contract.

No extension to the contract time shall be allowed by the contract as adjusted by prior change orders to the contract. No extension to the contract time shall be allowed unless the additional or changed work increases the length of the critical path beyond the Material Completion and Occupancy Date.

If approved, the increase in time required to complete the work shall be added to the contract time. The Owner may decrease, by change order, the contract time when an Owner-requested deletion from the work results in a decrease in the actual time required completing the work as demonstrable on the Critical Path Method Schedule.

C6. Overhead and Profit

The percentage for overhead and profit to be used in calculating additive changes in the work (not including changes covered by unit prices) shall not exceed contractual limits. Said percentages for overhead and profit shall be applied only on the net cost of the changed work (i.e., the difference in cost between original and revised work).

D. TIME

The Design-Builder represents to the Executive Administrator and the Owner/Agency that the Design-Builder is experienced in managing construction in accordance with contract requirements and in a timely manner within the stipulated contract time.

Time is of the essence of the contract and all scheduled completion times are contractual obligations that when not met may be a cause for a claim of breach of contract.

(a) Commencement, Prosecution, and Completion

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The Design-Builder is required to (1) commence work under this contract no later than ten calendar days from the date specified in the in the Proceed Order from the Owner/Agency, (2) prosecute the work with faithfulness and energy, (3) to install the various parts of the work with equal steps shown on the Overall Project Schedule and at the same rate (or better) as shown on the Overall Project Schedule, and (4) to complete the work within the contract time.

In the event the Design-Builder shall be delinquent regarding achieving milestone duties established in the Overall Project Schedule, the Design-Builder, within seven days of receipt of a written document of the Executive Administrator, shall cause its employees, trade contractors, and suppliers to perform work at an accelerated pace necessary to promptly bring the work into compliance with the Overall Project Schedule. The Design-Builder can have no claim against the Owner/ Agency for the cost for accelerating the work to bring the work into compliance with the approved Overall Project Schedule.

(b) Overall Project Schedule (Construction Progress Schedule)

During the Pre-Construction Phase of the work (See *SCM Subchapter 3.7.2: Pre-Construction* and Section Three, Part Five of the Design-Build Construction Contract.), the Design-Builder must submit a Construction Progress Schedule, showing the duties of commencement and the completion of the work required by the Contract Documents, for review by the Executive Administrator and approval by the Owner/Agency.

Upon recommendation by the Executive Administrator and approval by the Owner/Agency, the Construction Progress Schedule shall become the Overall Project Schedule, and becomes a part of the Construction Contract.

(c) Monthly Schedule Updates

The Design-Builder must submit the monthly pay request with an Overall Project Schedule update to the Executive Administrator to show completed activities and any changes in sequencing, activities durations, and completion of milestone dates. Failure by the Design-Builder to maintain a rate of progress consistent with the milestone dates in the Overall Project Schedule may be grounds to withhold, in whole or in part, any request for payment as may be necessary to protect the Owner/Agency from loss due to failure of the Design-Builder to prosecute the work in accordance with the Overall Project Schedule.

(d) Damages for Delay, Extensions of Time

As a general rule, the Design-Builder is not entitled to any damages for delay or to any other reimbursement as a cost of the work, or to an increase in the contract sum for direct, indirect, impact, or disruption damages arising because of delay or other hindrance of any kind whatsoever. Extensions of the contract time shall be the Design-Builder's sole remedy for delays that are not the fault of the Design-Builder and are included in the following sections.

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1. Force Majeure

If, between the Proceed Order and the Material Completion and Occupancy Date, as amended, the Design-Builder is unable to perform or is delayed in the performance of any of the terms and provisions of the contract as a result of (1) governmental preemption of materials in connection with a national emergency declared by the President of the United States; (2) riot, insurrection, acts of terror or terrorism or other civil disorder affecting performance of the work; or (3) earthquakes, or unusual and extreme weather conditions constituting Acts of God, then, and in any such event, such inability or delay shall be excused, and the time for completing the affected portions of the project (and the entire project, if applicable) shall be extended for such reasonable period of time as the delay has affected the performance of the work.

The Design-Builder shall take all reasonable actions to minimize the delay caused by any of the above factors, and shall notify the Executive Administrator in writing with a copy to the Owner/Agency of any event allowing for excuse or delay not later than seven days after the Design-Builder first becomes aware of the event, or should have become aware of the event; otherwise the Design-Builder will be deemed to have waived the excuse or delay.

2. Abnormal Weather

Extensions of time will be granted for abnormal inclement conditions that delay the critical path of the progress of the work. Abnormal weather delay is defined as days lost to weather conditions either (1) in excess of days specified in the Supplementary General Conditions, or (2) if not defined in the Supplementary General Conditions, as days in excess of a local historic average prevailing at the site recorded by the National Oceanic and Atmospheric Administration (NOAA) for the 120 months immediately preceding the date specified in the Proceed Order.

Not later than ten days after the first occurrence of the event giving rise to the claim or with respect to claims for extensions of time as a result of abnormal weather, and not later than ten days after the end of each calendar month thereafter, the Design-Builder shall file a claim with the Executive Administrator with a copy to the Owner/Agency. By not later than fifteen days from the receipt of the claim, the Executive Administrator shall render a decision concerning the allowance of an extension of time and shall report the decision to both the Design-Builder and the Owner/Agency. If additional time is allowed, the Executive Administrator will prepare a change order increasing the contract time for execution by both the Design-Builder and Owner/Agency.

(e) Exceptions to General Rule: Compensation for Delay

The Design-Builder may be entitled to an extension of time or and adjustment to the contract sum for the following delays caused by hindrances or delays of the Owner/Agency, Executive Administrator, or separate Design-Builder.

MFC

1. The Design-Builder may be entitled to an extension of time or an adjustment to the contract sum if the Design-Builder is delayed in the progress of the work between the Proceed Order and the Material Completion and Occupancy Date, as amended, by an act or neglect of the Owner, Owner's employees, Executive Administrator or separate contractor employed by the Owner.

2. Any claim by Design-Builder for a change in the Material Completion and Occupancy Date due to delay of responses to submittals may be made during the time while the failure of the Executive Administrator to act or perform continues, or within seven days after such failure to act or perform has been cured. If no submittal schedule or agreement as described in *SCM Subchapter 3.7.1: Pre-Construction* and as required in Section Two, Part Three of the Design-Build Construction Contract is agreed upon, then a claim for delay will be allowed only after the Executive Administrator has been allowed fourteen days to take action.

3. In the event of delay as described in the two previous paragraphs, the contract time may be extended by change order for such reasonable time as the Executive Administrator and the Owner/Agency may determine; providing, however, that (1) such delays extend the Overall Project Schedule's critical path; (2) the Design-Builder has taken all reasonable actions to mitigate the effects of the delays on the work; (3) the fault or negligence of the Design-Builder, the Design-Builder's agents or employees did not materially contribute to such causes; and (4) the Design-Builder shall have notified Owner/ Agency of the cause or causes of such delay within fourteen days from the date on which the Design-Builder first becomes aware of such delay.

(f) Owner-Requested Changes

If the Owner requests changes in the Contract Documents that would materially affect the completion of the work by lengthening the critical path of the Overall Project Schedule, the Executive Administrator shall determine the appropriate number of days and thereby extend by change order the Material Completion and Occupancy Date.

(g) Other Change Orders (not the fault of the Design-Builder)

For change orders involving the following situations that would materially affect the completion of the work by lengthening the critical path of the Construction Progress Schedule, the Executive Administrator shall determine the appropriate number of days and thereby extend the Material Completion and Occupancy Date.

1. Changes due to subsurface or other unforeseen conditions (Reference Section Three, Part Four of the Design-Build Construction Contract.)

2. Changes for compensable rock (Reference Section Three, Part Four of the Design-Build Construction Contract.)

3. Changes deleting work (Reference Section Three, Part Four of the Design-Build Construction Contract.)

(h) Submission of Claims for Compensation for Delay and Extension of Time

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1. Time for Submission

Except as specified in the following paragraph, any claim by Design-Builder for a change in the contract sum or the Material Completion and Occupancy Date shall be made within fourteen days of the day on which the Design-Builder become aware of the event on which the claim is based or, if the Contract Documents specify a shorter or longer period with respect to such event, within the period specified by the Contract Documents.

2. Delay Claim Must Be In Writing

Any claim to extend the contract sum or Material Completion and Occupancy Date must be in writing, must set forth in detail the basis for the claim and the number of days of delay claimed, must be correlated with the approved Overall Project Schedule, must be executed by the Design-Builder and delivered to the Executive Administrator and the Owner/Agency, and must be reviewed and an appropriate time assessed by the Design Professional.

3. When Delay Claim Deemed Waived

Any claim to extend the contract sum or Material Completion and Occupancy Date not made in writing to Owner within the above time period shall be deemed waived and shall not thereafter be valid. In the case of a continuing delay as a result of a single event, only one claim submission is necessary.

4. Executive Administrator to Decide

The contract sum or the Material Completion and Occupancy Date may be extended for such reasonable time as the Executive Administrator may decide, and the Overall Project Schedule shall then be updated.

(I) Recovery Schedules

1. Recovery of Schedule Delays

If the Executive Administrator determines that the project is one week or more behind schedule according to the approved Overall Project Schedule, the Executive Administrator shall so notify the Design-Builder in writing. Within seven days of the date of the Design Professional's notice, the Design-Builder shall deliver a written plan to the Executive Administrator and Owner/Agency explaining how the Design-Builder intends to bring the project back on schedule.

The Design-Builder's plan must provide sufficient detail to allow the Executive Administrator and Owner/Agency to determine the proposal's feasibility.

2. Recovery of Schedule Delays During Last Sixty Days of Contract Time

At any time during the last sixty days of the contract time that the Executive Administrator finds that the Design-Builder is behind schedule according to the contract time, as amended, the Executive Administrator shall notify the Design-Builder in writing.

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Within seven days of the date of the Executive Administrator's notice, the Design-Builder shall prepare and deliver a written plan to the Executive Administrator and Owner/Agency explaining how the Design-Builder intends to bring the project back on schedule.

The Design-Builder's plan must provide sufficient detail to allow the Executive Administrator and Owner/Agency to determine the proposal's feasibility.

E. CORRECTING THE WORK; INSPECTIONS; COVERING AND UNCOVER- ING THE WORK

E1. Access to the Work

The Design-Builder's Design Professional, Executive Administrator, Owner/Agency and their representatives shall have access at all times to the work wherever it is in preparation or progress, and the Design-Builder shall provide progress facilities for such access and for inspection.

E2. Notice of Non-Compliant Work

A Notice of Non-Complainant Work may be issued by either the Executive Administrator or the Design-Builder's Design Professional. The Notice of Non-Compliant Work shall be in writing, shall be dated, and shall be signed by the issuing party, and addressed to the Design-Builder with a copy to the Executive Administrator and Owner/Agency and shall include three elements as follows:

(a) Description of the Non-Compliant Work

1. Work that has been omitted

2. Work that is unexecuted as of the date of the Notice of Non-Complaint Work, the time for its incorporation into the work as planned in the Overall Project Schedule having expired

3. Work that has not been executed in accordance with the methods and materials designated in the Contract Documents

(b) Contract References

Cite the provision or provisions of the Contract Documents that specify the work to be executed.

(c) Time for Compliance

Fix a reasonable space of time within which the Design-Builder shall have made good the deficiency.

E3. Correcting the Work

(a) Removal and Making Good of Non-Compliant Work

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The Design-Builder shall remove from the site, within the space of time designated in Notice of Non-Compliant Work, all work determined by the Design-Builder's Design Professional or the Executive Administrator as failing to conform to the contract, whether incorporated in the work or not, and the Design-Builder shall promptly replace and re-execute the work in accordance with
the contract, without expense to the Owner, and shall bear the expense of making good all work of other Design-Builders destroyed by such removal or replacement. The Design-Builder shall supply any omitted work and perform all unexecuted work within the space of time fixed by the Notices of Non-Compliant Work.

(b) Remedy of the Owner for Breach of Notice of Non-Compliant Work

1. Failure to Make Good a Deficiency

If the Design-Builder does not make good a deficiency within a reasonable space of time fixed in a Notice of Non-Complaint Work, the Owner/Agency after three days written notice to the Design-Builder may do any of the following:

a. Remove the non-compliant work and store it at the expense of the Design-Builder. If the Design-Builder does not pay the expenses of such removal and storing within ten days after receipt of written demand of the Owner, the Owner may, upon three days notice in writing to the Design-Builder, sell such materials at private sale or at auction and shall account for the net proceeds thereof after deducting all proper costs incurred by the Owner/Agency.

b. Supply omitted work, perform unexecuted work, or replace and re-execute work not done in accordance with the methods and materials designated in the Contract Documents, and deduct the cost thereof from any payment then or thereafter due the Design-Builder.

2. Notice of Correction from the Design-Builder

The Design-Builder shall give prompt notice in writing to the Executive Administrator, with copy to the Owner/Agency, upon completion of the correction of the non-compliant work. In the absence of such notice, it shall be and is presumed under this contract that there has been no correction supplying remedy, or performance of unexecuted work.

E4. Inspections

The Executive Administrator and the Design-Builder's Design Professional and its consultants shall have access to the project site to observe the work and consent to its being covered.

(a) Notice of Readiness for Inspection to Design-Builder's Design Professional and Executive Administrator from Design-Builder Prior to Covering Work

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As required by the Contract Documents, if the Design Professional's instructions (either in the specifications or issued later in writing), laws, ordinances or any public authority require any work to be specially tested or approved, the Design-Builder shall give its Design Professional timely notice in writing with a copy to the Executive Administrator of its readiness for inspection.

If the inspection is by any authority other than the Design-Builder's Design Professional, the Design-Builder shall give timely notice of the date fixed for such inspection. Inspections by the Executive Administrator or the Design-Builder's Design Professional shall be made promptly and, where practicable, at the source of supply.

(b) Fire Marshal Inspections

The State Fire Marshal may make inspections at any time. It shall be the responsibility of the Design-Builder to request an inspection at 80 percent completion and at 100 percent completion and to give notice when all items on the 100 Percent Inspection Report have been completed. Requests shall be in writing with a copy to the Design-Builder's Design Professional, the Owner/Agency and the Executive Administrator.

(c) False Start

In the event the Design-Builder shall have issued notice of readiness prematurely, its action shall be deemed to be a *false start*. The Design-Builder shall be liable for the damage resulting from the aforesaid false start, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced by the aforesaid false start.

(d) Certificate of Occupancy

The Design-Builder's obligation under the contract is to install the work in accordance with the Contract Documents, obtain the Certificate of Occupancy from the State Fire Marshal or its deputy, and forward it to its Design Professional with a copy to the Executive Administrator as a part of the final closeout procedures. The Design-Builder's Design Professional's obligation is to design the work to comply with the applicable codes and to qualify for a Certificate of Occupancy.

E5. Covering and Uncovering Work

(a) Re-examination or Re-testing of Work Covered Pursuant to Consent of Design Professional

Re-examination or re-testing of questioned work previously covered pursuant to consent of the Executive Administrator. If so ordered, the work must be uncovered by the Design-Builder. The Owner/Agency shall pay the cost of re-examination and replacement or of re-testing if such work is found in accordance with the Contract Documents. The Design-Builder shall pay such cost if such work is found not in accordance with the Contract Documents, unless the Design-Builder can show that a separate contractor caused the defect in the work. In that event, the Owner/Agency shall pay such cost.

E6. Compensation

The Owner/Agency will make periodical progress payments to the Design-Builder for all work that has been performed and materials and equipment that have been supplied in full accordance with the terms and conditions of the Contract Documents.

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(a) Application For Payment

The Design-Builder shall periodically (usually monthly) submit an Application for Payment or the form provided as Exhibit K of the Design-Build Construction Contract to the Executive Administrator.

Application for payment shall be broken down by CSI Category and for the final certification of cost by CSI description and Capital Asset Category. See Exhibits K & L, in the Design-Build Construction Contract.

Prior to the first Application for Payment, the Design-Builder shall submit to the Application for Payment a schedule of values of the various parts of the work including quantities and aggregating the total sum of the contract, divided in the same manner as set forth in the Application For Payment Form in Exhibit K of the Design-Build Construction Contract, showing the Design-Builder's right to payment claimed, arranged, and itemized to meet the approval of the schedule of values and supported by such documentation as to its correctness.

The Application for Payment shall attach backup material including, but not limited to, receipts or other vouchers showing the Design-Builder's payments for material and labor, including payments previously made to trade contractors. The Application for Payment shall be supported by lien waivers from the Design-Builder, Design Professional, design consultants, and trade contractors.

(b) Material Stored on Site

If the Application for Payment includes materials that have been delivered and suitably stored at the site (i.e., protected from weather, theft, damage from construction activities, and similar storage as required by the Contract Documents), but not yet incorporated into the work; the Application for Payment may include a request for payment for these materials. Approval for payment for stored materials will be conditional upon submission with the Design-Builder's Application for Payment, bills of sale, or such other procedure or document as will establish the Owner/Agency's title to such material and otherwise adequately protect the Owner/Agency's interest in the stored material. The Design-Builder remains responsible for the existence, security, protection, and if necessary, replacement of the material until execution of the Design Professional Certificate of Final Completion by the schedule of values.

(c) Material Stored Off-Site

As a general policy, the Owner/Agency will not pay for materials stored off-site. There have been exceptions to this rule where the project site may be small and congested and unsuitable to store materials or where off-site storage may better protect and secure the materials. Approval for payment of material off-site requires the approval of the owner.

(d) Retainage

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To account for possible unforeseen deficiencies and lack of performance of installed materials and equipment, retainage will be withheld from each periodic payment to the Design-Builder per contractual amounts for the sum of the total amount earned for work-in-place under the original contract, total amount earned for work-in place for change orders, and value of material stored at the site.

After half of the contract sum, including change orders, becomes due, the Design-Builder may request and upon approval of the schedule of values, the sum being held as retainage will be converted to a lump sum and held by the Owner until the Design Professional issues a Certificate of Material Completion. No further retainage will be withheld.

The conversion of previously withheld retainage to a lump sum and elimination of retainage or future payments can occur if the following conditions are met:

1. The project is on or ahead of the Overall Project Schedule.
2. There are no breaches of Notices of Non-complaint Work.
3. There is no delinquency in the completion of work and filing, and of the final breakdown and accounting pursuant to any change orders utilizing force account.

The Owner/Agency may reinstate the retainage on any subsequent applications for payment due to be paid if one or more of the following events occur:

1. The percentage of work completed falls behind the percentage required by the Overall Project Schedule by as much as 5 percent.

2. The Design-Builder breaks a Notice of Non-Compliant Work.

3. The Design-Builder becomes delinquent filing the final breakdown and accounting payment to any change order utilizing force account.

4. The Design-Builder commits any breach of the contract.

The Design-Builder should be given written notice by the schedule of values of the reinstatement of the retainage on the Application for Payment.

The Owner/Agency, upon the Executive Administrator's recommendation, may reconvert the retainage to a lump sum if the following conditions are satisfied:

1. The Design-Builder recovers all lost time and gets the work back on the Overall Project Schedule.

2. The Design-Builder remedies all breaches of Notice of Non-Compliant Work.

3. The Design-Builder supplies a proper breakdown and accounting pursuant to any change order utilizing a force account.

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All retainage sums withheld while either or all of the events existed may be again converted to a lump sum to be held until the Design Professional issues the Certificate of Material Completion.

(e) Trade Contractor Retainage Release

Upon the request of the Design-Builder and at the Owner/Agency's discretion, an amount equal to the retainage on the value of a trade contractor contract amount (or the prorated amount equal to the Design-Builder's retainage) may be separately released from the Design-Builder's retainage held by the Owner/Agency as the trade contractor completes its work.

The Design-Builder must file an *Application for Release of a Trade Contractors Retainage*. The Application for Release of Trade Contractor's Retainage shall contain a release of all claims and release of all liens by the trade contractor and shall bear the original certificates of the trade contractor, Design-Builder, and the Executive Administrator that the trade contractor's work has been fully performed and that the sum for which payment is requested is due by the Design-Builder to the trade contractor. Checks releasing a trade contractor's retainage shall be made payable to the Design-Builder, the Design-Builder's surety, and the trade contractor and shall be mailed to the Design-Builder's surety.

The Owner/Agency's willingness to release the retainage of a trade contractor that has completed work does not create any contracted relationship between the Owner/Agency and the trade contractor and does not create any duty of the Owner/Agency to pay any trade contractor.

(f) Processing the Application for Payment

Upon receipt of the Application for Payment from the Design-Builder, the Executive Administrator will review the Application for Payment prepared and executed by the Design-Builder. If the Executive Administrator concurs, the Executive Administrator shall execute a certificate on the face of the Application for Payment as to its accuracy.

The Design-Builder's Design Professional shall visit the project site after the Design-Builder and the Executive Administrator have agreed and forwarded the Application for Payment.

If the Design-Builder and Executive Administrator cannot agree on the appropriateness of the Application for Payment, the Executive Administrator shall make a decision. Upon determining the appropriateness of the Application for Payment and making such adjustments as necessary, the Executive Administrator shall execute the certificate on the Application for Payment and forward it to the Owner/Agency for payment. If any sums are withheld, the Executive Administrator will state in writing the reason for withholding any sums in the certificate. The Owner/Agency shall make payment within ten days after receipt of the certification of the Application for Payment by the Executive Administrator.

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(g) Effect of Executive Administrator's Certificate on an Application for Payment

No certificate issued by the Executive Administrator nor payment made to the Design-Builder by the Owner/Agency, or partial or entire use or occupancy of the work by the Owner/Agency shall be an acceptance of any work or material not in accordance with the Contract Documents.

(h) Payment due Dates and Interest

Should the Owner/Agency fail to pay a proper invoice within thirty calendar days of receipt, the Design-Builder shall notify the Owner/Agency in writing by certified or statutory mail. If the Owner/Agency fails to pay within five business days of receipt of the notice, the Design-Builder may receive; in addition the sum named in the proper invoice, interest on the unpaid balances as may be due.

1. Payments for Change Order Work

Payments will not be made for any changes in the work until a change order has been executed.

2. Payments Withheld or Nullified

The Executive Administrator or the Owner/Agency may withhold or, on account of subsequently discovered evidence, nullify in whole or in part any certificate of Application for Payment to such extent as may be necessary to protect the Owner from loss because of the following conditions:

- Defective work not remedied
- Claims or liens filed
- Failure of the Design-Builder to make payments properly to trade contractor for material or labor
- A reasonable doubt that the contract can be completed for the balance then unpaid
- Damage to a separate contractor, to the Owner, or a third party
- Failure to maintain a rate of progress consistent with the Overall Project Schedule
- Failure to supply enough skilled workers or proper materials
- Court-ordered retention
- State tax forms not on file

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- Breach of the contract
- When the conditions above are remedied, withheld payments may be made to the Design-Builder.

E7. Contract Adjustments, Disputes and Termination

(a) Dispute Resolution

It is very likely at some point during the construction of the project that the Design-Builder will make claims for additional costs or time. It is also very likely that the Executive Administrator and Owner/Agency will reject some of these claims and that the Design-Builder will protest that decision. The contract provides specific tools for dispute resolution; however, it specifically excludes the use of arbitration. Reference Section Five of the Design-Build Construction Contract. This section of the manual is intended to help the Owner/Agency find ways to resolve these claims. The following three methods are suggested for dispute resolution.

1. Negotiations

After the Executive Administrator has rejected a general claim, the Design-Builder is afforded thirty days to protest the decision by submitting a *Statement of claim.* According to the contract, all parties shall first endeavor to resolve the claims through discussions. The Executive Administrator should meet whereby the Design-Builder's project staff should present the merits of the claim, followed by the Executive Administrator's justification for rejection. The Executive Administrator shall attempt to be somewhat impartial and resolve the differences. It is advisable that the senior administrators not attend these meetings. Further, it is advisable that these meetings take place as soon as possible after the initial rejection (possibly at the time of the next scheduled progress meeting).

2. Dispute Resolution Board

Ideally, any partnering sessions (if applicable) established a *Dispute Resolution Board* consisting of senior designates or administrators from the Owner/Agency, Executive Administrator, and Design-Builder. If the project did not implement partnering, and/or no such resolution board exists, the team should consider the establishment of one. Often, this resolution board includes a neutral member to help facilitate the meetings. This member is typically from the industry, but is not closely associated with the Owner/Agency, Executive Administrator, or Design-Builder. This position can be a paid position (such as a mediator, attorney, or similar paid position) or strictly a volunteer.

MFC

In the event that the project staff cannot promptly resolve the dispute, they shall refer the dispute to the resolution board, who shall meet and attempt to resolve the claim. It is advisable that the project staff (that failed to resolve the dispute) not be permitted to attend this meeting. In this manner, the resolution board is more likely to objectively resolve the issues without being biased by possible emotions or degraded relationships of the project team. On larger or contentious projects, it might be advisable for this group to schedule monthly meetings to resolve any such disputes, and/or critical issues that occurred during the preceding month, even if no such claims exist. In this fashion, the dynamics are such that the project team often resolves issues prior to next scheduled meeting of the Dispute Resolution Board.

3. Mediation

If the Dispute Resolution Board is unable to resolve the claim, the parties can elect to submit the dispute to mediation. Mediation is a more formal process of resolving disputes involving one or more neutral mediators who facilitate the process. Unlike litigation, this process does not necessarily result in a decision as to which party was right or wrong. Mediation is more often a process of negotiations whereby the mediator(s) try to resolve the differences, often with both parties having to moderate their stance

Although mediation is not binding, it is a very effective way of resolving a dispute short of litigation. Litigation is always much more costly and time-consuming, and therefore mediation should always be encouraged prior to litigation.

(b)Termination

Caution: Termination is a serious action and should only be contemplated after thorough consultation with senior administrators, Attorneys, and any other agencies or consultants who might help weigh all other options, as well as help formulate a recovery plan. Termination is likely to cause a very significant cost and schedule impact to a project.

Termination is also likely to result in protracted litigation with the Design-Builder. The Owner/ Agency's right to terminate the contract for convenience or cause is addressed in Section Five, Part Three of the Design-Build Construction Contract. The following is provided for the purpose of explanation and does not supersede the contract.

The contract allows for three basic means of termination of the contract:

1. Termination for convenience by both the Owner and Design-Builder: *Termination for convenience* means that the Design-Builder did nothing wrong to give reason for the termination. It may simply be that the project is no longer feasible, and the Owner may elect to forego the construction.

2. Termination for cause by the Owner: *Termination For cause* means that the Design-Builder did something that gave the Owner reason to terminate the contract.

3. Termination by the Design-Builder for the event of non-payment or suspension of the project: The Design-Builder also has some specific rights to terminate the contract in the event of non-payment or suspension of the project.

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(c) Conditions of Termination

The following sections expand on the three conditions for termination by giving considerations and examples of each condition with scenarios that serve to highlight the issues and questions involved when the possibility of termination exists:

1. Condition One: Termination for Convenience

Considerations: After completing a significant portion of the design, or even after beginning construction, the Owner/Agency has the option to cancel the construction if the project is no longer feasible. Example scenarios along with corresponding considerations are given below:

Example One

The government no longer needs the project. This could be a result of major programmatic changes, new priorities, restructuring, elimination of departments or groups, or similar reasons. If the project were designed only, it is very easy to terminate contracts without any significant issues; however, as a more difficult example, the Owner/Agency would need a good post-termination or recovery plan if this decision were made at about the mid-point in construction.

The Owner/Agency should consider the cost of termination. Typically, the Owner/Agency would compensate the Design-Builder and its consultants and trade contractors for the value of all work to date, including stored materials and their costs associated with the termination.

Example Two

The project might be too expensive to build. Prior to commencement, it is possible that the Design-Builder's construction costs significantly exceed the available funds, therefore making the project no longer feasible. Under this scenario, the Owner/Agency would pay for the expended costs of design (or portion thereof), plus the Design-Builder's allowable expenses under the terms of the contract, providing the failure to meet the SCL is not the fault of the Design-Builder.

2. Condition Two: Termination for Cause

Considerations: Termination for cause results in the Design-Builder being fired because of a contractual default for which it did not cure. This action shall not be taken without serious consideration and consultation with the senior administrators, attorneys, Executive Administrator, and possibly other experts in the industry. Termination will most likely be protested by the Design-Builder and may result in a costly and time-consuming litigation. The cost and time to complete the unfinished project may increase.

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Outlined in the contract are specific examples of when the Owner/Agency has a right to terminate the contract. Additional scenarios along with corresponding considerations are provided below:

Example One

The work may be done correctly, but the Design-Builder is significantly behind schedule and has not properly staffed the project with a sufficient number of skilled employees. Despite repeated warnings to the Design-Builder's site staff, the Design-Builder has taken no action to correct the problem.

In this scenario, the Owner/Agency may be justified in terminating the contract. It is recommended that the Owner/Agency should first have conversations with the Design-Builder's senior administrators (home office) and the bonding company.

The Owner should consult with its attorneys to make certain that proper notifications have been made (including notifications of default). The Owner/Agency should also make certain that there were no excusable delays (caused by events or parties beyond the Design-Builder's control). Lastly, the Owner should evaluate whether or not the recovery plan (probably involving a replacement Design-Builder) will result in a delivery any sooner than the late completion anticipated by the Design-Builder.

Example Two

The Design-Builder has repeatedly failed to pay its trade contractors and other vendors. Further, the pace of the project is slowing down as fewer resources are committed to the effort. The Design-Builder may be having financial troubles and might go bankrupt. In this scenario, the Owner/Agency needs a quick clear picture of the Design-Builder's financial health before taking actions. This investigation should include contact with the Design-Builder's bonding company, establishing a plan of action to complete the project. The Owner/Agency should also investigate the payment history with the trade contractors and verify whether or not proper payments have been made. Assuming this investigation does indicate probable bankruptcy, the Owner should seek appropriate legal advice prior to a declaration of default.

3. Condition Three: Design-Builder's Right to Terminate

Considerations: The Design-Builder has two conditions that could give rise to a right to terminate the contract (Reference Section Five, Part Three of the Design-Build Construction Contract.)

Example One

Under specific conditions, the Design-Builder can terminate the contract after seven days written notice if work on the project is stopped for more than thirty days.

Example Two

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If the Owner/Agency fails to pay the Design-Builder when due, the Design-Builder can provide a thirty-day notice of intent to terminate the contract due to non-payment. If the Owner fails to pay the Design-Builder before the expiration of this period, the contract can be terminated.

SECTION THREE: PROJECT IMPLEMENTATION
SUBCHAPTER 3.8: CONTRACT CLOSEOUT

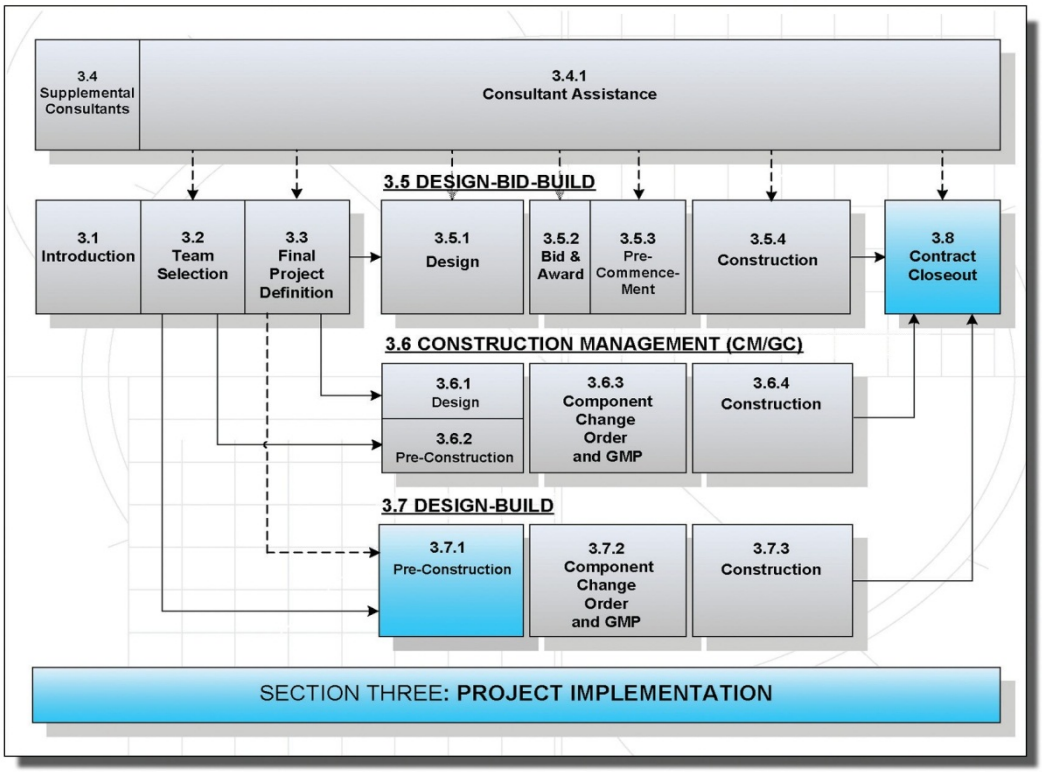


A. PROJECT COMPLETION

The Contract Closeout Phase describes the completion and acceptance of all construction work, training and familiarization of operating staff, occupancy by the Owner/Agency, and closeout of the construction contract agreements. Within this phase, there are three significant milestones described in construction contracts: (1) completion of the work such that the Owner may use the facility, (2) completion of any *punchlist* of items noted in a final inspection of the work, and (3) contract closeout and payment of all sums owed.

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Figure 74: The Project Implementation Flow Diagram Highlighting the Contract Closeout Chapter



In the construction contract agreements recommended for use in this State Construction Manual and available from the GSFIC Construction Division, these three milestones are referred to as: (1) Material Completion, (2) Interim Inspection for Punchlist Completion, and (3) Final Completion. The remainder of this section will reference these Construction Documents and terms; however, most other commonly used construction agreements follow this same format.

Material Completion is when the project is essentially complete and transferred to the Owner/ Agency for move-in and operations. Minor deficiencies noted on the final inspections that do not prevent occupancy are completed by the contractor within approximately thirty days and verified by the second milestone, Interim Inspection for Punchlist Completion. Final Completion is when all contract requirements are fulfilled, which includes completion of any first year maintenance agreements, deferred landscape plantings, seasonal HVAC test and balance, and other similar contractual obligations. Final Completion also requires payments of contract and subcontract obligations, resolution of all outstanding claims and change orders, correction of defects and other noncompliant contract issues. For most projects Final Completion generally occurs approximately one year after the date of Material Completion but this schedule should not affect occupancy or operation of the facility.

One important distinction to note with the construction contract agreements recommended for use in this State Construction Manual is the contracts use of the term “Material Completion” and not “Substantial Completion”. Substantial Completion is typically a defined term in a contract but can be generally described as the point at which the project is suitable for occupancy or use for its intended purpose. Similarly, Material Completion is when the work is complete in accordance with the Contract Documents. In addition the contract identifies specific prerequisites to achieving Material Completion, to be discussed in more detail below, such as completion of commissioning and all training, which may not be required by Substantial Completion.

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B. MATERIAL COMPLETION

Material Completion is the most important milestone in the Project Implementation Phase. The date of Material Completion is established in the Contract Documents and in the case of CM/GC and Design Build delivery methods, reconfirmed with execution of the GMP Change Order. It is a contractual requirement subject to liquidated damages or other contractual remedies and can be amended only by approved change orders.

To achieve Material Completion, the following conditions must be satisfied:

1. Completion of the Work in accordance with the Contract Documents.

2. Submission of a deficiency-free initial test and balance report, if applicable.

3. Submission of all O&M manuals to the Design Professional for review and approval.

4. Completion of all required O&M training for the Using Agency in the presence of the Owner and the Design Professional.

5. Completion of all building commissioning activities, if applicable.

6. Inspections and certifications by other regulatory agencies.

7. Certification that all building systems have been started up and tested to confirm operation in accordance with the Contract Documents.

8. Submission of all final documents and deliverables, such as bonds, affidavits, warranties, marked-up construction documents, keys and attic stock.

9. Inspection and certification by the Design Professional that the Project is materially complete.

The Design Professional's certification that the project is materially complete and the acceptance and occupancy of the Project by the Owner/Agency should be a time filled with pride and excitement. The project team is the champion in achieving this goal.

At Material Completion the following actions occur:

1. The Owner/Agency assumes control, security, and custody of the project, which includes the following events:
   - Transfer of utilities and payment of costs from date of Material Completion.
   - Acceptance of all keys and assumption of security/access control of project.
   - Acquisition of property and liability insurance.
   - Operation and Maintenance (including preventative maintenance) on all systems, equipment and facilities.

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2. The Construction Professional completes removal of all temporary construction facilities, fences, utilities, storage areas, locks and similar items (except that required for Punchlist completion).

3. The warranty period on the project and equipment begins.

4. The Construction Professional is eligible for payment of all work including previously held retainages. A new retainage is established for incomplete work.

5. All lawful and contractual certificates and permits for the Owner/Agency to operate and occupy the facility are obtained, which always include the Design Professional's Certificate of Material Completion and the Fire Marshal's Certificate of Occupancy.

The Construction Professional and members of the project team should begin planning for Material Completion as soon as the construction operations commence. Although obvious attention is directed towards getting the project started, a portion of the Pre-Construction Conference agenda and selected subsequent project meetings should be devoted to the requirements for Material Completion to ensure all parties are aware of and fulfilling their requirements for this important milestone. Material Completion begins with the Construction Professional issuing a Notice of Readiness for Inspection for Material Completion.

B1. Notice of Readiness for Inspection for Material Completion

When is a construction project completed to the extent a material inspection can occur and the Owner/ Agency can take possession and move into the facility? The GSFIC construction agreements stipulate that the Construction Professional shall finish all of the work and perform a self-inspection prior to the Design Professional's final inspection. If the Construction Professional is comfortable with the fact all work is finished except *Minor Items and Permitted Incomplete Work*, then the Construction Professional will prepare a list of these items, the Initial Punchlist, and submit it to the Design Professional along with a Notice of Readiness for Inspection for Material Completion**.**

Note: *Permitted incomplete work is work that is incomplete through no fault of the Construction Professional. It can include but not limited to, seasonal test and balance, seasonal landscaping or maintenance, first year maintenance agreements, and incomplete work due to failure of Separate Contractors to complete work.*

1. A *minor item* is a portion or element of the work that satisfies the following conditions:

   - The minor item can be totally complete within 30 days
   - The minor item can be completed while the Owner/Agency occupies the work without impeding or interfering with either the Owner/Agency's use and occupation of the work or the contractor's ability to complete the Minor Item.
   - The minor item will not interfere with the complete use and enjoyment of the project by the Owner/Agency.

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2. *Permitted incomplete work* is defined as work that is incomplete through no fault of the contractor, including, but not limited to, seasonal test and balance, seasonal landscaping, or failure of separate contractors to complete their work. First year maintenance agreements (elevator, escalator, landscape, HVAC chemical treatment, and similar agreements) are also included under this category.

When the Construction Professional issues the Notice of Readiness for Inspection for Material Completion, the Design Professional must schedule the requested inspection. The Owner/Agency's project manager should assist with this scheduling to facilitate the preparation and participation by the Owner/Agency's staff in the Material Completion process. It is critical to have the participation of the Owner/Agency staff at the Inspection for Material Completion so that all issues can be included in the Design Professional's Punchlist and retainage withheld from the Construction Professional.

If the Design Professional concludes from examination of the Construction Professional's Initial Punchlist submitted with the Notice of Readiness for Inspection for Material Completion that the work is not sufficiently complete (including all required "deliverables" and other non-construction Material Completion requirements such as training, documentation, warranties, and other requirements), then no inspection for Material Completion will be scheduled. The Construction Professional will be directed to complete the work as required and resubmit a new notice when ready. If there is concern about the Construction Professional's ability and willingness to complete work on schedule, the Owner/Agency's project manager and Design Professional should also confer regarding application of contract provisions for *Effect of Failure to Achieve Material Completion* and other remedies.

If the Design Professional concurs with the Initial Punchlist and an Inspection for Material Completion is commenced, but it is discovered the work is not complete (as represented by the Initial Punchlist), a "false start" may be declared and the Inspection for Material Completion terminated. In such situations, the Construction Professional may be responsible for additional costs associated with the false start.

After completion of a successful Inspection for Material Completion, the Design Professional is allowed up to five days to complete the publication of the Final Punch List, assign (retainage) values to each item and establish a completion date for each item.

Upon receipt of the Final Punchlist from the Design Professional should immediately review all items. If there are any items on the list which the Construction Professional believes were not required by the Contract Documents, he should immediately make the Owner and Design Professional aware so the items can be reviewed and a final determination made.

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B2. Deliverables Required for Material Completion

The Construction Professional, Design Professional and Owner/Agency project manager should independently prepare a list of *deliverables* as required by the construction agreement. This list should be confirmed at the beginning of the project with the status of the items on the list reviewed more frequently during the final months of construction. The Inspection for Material Completion will proceed more efficiently if the Construction Professional has assembled all of these required certificates, warranties, attic stock, and other list items during the progress of the work.

The delivery and acceptance of Final Documents (required at Material Completion) as described in the construction agreement *is the most common cause of delay in completing projects and authorizing final payments.*

Deliverables generally fall into four broad categories:

1. *Certificates* from the Construction Professional confirming the completion status of work, system operations, various legal affidavits, final (asset) costs, and any other certificates confirming the completion status of work.

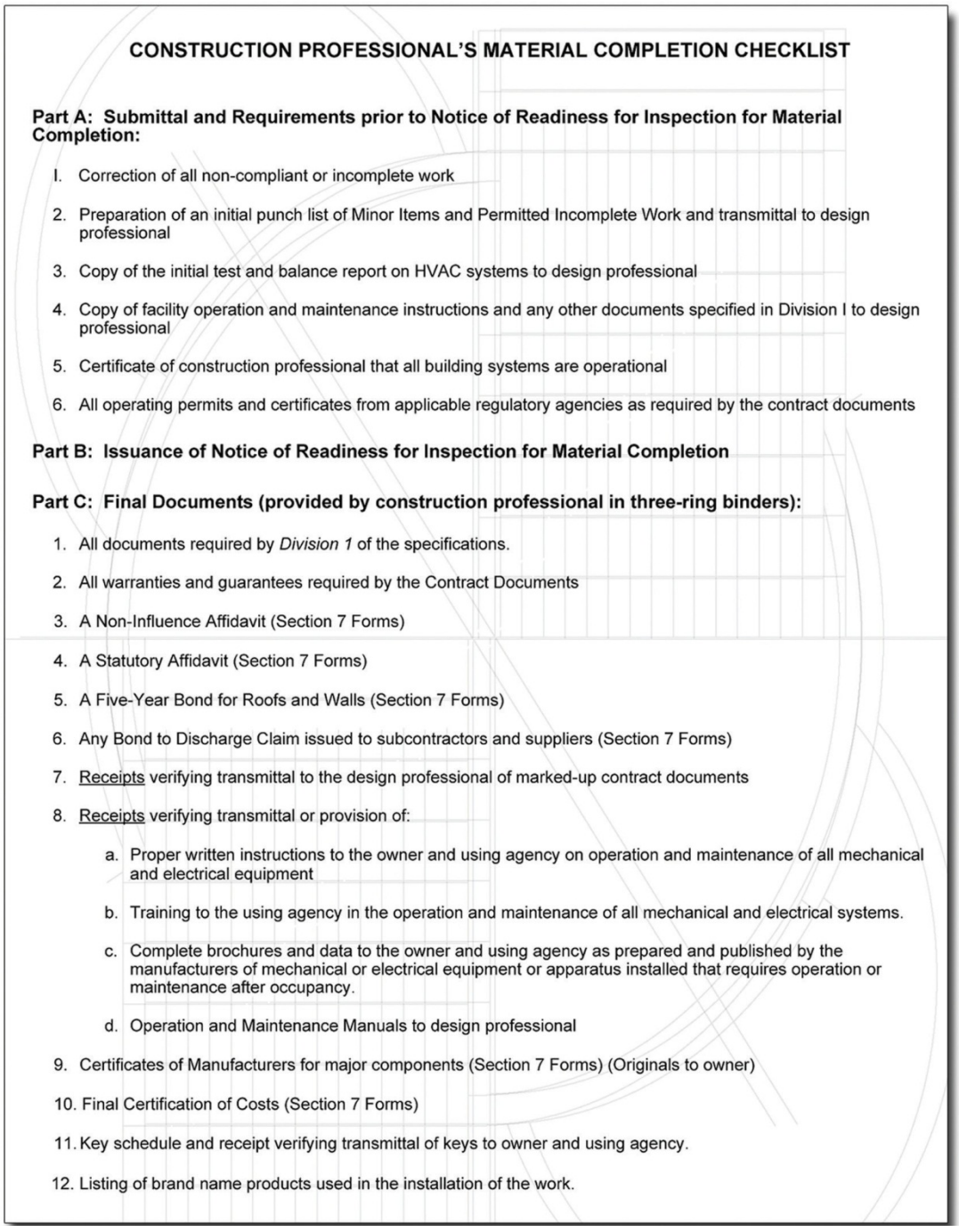
2. *Receipts* for delivery of other deliverables transmitted to Owner/Agency or Design Professional prior to Material Completion (e.g., Owner's manuals, training manuals, key schedules, and other deliverables)

3. *Documents* such as required operational permits (Fire Marshal, elevator, boiler, and any other required operational permits), initial test and balance report, facility operation and maintenance instructions, and other documents as specified in the trade specifications and Contract Documents including warranties, guarantees, bonds (roof, wall, discharge claims), Certificates of Manufacturers of Major Components, and other documents as required.

4. *Loose equipment* such as attic stock and similar physical items not attached or made a part of the structure.

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The Construction Professionals' Material Completion Checklist has been prepared for use with the GSFIC construction agreements to assist the Construction Professional with preparing for Material Completion. However, this checklist should only be used as a guide; the specific construction agreement and Contract Documents always govern.



CONSTRUCTION PROFESSIONAL'S MATERIAL COMPLETION CHECKLIST

Part A: Submittal and Requirements prior to Notice of Readiness for Inspection for Material Completion:

1. Correction of all non-compliant or incomplete work
2. Preparation of an initial punch list of Minor Items and Permitted Incomplete Work and transmittal to design professional
3. Copy of the initial test and balance report on HVAC systems to design professional
4. Copy of facility operation and maintenance instructions and any other documents specified in Division I to design professional
5. Certificate of construction professional that all building systems are operational
6. All operating permits and certificates from applicable regulatory agencies as required by the contract documents

Part B: Issuance of Notice of Readiness for Inspection for Material Completion

Part C: Final Documents (provided by construction professional in three-ring binders):

1. All documents required by *Division 1* of the specifications.
2. All warranties and guarantees required by the Contract Documents
3. A Non-Influence Affidavit (Section 7 Forms)
4. A Statutory Affidavit (Section 7 Forms)
5. A Five-Year Bond for Roofs and Walls (Section 7 Forms)
6. Any Bond to Discharge Claim issued to subcontractors and suppliers (Section 7 Forms)
7. Receipts verifying transmittal to the design professional of marked-up contract documents
8. Receipts verifying transmittal or provision of:
   a. Proper written instructions to the owner and using agency on operation and maintenance of all mechanical and electrical equipment
   b. Training to the using agency in the operation and maintenance of all mechanical and electrical systems.
   c. Complete brochures and data to the owner and using agency as prepared and published by the manufacturers of mechanical or electrical equipment or apparatus installed that requires operation or maintenance after occupancy.
   d. Operation and Maintenance Manuals to design professional
9. Certificates of Manufacturers for major components (Section 7 Forms) (Originals to owner)
10. Final Certification of Costs (Section 7 Forms)
11. Key schedule and receipt verifying transmittal of keys to owner and using agency.
12. Listing of brand name products used in the installation of the work.

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Figure 75: Excerpt from Construction Professional's Checklist for Material Completion

The timing of deliverables should be considered as they pertain to the subject matter of the documents, their intended use, and the estimated time for review or approval.
For example, Operations and Maintenance Manuals are to be provided to the Design Professional seven days in advance of the Material Completion date so that they can be reviewed by the Design Professional and delivered to the Owner/Agency at Material Completion.

Additionally, an advance copy of these Operations and Maintenance Manuals are needed by the Owner/ Agency in order to receive proper training and instruction on the operation of the building systems. An advance copy will also be needed by the Commissioning Agent if present.

Another critical requirement of Material Completion is the acquisition of the permanent operating permits and certificates such as:

- Certificate of Occupancy from State Fire Marshal
- Elevator/Escalator permits
- Boiler permit
- Environmental permits (air discharge, sewer, waterways, and other permits as applicable)
- Special Equipment (X-Ray) operating permits
- Food Service permit

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Many of these certificates/permits from regulatory agencies require application from both the Construction Professional and the Owner/Agency and most require a special inspection by the regulatory agency. There is also the possibility of the need for a change order to correct a minor deficiency or omission that would prevent the regulatory agency from issuing the required permit. Acquisition of operating permits and certificates is very critical to the authorization to occupy and operate a new facility. Most all requirements are backed by laws and have safety of persons and protection of property as their basis. Such requirements and the confirming permits *cannot* be deferred by the Design Professional or Owner/Agency in the rush to complete Material Completion and occupy the facility.

B3. Occupancy by Owner/Using Agency

When the Design Professional completes the Certificate of Material Completion that confirms the acceptance of the work and completion of all requirements of the Construction Professional, the transfer and occupancy of the project to the Owner/Agency may proceed. The transfer generally will be scheduled a day or more past the Inspection for Material Completion to allow for final assembly of documents by the Construction Professional and review by the Design Professional.

The Design Professional's Certificate for Material Completion and Authorization to Occupy is executed by authorized representatives of the Owner and Design Professional and lists the representations and responsibilities of the Using agency in accepting the project and includes:

- Receipts for keys, loose equipment, project documents, and similar receipts
- Acknowledgment of responsibility to place insurance on the project and property,
- Confirmation that the agency is satisfied with quality and completeness of the work except as noted on the Final Punch List
- Duty to operate and maintain the project, comply with operating codes and permits, and report warranty defects

Upon execution of the certificates, the Owner/Agency assumes full responsibility for security and operation of the project. At this point, the Construction Professional must comply with the "Owner/Agency's" procedures for access and continuation of construction activities to complete the Final Punchlist. Occupancy of the project is more fully described in *SCM Section Four: Occupancy*.

B4. Transfer of Asset

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At Material Completion and upon the Owner/Agency occupying the facility, the GSFIC Construction Division will prepare a Capital Asset Transfer letter to the Owner/Agency. This serves as a notification to the Owner/Agency to report this project on their books as a capital asset. This letter also provides information on project budget status and other information to comply with Department of Audits' requirements.

C. FINAL COMPLETION

Final Completion is achieved in two phases. The first phase consists of the completion of the minor items listed on the Final Punchlist that should be completed in thirty days or less. The second phase is the completion of all remaining work that includes the "permitted incomplete work" items and closeout of all contract administrative items (change orders, claims, payments, bonds, and other contract administrative items as applicable). This phase typically will run six to fourteen months from the date of Material Completion. Final Completion begins with the Construction Professional issuing a Notice of Readiness for Interim Inspection for Punchlist Completion.

C1. Notice of Readiness for Interim Inspection for Punchlist Completion

The Construction Professional should diligently pursue correction of all *minor items* and those *permitted incomplete work* items which fall due within the first thirty days after Material Completion. During this critical period, the "Owner/Agency" has occupancy and use of the facility and is responsibility for care and security. Frequently, the Construction Professional and subcontractors complain about access restrictions as an excuse for delays, but all must work together to complete the punchlist.

the Construction Professional issues notice to the Design Professional and Owner/Agency in the following words
For GSFIC construction agreements, not more than thirty days following Material Completion and assuming the minor items have been completed.

The work on the contract for the (name of project) having been 100 percent completed, except for Permitted Incomplete Work not yet due to be completed, I request that the Design Professional perform an Interim Inspection for Punchlist Completion promptly in accordance with Section 6, Part Three of the General Conditions.

When the Construction Professional submits the notice affirming 100 percent completion of the Final Punchlist, the Design Professional will conduct an inspection and issue a Report of Interim Inspection as described in Section 6, Part Three of the Construction Management Agreement (CM/ GC). The Owner/Agency's project manager should carefully review this report with the agency's operating personnel to ensure all parties are satisfied the work is complete. Failure to do this may cause the difficult necessity of filing warranty complaints (See *SCM Chapter 4.2: Move-in and Preparation for Operations*) to pursue corrective action.

Upon a successful conclusion of the Interim Inspection for Punchlist Completion, the Construction Professional may apply for the release of applicable retainages. The next step is for the Construction Professional to complete all work and request an Inspection for Final Completion.

If however, the Construction Professional is not completed with the minor items in thirty days, under most circumstances there should be no inspection, no release of any withheld amounts/retainage, and the Design Professional should issue a Notice of Non-Compliance for the contractor's failure to complete the work.

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If there is concern about the Construction Professional's ability and willingness to complete the Final Punchlist as required, the Owner/Agency project manager and Design Professional should also confer regarding application of contract provisions for Effect of Failure to Achieve Final Completion and other remedies.

C2. Notice of Readiness for Final Inspection

When *all* requirements of the Contract Documents are completed, including physical work, correction of non-complying work, deliverables, certificates, documents, and all other requirements of the Contract Documents, the Construction Professional shall contact the Design Professional and Owner/Agency requesting an inspection for Final Completion. This is the final review of the work of the Construction Professional, and *all work and contract requirements must be completed*.

The Design Professional conducts the Final Inspection in the company of the Owner/Agency's project manager or representative. If the inspection confirms completion of all work, the Design Professional issues the Design Professional's Certificate of Final Completion.

If however, the Construction Professional has not completed the Permitted Incomplete Items within the stipulated time period or otherwise not completed other requirements and if there is concern about the Construction Professional's ability and willingness to complete the Final

Punchlist as required, the Owner/Agency's project manager and Design Professional should also confer regarding application of contract provisions for Effect of Failure to Achieve Final Completion and other remedies.

Upon successful completion of the Final Inspection and Design Professional's issuance of the Certificate of Final Completion, the Construction Professional may apply for the release of all remaining retainages. This is the final step in the process to close out the construction agreement, and when payments are made, this completes the *Final Completion Phase.*

The Construction Professional remains responsible for corrections of defective work reported by the Owner/Agency for a period of time as governed by law and the Contract Documents. Correction of defective work after Final Payment is described in *SCM Section Four: Occupancy*.

C3. Final Completion of the Design Professional Contract

During the Construction Phase, the Design Professional is paid for Construction Administration Services, certain reimbursables, authorized additional services and additional design fees for certain change orders. Generally, at Material Completion the Design Professional is allowed payments up to 95 percent of the Basic Construction Contract Administration Services Fee (specific contracts may require other arrangements). To receive this payment, the Design Professional must have executed the Certificate for Material Completion.

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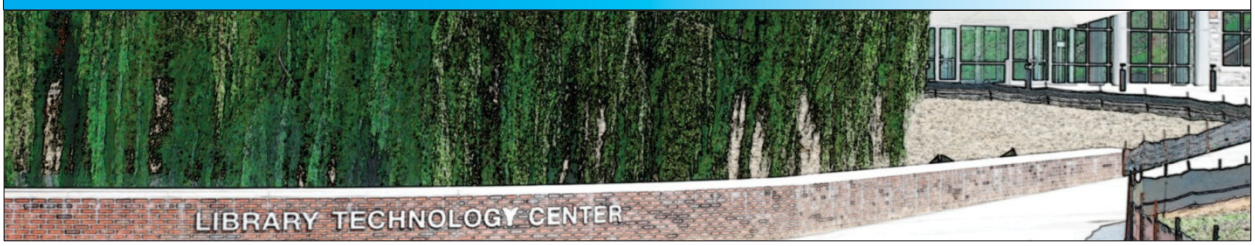
Final Payment to the Design Professional cannot occur until the project is 100 percent complete as evidenced by the Design Professional's issuance of the Certificate of Final Completion. Additionally, the Design Professional must have completed all other terms and conditions of the Design Professional Contract including, but not limited to, issuance of Record Documents to the Owner/Agency in the formats and quantities as prescribed in the Design Professional Contract.

C4 Final Project Closeout

The project is not completed until all payments for all outstanding obligations of the Owner/Agency are completed and all contracts, purchase orders and other procurement documents are completed and closed. Any remaining funds in the project accounts should be disbursed to other accounts or returned as proscribed by Owner/Agency policies. When all funds are disbursed from the project account and all contracts and other procurement documents completed and closed, the project is fully closed out.

SECTION FOUR: OCCUPANCY

Chapter 4.1: Introduction



The occupancy of a project represents the completion of a major "Project Implementation" milestone and begins a new series of activities under the responsibility of the Owner/Using Agency. Planning and preparations for occupancy of a project begin months and even years prior to the Material Completion date. The objective of any project is to begin full operations as quickly as possible, be it a maintenance facility with equipment to be fixed, a classroom with students, or a laboratory with research projects.

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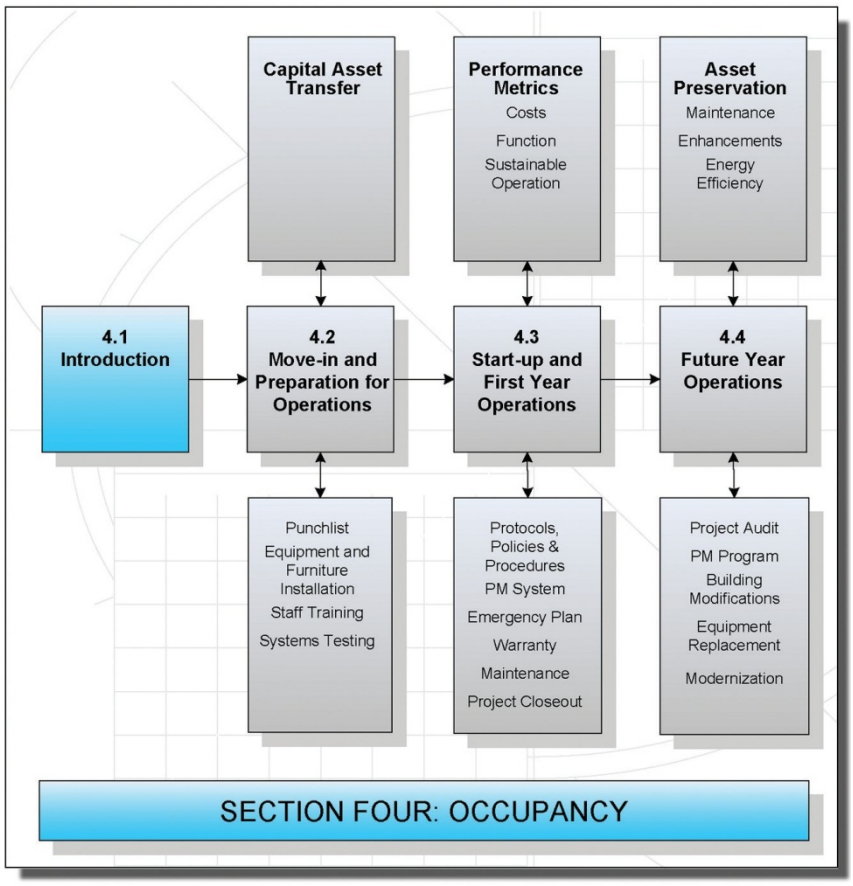


Figure 76: Occupancy Process Flow Chart

To achieve this ultimate milestone, the Owner/Using Agency must carefully coordinate the plans and schedules for staffing, operating budgets, move-in of furnishings and equipment, development of operating procedures and protocol, start-up and final testing of systems, and commencement of service and maintenance contracts—all in addition to working around the final completion and closeout of the construction contract.

The completion of a project represents a significant capital investment by the State. In addition to the physical assets of the structure and property, the planning, programming, and design represent a less visible but valuable capital asset in respect to the form, function and aesthetic features of the building. The Owner/Using Agency has an important responsibility to the citizens of the State to use and preserve this valuable asset through responsible operation, maintenance, and future modernization. This section of the State Construction Manual will review guidelines and techniques to assist agencies in achieving these goals. The term *Owner/Using Agency* as used herein will refer collectively to the GSFIC Construction Division, the State agency, and the local agency division/ institution/facility which actually "uses" the project. Depending on the arrangements for project administration, the execution of documents and distribution of Project Records may be handled by one or more of these parties.

A. MATERIAL COMPLETION AND PROJECT TRANSFER REVIEWED

Material Completion is more fully described in *SCM Chapter 3.8: Contract Closeout*. For advance planning, the Owner/Using Agency should be aware of the projected date for Material Completion. This is known at the commencement of every project and is a contractual obligation amended only by change order. In the Construction Management (CM/GC) and Design-Build delivery methods, the date of Material Completion is reconfirmed upon execution of the Guaranteed Maximum Price (GMP) Change Order and subsequent Notice to Proceed. The Owner/Using Agency's project manager should be in position to give advice on the accuracy of the projected Material Completion date and communicate any threats or changes during the Project Implementation Phase.

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Many occupancy issues may be avoided by ensuring the facility is truly functional and completed at the Material Completion milestone. Although the Design Professional performs the Inspection for Material Completion and certifies the facility has achieved Material Completion, the Owner/Using Agency must be satisfied that the inspection is thorough and the Final Punchlist only contains (in addition to Permitted Incomplete Items) items that are truly minor in nature and can be finished during the following thirty days (See *SCM Chapter 3.8 [B.1]: Notice of Readiness for Inspection for Material Completion*).

A1. Material Completion

To achieve Material Completion, the following conditions must be satisfied:

- The Design Professional must inspect and certify the facility for occupancy
- Inspections and certifications by other regulatory agencies must be obtained to include Certificate of Occupancy by the State Fire Marshal
- The Using Agency must be trained on operations of the building's systems and have executed documents for the acceptance of the project. When applicable, an Initial Test and Balance must be submitted, received and approved by the Design Professional and the Mechanical Engineer.

At Material Completion the following actions occur:

1. The Owner/Using Agency assumes control, security and custody of the project, which includes the following events:
   - Transfer of utilities and payment of costs from date of Material Completion
   - Acceptance of all keys and assumption of security/access control of project.
   - Transfer of Property and Liability insurance
   - Operation and Maintenance (including preventive maintenance) on all systems, equipment and facilities.
2. Construction professional completes removal of all temporary construction facilities, fences, utilities, storage areas, locks and similar items (except what is required for punchlist completion).
3. The warranty period on the project and equipment begins.
4. All lawful and contractual certificates, closeout documents and permits for the Owner/Using Agency to operate and occupy the facility are obtained which always include the Design Professional's Certificate of Material Completion and the Fire Marshal's Certificate of Occupancy.

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A2. Project Transfer (Occupancy by Using Agency)

Project transfer begins by the Construction Professional submitting an Initial Punchlist and Notice of Readiness for Inspection for Material Completion to the Design Professional. The Design Professional then schedules the Inspection for Material Completion with all entities. The Design Professional will execute the Certificate of Material Completion which transfers the project to the Owner/Using Agency.

The Using Agency's Certificate for Material Completion and Authorization to Occupy is executed by authorized representatives of the Owner and Using Agency and lists the representations and responsibilities of the Using Agency in accepting the project and includes:

- Receipts for keys, loose equipment, project documents, and similar receipts, as applicable
- Acknowledgment of responsibility to place insurance on the project and property
- Confirmation that the agency is satisfied with quality and completeness of the work except as noted on Final Punchlist
- Duty to operate and maintain project, comply with operating codes and permits, and report warranty defects

Upon execution of the certificates, the Owner/Using Agency assumes full responsibility for security and operation of the project. At this point, the Construction Professional must comply with the Using Agency's procedures for access and continuation of construction activities to complete the Final Punchlist.

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B. PARTIAL OCCUPANCY PRIOR TO FULL MATERIAL COMPLETION

Sometimes there is a need to complete projects in phases to allow the Owner/Using Agency to partially occupy completed portions of the project as work continues toward full Material Completion. This may occur on large renovation projects when it is impractical and costly for the Owner/ Using Agency to totally vacate a facility. These situations create additional risks and difficulties for both the Owner/Using Agency and Construction Professional that can be mitigated by carefully constructed language in the Special Conditions of the construction agreement.

Essentially, a partial occupancy of a completed space within a project becomes a specific "Material Completion process" for that area as if it were a separate project. The Owner/Using Agency assumes all of the responsibilities for this area of the project (See *SCM Chapter 4.1 [A2]: Project Transfer* above) unless specifically addressed in the Special Conditions of the construction agreement (e.g., cost of utilities).

Partial occupancy also requires careful planning for the safety of Owner/Using Agency personnel, access to and from the area without interfering or trespassing on the more hazardous construction site, and preparing for emergency situations (fire egress, annunciation systems, and other emergency situations). Equipment warranties as well as the duty to maintain commence with the partial occupancy of an area unless otherwise addressed in the Special Conditions of the construction agreement.

C. MOVE-IN AND PREPARATIONS FOR OPERATIONS

For most projects, the agency's schedule for full operations must accommodate several weeks of move-in activities and preparations. With the exception of approved separate Owner/Agency contracts for telecommunications and other systems, furniture installation, equipment installation, and other approved separate Owner/Agency contracts, most preparatory work to start operations in a new facility cannot commence until the date of Material Completion and Occupancy. Within this phase, the agency will hire or relocate staff, install furniture, fixtures and equipment, create or adopt operating procedures and policies, perform additional training and other pre-operational tasks. In some instances, separate Owner/Agency contracts for telecommunications, audio/video, furniture and equipment installation require access to the facility prior to Material Completion. All work conducted that is not under the Construction Professional's contract and oversight must be reported and coordinated with the Construction Professional and may be added as a special condition of the original construction contract.

D. START-UP AND FIRST-YEAR OPERATIONS

The first year of operations in a new project are challenging as the Owner/Using Agency focus on using the new facility for its intended purpose. During this phase most construction related defects appear and have to be dealt with swiftly. Maintenance activities and preventive maintenance programs have to be coordinated with warranties, guarantees and corrective work performed by the Construction Professional. Under warranty, the Owner/Using Agency is still responsible for conducting preventive maintenance on all equipment, not covered under a one year maintenance agreement by the Construction Professional, according to its designated operations and maintenance manual.

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Seasonal test and balance activities are performed by the Construction Professional as well as completion of other Permitted Incomplete Work items designated on the punchlist. These may include landscaping and first-year maintenance agreements on critical systems. Final Completion of the project to close-out all construction related contracts is also accomplished during this first year of operations.

E. FUTURE-YEAR OPERATIONS

After the first year of occupancy and release of the Construction Professional, Design Professional and other key members of the project team, the operation of the project becomes more routine. The key responsibility for the Owner/Using Agency is to continue to care for and maintain the facility so it will provide many future years of quality service. Immediately following the first year of operation, most of the standard guarantees and warranties from the original contractor and suppliers expire. The Owner/Using Agency will also bid and award replacement maintenance and service contracts which may have provided coverage for the first year under the construction agreement.

It is also common for Owner/Using Agency's to begin making minor modifications to the facility to address programming or design deficiencies or changed requirements. It is important to the concept of Asset Preservation that such changes are properly planned and enhance the value of the facility.

As the facility ages, more critical attention is required toward establishing budgets for major equipment and systems replacement as well as furnishings and interior finishes. As future advances are made in energy conservation and sustainable design, these features should be incorporated into future renovations and modernization projects. State owned facilities must be designed, constructed, operated and maintained according to the State of Georgia Energy Efficiency and Sustainable Construction Act of 2008 [OCGA 50-8-18].

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Section Four: Occupancy

Chapter 4.2: Move-In And Preparations For Operations



Material Completion represents a major milestone in the implementation of a project; but, from the Owner/Using Agency's perspective, there is more work and preparation to accomplish before operations in the new facility can begin. Based upon the projected Material Completion date, updated throughout the Project Implementation Phase, the Owner/Using Agency should have planned and coordinated a schedule to complete staffing, personnel training, Furniture, Fixture & Equipment installation, communications and related systems and similar pre-operational requirements.

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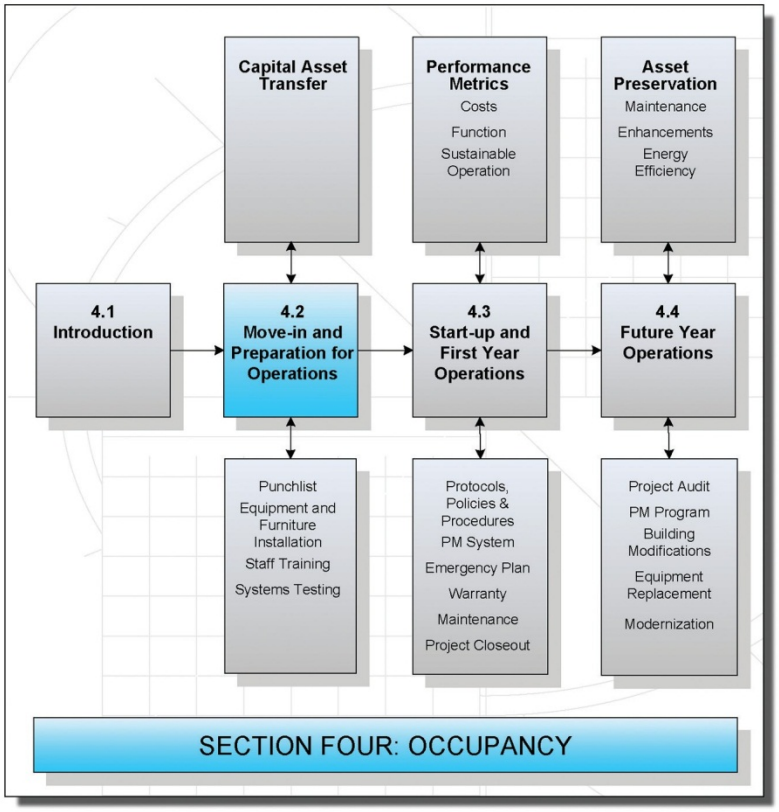


Figure 77: Occupancy Process Flow Chart

A. SECURITY OF PROPERTY AND EQUIPMENT

On the date of Material Completion when the Owner/Using Agency executes the Using Agency's Certificate for Material Completion and Authorization to Occupy, full responsibility for security of the property (former construction site) and all equipment, attic stock, keys, and other property items *rests with the Owner/Using Agency*. Unfortunately during this critical turnover phase, most reports of theft and damage occur as a result of the Owner/Using Agency's failure to properly secure the site and take charge of access control and supervision. However, the Owner/Using Agency must develop and communicate security plans to provide needed access for those authorized contractors, subcontractors, and vendors who need to finish their work during this Move-In and Preparation Phase.

A1. Contractor Access and Security Control Plan

The Construction Professional is required to work diligently to complete the Final Punchlist of Minor Items within the first thirty days following the date of Material Completion. As during the term of the project, subcontractors and vendors of the Construction Professional will return to perform this work. The problems arise when the Construction Professional fails to instruct and supervise these materialmen and trade contractors regarding the new access requirements for entering and exiting the "former construction site." Many of these personnel resent not having unrestricted access to rooms, hallways, and areas of the occupied facility. On the other hand, if the Owner/Using Agency provides unrestricted and unsupervised access to the new facility, it is very difficult if not impossible to assess responsibility for damages to interior finishes, stolen furnishing and equipment, and other problems, as many "other" personnel are also present working to prepare for full operations of the facility.

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The Owner/Using Agency working in conjunction with the project manager can mitigate such problems with a carefully coordinated and reasonable *Security Access Plan* for the Construction Professional and subordinate contractors. Such a plan could include designation of an official entry/exit; a key check-out/check-in procedure; a credentialing/badging requirement; publication and issuance of a brief one-page policy statement on access/security; an inspection procedure; and a sign-in/sign-out log.

The inspection procedure would include a daily review of the spaces where the Construction Professional's workmen are present. Any noted areas of damage or theft would be properly documented and immediately brought to the attention of the Construction Professional or the responsible party if known. The importance of this daily review coincides with the duty to complete the Final Punchlist, which can be delayed if more damage occurs while correcting the punchlist items. Another aspect and benefit of a daily inspection procedure would be to discover items being stolen (i.e., some thefts occur by a person moving an item to a storage room or other location, then removing from the site several days later.).

The designation of an official entry/exit point is also critical to maintaining security. There are several suggested guidelines for the Owner/Using Agency to follow in developing such a plan:

- All workmen should enter and leave the property through a designated security checkpoint. This could be simply an entry door or other designated place on the project. It does not have to be a full security guard post.
- At the checkpoint a policy should be clearly stated that all tool-boxes, bags, and packages are subject to inspection.
- All workers should sign an in/out log including the worker's name, company name, the time they arrive and the time they leave. This process helps to identify who is on the project site at specific times, in the event an incident or theft occurs.
- Company and personal vehicles should be parked in a designated parking area *not adjacent to the project site.* Most theft from construction sites occurs by taking items to workmen's vehicles (including company vehicles brought into the work area). Requests from subcontractors and suppliers to bring their company vehicles into the site should be carefully reviewed and special check-in/out inspection procedures invoked.
- The Owner/Using Agency security measures should be in force whenever workmen are present and area supervision provided after work hours.

The one-page policy statement mentioned above is also an important element of the security plan. The statement should be brief, easy to read and understand and include statements covering:

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- How to gain access to work areas
- Security on issued keys and access (i.e., do not pass keys; do not leave rooms unsecured when finished, and any other key/access issues pertaining to the site.).
- Restrictions on smoking, eating, sleeping on premises, playing loud music, and similar restrictions
- Duty to protect furniture, equipment, and furnishing in place.
- Procedure to schedule utility interruptions
- Procedure to report injuries and emergencies
- Procedure to report discovery of damages or theft

Although all the above may seem overly restrictive, the fact is that during the first thirty days of occupancy while the Construction Professional's personnel are actively engaged in punchlist corrections, such planning and organization will actually expedite completion of the work and minimize damages and theft, which does in fact delay completion of the project and full operation by the Owner/Using Agency.

A2. Separate Contractor and Vendor Access

The term *separate contractor* and *vendor* generally refers to firms who have a direct contract or purchase order with the Owner/Using Agency and are not associated with the Construction Professional or Design Professional. Generally, these firms have no prior knowledge of instructions and guidelines created and reviewed with the Construction Professionals during project meetings. Additionally, the terms and conditions within these separate contracts and purchase orders generally do not contain language covering coordination of work, protection of property, and other guide- lines, but may contain general liability and insurance provisions. Examples of separate contractors may include installers of telecommunications equipment, energy management systems, computer network systems, reproduction equipment, landscaping, or other separate contractors specific to a site.

These types of contractors and vendors working at the facility during this move-in period require special attention by the Owner/Using Agency and project manager. As more fully discussed in *SCM Chapter 4.2 [A1] Contractor Access and Security Access Plan* above, these same concerns, issues, and suggested guidelines apply to separate contractors and vendors. An additional concern with these contractors and vendors is protection of both the Owner/Using Agency's property and the remedial work being performed by the Construction Professional.

A3. Securing Agency Property and Staff Access

As more fully discussed in *Contractor Access and Security Access Plan* above, these guidelines will address most of the concerns regarding securing and protecting agency property moved into the new facility. However, care should be taken in scheduling the installation of very expensive or fragile agency property such as computers, artwork, microwave ovens, sculptures, as well as items that would be desirable to a thief. Not all theft occurs from external workmen, and agency staff working on the premises should be required to follow the same access and credentialing requirements of the construction and vendor personnel.

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If possible, the Owner/Using Agency should restrict staff access during this Move-in and Preparation Phase to just those personnel required to perform these functions. Again, the Construction Professional is diligently engaged during this first thirty days correcting the work on the Final Punchlist and there remain elements of hazard on the worksite. Additionally, the amount of people roaming the new facility hampers effectiveness of the *Security Access Plan.*

B. FURNITURE, FIXTURES AND EQUIPMENT (FF&E) INSTALLATION

In addition to the guidelines offered in *Contractor Access and Security Access Plan* above, the FF&E delivery and installation will generally involve a number of individual vendors.

On larger facilities, the Owner/Using Agency will have procedures in place for receiving and warehousing FF&E, then moving FF&E in place immediately following Material Completion. Or, arrangements may be scheduled for delivery during this initial Move-in and Preparation period.

The Procurement Services Department of the GSFIC Construction Division offers full services for the procurement of FF&E on assigned projects. The Owner/Using Agency can benefit from this assistance during this busy Move-in and Preparation Phase by having GSFIC administer this work as an extension of their construction services. If the GSFIC Procurement Services Department is engaged in FF&E services, they will coordinate delivery, placement and inspection with the Owner/Using Agency. Upon receipt of the FF&E items, the Owner/Using Agency assumes full responsibility for custody and control of the property.

The Construction Professional and the Owner/Using Agency (including GSFIC Procurement Services if applicable) should coordinate delivery of FF&E in any area that may be subject to additional construction operations based on the Final Punchlist. For example, if a classroom requires remedial ceiling work and painting, it would not be prudent to install the furniture before this work was completed, inspected, and accepted.

The suggested inspection guidelines described as part of the *Security Access Plan* also are important during the FF&E installation period. Typically, furniture vendors are prone to damaging hallway finishes, door jambs, and carpets when installing or placing tables, desks, and chairs. Such damage, if not properly assigned, may create issues in resolving the Construction Professional's Final Punchlist and duty to protect its work.

B1. Installation of Class II Equipment

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The term *Class II* in FF&E generally refers to equipment that requires some amount of permanent or semi-permanent connection to the structure. This would include anchoring, fixed electrical or plumbing connections, ventilation, and similar equipment. Provisions for installation of this work should have been provided by the Design Professional in the plans and specifications. However, when items are procured through competitive bidding, certain minor variations in "rough-in" prevail with alternate approved products. These minor variations may require relocation of an electrical outbox, floor drain, plumbing pipes, and other relocations. More significant changes may require change in electrical circuitry, new plumbing, stronger anchoring devices, and similar significant changes specific to a site.

It is important for the Owner/Using Agency to accomplish such minor modifications without compromising the design of the facility or the warranty obligations of the Construction Professional (See *SCM Chapter 4.2D: Minor Modifications and Supplemental Projects* below). Hopefully, the work of adjusting, extending or modifying anchoring and utility connections can be achieved by the Using Agency's maintenance personnel, the vendor's installer or a separate contractor engaged by the Owner/Using Agency through a Funding Allotment, (if undesignated funds are available).

Again however, it is imperative such work does not adversely affect the design and is properly documented. Another alternative would be to request a change order to the Construction Professional's contract to make the modification. This alternative would be proper if the needed modification were significant, but otherwise would not be desired as it would delay contract closeout and vacating of the site.

C. ALTERNATE USE OF SPACE

Unfortunately, significant time (years) may elapse between the time the Owner/Using Agency preformed the initial planning for this project and completed the *architectural program* or Initial Planning Document. Design review meetings and discussions during the development of the plans and specifications may also have taken place an extended time before. Add to this scenario changes in managers and personnel resulting in a situation in which those with knowledge of the design intent are not present, and others who did not participate in initial planning are now responsible for operating in the new facility.

It is not uncommon therefore for the Owner/Using Agency to apply other uses to constructed space that may be different from those uses that were programmed/designed by the Design Professional. This is not a perfect science, but it is important for the Owner/Using Agency to exercise caution before assigning alternate functions to space. In reviewing such requests, the Owner/Using Agency may want to consider:

- What was the original purpose of this space, and why was it programmed accordingly? Is this requirement still valid?
- Was this new use of this space contemplated in the original initial planning? If so, were there reasons why it was not approved and incorporated into the project?
- Is this space properly designed for this alternate use?
- Are there alternatives to changing the intended use of this space?
- Will the HVAC, energy management, and electrical systems accommodate the use of this space in this alternate function?
- Is the Certificate of Occupancy affected if this space is used for an alternate purpose? (i.e., there are different code requirements for assembly, storage, flammable storage, exiting, capacity, and similar function requiring code requirements.)

It is advisable for the Owner/Using Agency to ensure decisions to alter the programmatic use of designed spaces, enhance the operation of the facility, and preserve the asset.

D. MINOR MODIFICATIONS AND SUPPLEMENTAL PROJECTS

As discussed in *SCM Chapter 4.2(C): Alternate Use of Space*, an Owner/Using Agency frequently will find the need on a new project to make minor modifications or add supplemental work to finish an area. Examples of this may be to create an office to accommodate increased staffing unanticipated during the planning activities. Food Service personnel may desire a different arrangement of kitchen equipment to suit their perceived needs. Administrative staff may want shelves, built-in closets, or a large power-consuming copier in what was a coat closet. The modifications can be endless unless this process is appropriately managed by the Owner/Using Agency.

There is no argument that such changes are sometimes necessary. As stated before, changes in agency functions, personnel, new Strategic Plans, and other factors make the best designs outdated by the time the facility is constructed and occupied. However, it is important for the Owner/Using Agency to implement such approved requests to maintain or enhance the facility and preserve the asset. Guidelines to achieve this would include:

- Engage the original Design Professional to assist with supplemental drawings and specifications to ensure all codes and requirements met as well as to preserve architectural/engineering responsibility.
- Ensure products and workmanship match or exceed the original specifications.
- Ensure work is performed by competent personnel of the agency or by a licensed contractor.
- Ensure major building systems (environmental, energy, life safety, and similar systems) are not affected by these changes. If so, these system designers and installers should be engaged as well as the Design Professional to oversee or perform the changes.
- Documentation of changes should be made and attached to the Project Records (See *SCM Chapter 4.2(F): Project Records*).
- Supplemental funding should be used to pay for such changes and not maintenance funds. Use of maintenance funds for new and supplement projects simply detracts from the ability to properly maintain the asset.

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E. STAFF TRAINING AND FAMILIARIZATION

As a general rule, *Using Agency training and familiarization* requirements in the Contract Documents focus on building operations systems which for larger projects typically include:

- Air conditioning (Chillers, Cooling Towers, pumps)
- Heating (Boilers, heat exchangers, pumps, fuel supply)
- Energy management (HVAC and Lighting Controls)
- Fire alarm systems (Annunciators, Fire Pumps, Suppression Systems)
- Access and security control (Card Readers, CCTV, Recording Systems, Gates)
- Kitchen equipment
- Audio visual and public address systems
- IT and network systems
- Landscape sprinkler systems

The amount of training provided and the retention by Using Agency staff is difficult to measure. Also, the focus on the Construction Professional (and subcontractors who perform most of this training) is sometimes more on completing the minimum contract requirements and finishing this project. There are no tests and oftentimes the right people from the Owner/Using Agency are not always present or have not been hired as yet. These are concerns that should be contemplated and addressed by the Owner/Using Agency in the months preceding Material Completion when this contract-mandated training is generally scheduled. As part of the contract-mandated training the Construction Professional is responsible for videotaping the operation and maintenance training sessions and providing a copy of the tape.

The Owner/Using Agency may consider these guidelines in preparing for and ensuring a proper amount of staff training and familiarization is achieved by the time of occupancy at Material Completion:

1. If not already part of the project team, engage a Commissioning Agent to assist and oversee the activity of staff training and familiarization on major systems (See *SCM Chapter 3.2: Team Selection*)

2. Conduct review meetings with key agency staff to review contract requirements for training and determine if additional training may be necessary for the proposed assigned staff. If so, additional training may be accomplished by one or combination of the following:

    - Enroll staff in special technical courses on subject matter.
    - Enroll staff in special training seminars provided by the equipment/system manufacturers.
    - Temporarily reassign staff to another similar facility (or agency) to gain work experience with similar systems.
    - Establish a mentoring program with experienced employees.
    - Procure additional training services from the Commissioning Agent, Construction Professional, or system contractor.

3. Ensure the proper staff is scheduled, available, *and will attend* training when scheduled by the Construction Professional.

4. Demand advance copies of operation manuals, equipment brochures, and other information (including applicable shop drawings, change order drawings and specifications) in sufficient time before the scheduled training to allow agency staff opportunity to study, understand, and identify questions about the systems and equipment. Note that these documents are not all contractually required until Material Completion, but it is absolutely essential that the Using Agency's personnel have access to advance copies for this training.

5. Assign an administrative manager to oversee the Construction Professional's training and agency's participation to ensure the Owner/Using Agency receives the quantity and quality of what is required.

F. PROJECT RECORDS

Project Records (also referred to as *Final Documents*) consist of several types of documents and should be safeguarded by the Owner/Using Agency. The following paragraphs summarize the typical documents provided by the Construction Professional and Design Professional during the completion and closeout of a project. Some documents are required at Material Completion, others before Final Completion. Most are eventually delivered to the Using Agency; however, one copy needs to be sent to the Project Manager for archiving. Refer to the specific construction and Design Professional agreements (including supplemental contracts for commissioning) for a complete list and definition of the required Project Records to be delivered to the Owner/Using Agency. The paragraphs below describe commonly required Project Records.

F1. Record Drawings

At the beginning of construction, the Contract Documents include the plans and specifications prepared by the Design Professional. Throughout the term of the Construction Phase, these drawings and specifications are amended and supplemented by revised drawings and specifications, supplemental drawings, clarifications, minor adjustments to conform to field conditions, post-bid addendum, and change orders. Any revised or supplemental information that results in a change to quantity, quality, or function will require a formal change order to the construction agreements.

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Also, throughout the term of the Construction Phase, the Construction Professional will be making notations on the plans and specifications to record the *as-built* conditions that, with minor deviations, should conform to the official plans and specifications. For example, the actual routing of a water line between two points may be shown diagrammatically on the plans, but is noted and recorded by the Construction Professional in its actual location on the as-built drawings.

At Material Completion, the Construction Professional provides a complete set of *marked-up* Construction Documents to the Design Professional showing all changes caused by addenda, field changes, Change Orders, or other observed changes by the Construction Professional. Upon Final Completion, the Design Professional shall revise the original Contract Documents (plans and specifications) incorporating all changes created by change orders, additional sketches, field changes, answered RFI's (Requests for Information), and as-built documents submitted by the Construction Professional and create what is referred to as *Record Drawings*.

These Record Drawings are customarily provided to the Owner/Using Agency as full-size prints, and approved electronic format. As these drawings cannot be completed until the project is totally completed (i.e., Certificate of Final Completion including completion of all Minor Items and Permitted Incomplete Work), the delivery of these documents may be delayed after the date of Material Completion and occupancy.

F2. Operating Instructions, Equipment/Systems Warranties and Guarantees

Although advance copies of equipment and systems operation and maintenance manuals should have been provided to the Using Agency's operational staff for purposes of receiving training and orientation on the operation of the systems, the official documents are submitted to the Design Professional at or before Material Completion. These documents along with applicable warranties, guarantees, and other required certificates are assembled in three-ring binders or a suitable alternative and reviewed by the Design Professional for compliance with the Contract Documents. Upon the Design Professional's satisfactory review, the documents are transmitted to the Owner/ Using Agency. These documents play an important role in the development of Preventive Maintenance programs (*SCM Chapter 4.3 B1: Preventive Maintenance*) and in enforcing warranties and guarantees. If any equipment is to be maintained by an outside maintenance company, reference and incorporation of these manuals into such agreements is also strongly recommended.

F3. Shop Drawings and Submittals

Shop drawings and submittals are documents produced by the Construction Professional and submitted to the Design Professional during the progress of the work. The purpose of these documents is to (1) detail and expand on the *design intent* of a particular component system, or (2) provide exact information on a proposed material item or piece of equipment to be supplied (from a list or specification of alternate products or materials). The transmittal of this information to and from the Design Professional is recorded on the Construction Professional's Shop Drawing and Submittal schedule and customarily a copy of these drawings is provided to the Owner/Using Agency's onsite inspector or project manager.

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Shop drawings and submittals are valuable information to the future maintenance group who may service, repair, and replace this work in future years. They are also very important legal documentation of the as-built construction of the project, which not all may be included in the Record Documents previously discussed. Accordingly, it is good practice for the Owner/Using Agency to request *two additional copies* of all shop drawings and submittals, providing one copy to the maintenance and operations group and securing the other with the Record Documents. On GSFIC-managed projects, the copy of the shop drawings and submittals provided to the Contract Compliance Specialist is not transmitted to the Owner/Using Agency but is filed with other Project Records at the State Archives.

F4. Certificates, Affidavits, Bonds and Capital Cost Accounting

At both Material Completion and Final Completion, certain Final Documents and certifications are required from the Construction Professional. Refer to the specific construction agreements for the list and description of these documents. As these documents have specific and important legal functions, they should be carefully reviewed by the Owner/Using Agency and secured with permanent Project Records. On State-funded projects, these documents generally include the following:

- Statutory Affidavit certifying completion of all work, payment of all subcontractors, suppliers, laborers, and settlement of all claims.
- Non-Influence Affidavit certifying no influence on the procurement of materials, subcontracts, or labor on the project from any official connected with State government.
- Bonds to discharge claim
- Bonds on specified systems warranties (roof, wall, and other systems warranties specific to a project).
- Certification of Costs for Capital Asset Accounting specifying final costs for building and building improvements, infrastructure, and furnishing and equipment.

Certificates of Manufactures for Major Components provided by the original manufacturers certifying that installation and use complies with manufacturer's recommendations (These generally are attached to the Warranties/Guarantees in *SCM Chapter 4.2 [F2.]: Warranties* above.).

F5. Proper Care and Storage of Project Documents

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Unless otherwise provided, the Owner/Using Agency receives two or more copies of the Record Contract documents, Operations and Maintenance manuals, warranties, and guarantees as part of project completion. Access and use of these documents should be carefully controlled.

A restricted and secure repository is recommended for the original copies of *Project Records* (as- built drawings and specifications), Operations and Maintenance manuals, warranties, guarantees, Shop Drawings, and other documents. Electronic documents should be copied and one copy placed in an alternate secure location according to the Owner/Using Agency's records security/ recovery plan.

For the maintenance and operating personnel, additional copies of Operations and Maintenance manuals, plans and specifications and selected shop drawings should be acquired for use in the shop facilities. The specifications should be stored on bookshelves along with Operation and Maintenance manuals in an orderly and accessible manner with a checkout procedure to maintain control of the documents. The drawings should be maintained on hanging racks or flat storage cabinets and indexed for easy access. These documents will prove invaluable in requesting warranty work from the manufacturer, obtaining additional information or replacement parts at future dates, and for the maintenance and repair of the equipment.

SECTION FOUR: OCCUPANCY

CHAPTER 4.3: STARTUP AND FIRST-YEAR OPERATIONS



The first year of operation is anything but routine for the Owner/Using Agency. It is assumed the Owner/Using Agency has hired and placed all essential staff positions (including maintenance and operations) and has secured appropriate operating funding. The priority now is to begin program operations in the new project. During this period, the Construction Professional must complete all remaining minor items and permitted incomplete work, perform seasonal test and balancing of HVAC systems, promptly respond to reported warranty issues and submit final documentation for closeout and payment. The Design Professional and other project contracts are also to be completed and closed out.

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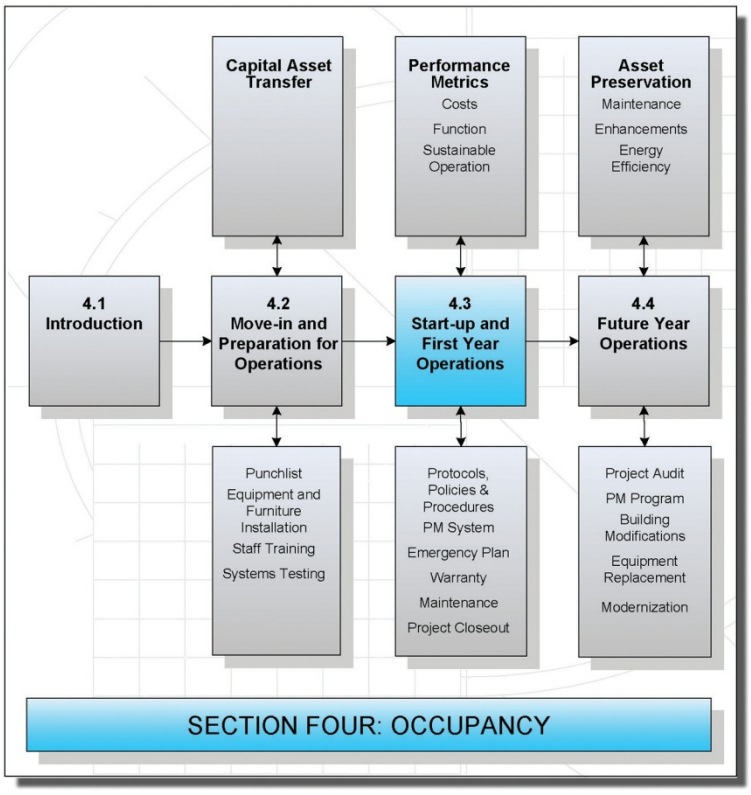


Figure 78: Occupancy Process Flow Diagram

During this first year, the Using Agency should create new or modify existing operational policies and procedures to apply to this new facility. Paragraphs A through E below discuss these Using Agency topics while Paragraphs F through I describe the actions to complete project closeout by the Owner/Using Agency.

A. FACILITY PROTOCOLS AND GUIDELINES

A smooth start-up and first-year operations in a new facility can be enhanced by careful planning and preparation by the Owner/Using Agency's administrative and operational staff. Creating simple to understand and follow protocols for all engaged agency staff on the suggested topics below (as applicable to the project) will help everyone do their job better, enhance the program objectives of the facility, provide for the safety and security of all persons at the facility, and preserve the value of the physical asset. Such subjects should be documented in official agency/facility manuals, but also should be incorporated into any employee training programs (including new employee orientation). Copies of such guidelines may also be provided in the way of handouts, posters, and other means more applicable to the workplace. Suggested Facility Protocols and Guidelines should address the following subjects:

- **Emergency operating procedures**: In addition to fire-related emergencies, such procedures should also address terrorist acts (including bomb threats), weather emergencies, riots and civil disturbances. Testing of systems (emergency generator, sprinkler, fire pump, fire alarm, emergency lighting) and emergency drills would also be a part of these procedures.

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- **Office and facility guidelines**: Describe protocols on office décor, furniture accessories, desktop equipment, plants, and other décor. Also included in this topic would be use of break rooms, food and beverage storage, use of heating units, and similar items. It is generally a good practice to engage employee representatives in developing these guidelines, all designed to maintain a professional and clean work environment.

- **Reporting maintenance deficiencies**: More fully described in Paragraph B below, every employee needs to know how to report any observed maintenance deficiency. Moreover, all employees need to be engaged in the "reporting" process to assist the maintenance department in identifying maintenance items.

- **Requesting modifications to facility**: A procedure should be developed for agency staff to request changes to the new facility. This would include anything from adding shelving in closets to tearing out a wall and expanding an office. Such requests are unavoidable in any new facility, but a proper procedure can review and qualify these requests resulting in proper use of agency funds and preservation of the quality and program intent of the project.

B. MAINTENANCE PROGRAM

It is important for the Owner/Using Agency managers to recognize the importance of a good maintenance program as well as other tasks of the maintenance and operations group.

A facility's maintenance and operations group, skilled in mechanical, electrical, carpentry and other trades, generally will be engaged in five work activities:

- Operating the building systems (HVAC, utilities, electrical, and similar systems)
- Correcting deficiencies noted on Maintenance Work Orders
- Performing preventive maintenance on equipment and systems
- Managing Maintenance Service Agreements
- Performing special projects (modifications, changes, and other special projects specific to the facility)

Too often, maintenance funds and personnel are diverted from the primary tasks of maintenance and the building gradually begins to deteriorate. This can be prevented by the establishment and supervision of a good computer-based Preventive Maintenance and Work Order system commonly available to all State agencies.

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B1. Preventive Maintenance

Beginning with the major items of equipment in a new facility, an examination of the manufacturer's Operations and Maintenance manuals will describe the required inspections and maintenance activities to ensure efficient and reliable operations while preserving the applicable warranties and guarantees. Similar to a personal vehicle, failure of the Owner to adhere to the prescribed maintenance procedures will void the warranty. With *preventive maintenance*, breakdowns are substantially reduced or avoided altogether by the proper care of equipment and systems.

With a computer-based Preventive Maintenance (PM) system, the individual inspection and action items are entered (one time) into a Work Order system that notifies the maintenance group when such inspection/service is required. Since most operating equipment requires maintenance based on operating hours as opposed to calendar days, the PM system will call for periodic inspections to determine if it is time to perform specified PM tasks. More sophisticated energy management systems will, however, monitor hour's usage and alert when PM activities are required. For the Owner/Using Agency, providing a computer-based PM system and ensuring the required PM activities and schedule are properly loaded is half the battle. The greater challenge comes with ensuring the required maintenance is actually being performed. Periodic inspections by senior maintenance managers are essential for any successful PM program.

The PM program is not limited to just items of mechanical or electrical equipment. A PM schedule can also be established for light bulb replacement, painting, floor cover replacement, roof inspections, and a variety of similar recurring building maintenance items. It is a *superior* method to increase efficiency in the Maintenance and Operations departments by:

- Scheduling labor on straight time and with the required amount of personnel
- Scheduling the right type of workers for the job (i.e., A master electrician is not used to change a light bulb.)
- Reserving the right equipment to perform the job efficiently
- Scheduling similar tasks to take advantage of crew size, location and equipment
- Avoiding consequential damages and disruption of operations resulting from a breakdown of equipment/systems

Extending the life of equipment and systems

B2. Maintenance Work Order System

MFC

The opposite of preventive maintenance is simply repairing something when it breaks or is noted on an inspection report. All such work orders should be entered on the computer-based maintenance management program even if they are immediately repaired. Again, the computer-based maintenance management program is an excellent tool to track labor costs, frequency of break- downs, and other metrics essential to good facility management. Work orders are classified by priority and other information such as location; cost, assignment, and time to complete are entered into the system. Frequency of breakdowns can also be an indication of where to apply more preventive maintenance.

Maintenance Work Orders should be completed in a reasonable time. The perceived lack of maintenance in a facility will tend to cause more things to deteriorate. This is called the *broken window syndrome* in facility management and it is an environment the Owner/Using Agency needs to avoid. Also, there should be a very easy-to-follow procedure for all agency staff to report noted deficiencies.

Having everyone actively engaged in keeping the facility in “like new” condition is an added bonus to the operation. In creating and managing an effective maintenance management program, the Owner/Using Agency may consider the following guidelines:

- Conducting periodic inspections of the facility and grounds by senior management staff is essential. During such inspections both positive and corrective comments should be noted on the inspection reports and all employees should recognize the importance placed on facility maintenance.

- A priority system should be established for work orders. Such priority would also address prevention of more serious problems if correction were delayed.

- All work items for maintenance staff should be documented on a work order system to account for personnel time, equipment, and material costs and performance (metrics).

- A work crew could be scheduled to perform both PM and Maintenance Work Orders during a work day/week to increase efficiency of labor and equipment.

- An inventory system should be established to stock frequently required items required for PM and Maintenance Work Orders. Eliminating delay in acquiring materials, tools, and equipment will improve service and efficiency.

- Periodic audits should be conducted of both PM and Maintenance Work Orders to confirm completion of work, amount of materials, and time to complete.

- Consideration should be given to after-hours scheduling for PM and Maintenance Work Orders to increase efficiency and reduce disruption to agency programs.

MFC

B3. Maintenance Service Contracts

Contracting certain maintenance services may be in the best interests of the Owner/Using Agency. When considering outsourcing these services, the Owner/Using Agency may consider:

- Does agency staff have the manpower and expertise to perform the required maintenance services?

- Are special licenses or permits required to perform required maintenance?

- Does the workload requirements for an item of maintenance (e.g., annual preventive maintenance on 4160v switchgear) justify the staffing, training, and equipment to perform this one service?

- From a safety and liability perspective, would the Owner/Using Agency be better served to outsource this activity?

- Would it be cost effective to outsource?

- Would other maintenance priorities be better addressed by outsourcing this function?

Maintenance service contracts include preventive maintenance, inspections, and repairs (including emergency service). Typically, building operators use maintenance service contracts for the following complex and specialized equipment such as:

- Elevators/Escalators
- Chillers
- Boilers
- Computerized building energy management
- Control systems
- Grease Traps
- Exhaust Hood Maintenance and Cleaning
- Access Control
- Roof
- HVAC Chemical Water Treatment
- Fire Suppression Systems
- Fire Extinguishers
- Fuel Management
- Underground Storage Tanks
- Roll-Up Doors
- Fire Alarm System
- Backflow Preventers
- Other complex and specialized equipment

MFC

However, service agreements are also effectively used for the following:

- Window cleaning
- Landscaping
- Exterior lighting
- Pest control
- Pressure washing
- Housekeeping/cleaning
- Trash removal
- Recycling
- Other building operations services.

One of the newest and most popular maintenance service agreements involves roofing systems. In these agreements, the service contractor administers all provisions of any roof warranties and performs inspections and preventive maintenance to extend the service life of a roof.

During the construction of a project involving specialized equipment and systems as mentioned above, it is common for the Design Professional to include in the specifications a requirement for the Construction Professional to provide the first year of maintenance under a service contract as part of the project (e.g., elevator/escalator, HVAC chemical treatment, landscaping, and other first-year items). This is advantageous for all parties as any start-up deficiencies and warranty items on these systems are very easily addressed, and the Owner/Using Agency can focus on other *first-year issues*.

> **Note:** *Operating costs including maintenance services, personnel services, and other non-capital costs do not qualify for expense or reimbursement from bond funds.*

If the Owner/Using Agency elects to outsource maintenance services that were not included in the Construction Professional's agreement, it is important these new contractors strictly adhere to the system's manufacturer's instructions and recommendations as outlined in the Operations and Maintenance manuals.

MFC

The enforcement of warranties and guarantees should not be affected by the presence of a service contractor, and the Owner/Using Agency should not be caused to pay for repairs that are the responsibility of the Construction Professional by hiring a service contractor. Administration of such warranty items can be complicated if not properly addressed in the terms and conditions of the service agreement.

The Owner/Using Agency should not consider using a maintenance service contractor who is not recommended or does not meet the qualifications of the manufacturer of the equipment/systems. It is also a good rule to consider a long-term obligation for such service agreements. Maintenance contractors who have assurance of a longer term agreement tend to focus more on preventive maintenance and long term care of the equipment/systems.

Although State procurement regulations restrict the terms of such agreements, it is acceptable to include extension options and rights to cancel that effectively serve this purpose.

> **Note:** *Costs of additional maintenance service agreements must be paid through operational accounts of the Owner/Using Agency, not capital project funds.*

C. WARRANTY ADMINISTRATION AND PROCEDURES

It is important for the Owner/Using Agency to understand how the provisions of warranties and guarantees work under a State construction agreement. The responsibility of the Owner/Using Agency to operate the facility and carry out the agency program avoiding disruptions caused by construction defects is also acknowledged. The proper administration of warranty complaints should protect the interests of the Owner/Using Agency even in cases where the Owner/Using Agency sends agency funds and labor to address an urgent situation.

C1. Warranty Coverage and Guarantees

On State construction agreements (as recommended herein and described below) there are several types of warranties and guarantees provided in the Contract Documents as described below. In the Contract Documents, these provisions are also referred to under the title of *Correction of Work after Final Payment*. Unfortunately, there are many contractors, subcontractors, and suppliers who fail to understand their obligations under these agreements.

It is important to remember that no Final Inspection, correction of Final Punchlist, payment of contracts, change in business organization (with successor), implied acceptance of work by unauthorized parties, or failure of a subcontractor or supplier to perform relieves the Construction Professional from the legal obligations to perform under the warranty and guarantee provisions of the construction agreement.

- **General Warranty**: The construction agreements provide for a general warranty of all work called for in the Contract Documents. Specifically, correction *of defective work executed under the plans and specifications or supplying of omitted work whether or not covered by warranty or a subcontractor or supplier, remains the primary, direct responsibility of the Construction Professional.*

MFC

This general warranty remains in effect *until the expiration of the statute of limitations covering the work*, which is six years.

- **One-Year Correction Period**: This is a more useful provision of the construction agreements that call for correction of any defects (except those caused by Owner neglect or a design defect). Generally defects related to construction/installation occur within the first year and enforcement is facilitated by the continuation of the Performance Bond on the Construction Professional.

- **Extended Warranties on Equipment and Systems**: When the specifications require extended guarantees on selected items (e.g., five-year warranty on water cooler compressor), the construction agreements also provide pro- visions for direct enforcement by the Owner/Using Agency.

- **Warranty Bonds**: For roof and wall systems, the Construction Professional provides a Five-Year Roof and Wall Bond at Material Completion. This bond is backed by a surety company and provides a form of an insurance policy to provide funds for repairs in the event the Construction Professional fails to perform (or goes out of business). The bond specifies the building will be free of leaks. The surety company would be required to engage a replacement contractor, if necessary, to satisfy the obligations under the bond. Bonds are more effective than regular warranties or guarantees as they provide a more secure financial resource to correct the work. Bonds may be required on other systems but roof and wall are most common. Again, design errors and Owner/Agency abuse will negate or reduce the remedies under these bonds.

Although there will always be some contractors and subcontractors who are uncooperative and unresponsive to warranty items, most Construction Professionals realize the importance of maintaining a good working relationship with the State and with the surety companies (who are copied on all reports of complaints and claims).

Since more construction agreements are awarded on the QBS (Quality-Based Selection) criteria, this is another incentive for Construction Professionals to maintain a responsible reputation for warranty response.

C2. Filing and Processing a Construction-Related Complaint

MFC

At occupancy, the Owner/Using Agency should designate a contact person or office to coordinate the filing, tracking, and resolution of all construction-related complaints. *Complaint* is a term used to describe a warranty defect or omitted work from the construction project. In the case of GSFIC- managed projects, this agency contact person would be the one to communicate complaints to the GSFIC Construction Division for resolution. For agency-managed projects, a similar procedure is recommended specifying the person/office responsible for communications with the Construction Professional. The paragraphs below describe how to file a construction-related complaint with the GSFIC Construction Division and the actions that follow.

At Material Completion, the Owner/Using Agency is provided a Final Punchlist listing noted deficiencies in the work. The Construction Professional is required to complete these items in thirty days or less. Certain items may be listed on a second list entitled *Permitted Incomplete Work*, which will require longer time to correct. The Owner/Using Agency should be familiar with items on both of these lists to ensure that they do not report these as additional complaints. New complaint items discovered after Material Completion are not added to the Construction Professional's punchlist but are listed on a separate *register of complaints* and managed accordingly.

When a defect or omitted work item is discovered, the Owner/Using Agency's designated coordinator should perform a quick review to verify the item as construction related and to gain additional descriptive information. The agency coordinator then contacts the GSFIC Construction Division's Quality Assurance Department by E-mail. A good description of the complaint including digital pictures will expedite the process. Determining *responsibility* among the Construction Professional's subcontractors and suppliers many times delays resolution; therefore, supply adequate detail as warranted. The Quality Assurance Department then assigns a complaint number and begins the process for corrections. The resolution process involves several steps as follows:

1. The Quality Assurance section quickly reviews complaint and contractual references in plans and specifications and prepares a letter to the Construction Professional with copies to the Design Professional and Using Agency's contact person. The letter places a demand on the Construction Professional to correct the deficiency within a specified period of days.

2. If the Construction Professional agrees, the corrective action will proceed. The Owner/Using Agency is asked to report if the item is not corrected satisfactorily. The Quality Assurance Department will also follow-up.

3. If the Construction Professional denies responsibility, the Quality Assurance section then must seek advice from the Design Professional. A demand is placed on the Design Professional to render a decision on whether the complaint is the result of:

   - Defective materials/equipment
   - Defective installation
   - Omitted work

   If it is not one of the above, the Construction Professional usually cannot be held responsible (exceptions are certain CM/GC and Design-Build agreements).

4. If the decision of the Design Professional confirms the complaint is the responsibility of the Construction Professional, then a new demand is placed on the Construction Professional for remedy. If this fails, the surety company holding the Performance Bond will be contacted and legal procedures will follow to enforce the provisions of the construction agreement, all coordinated by the GSFIC Quality Assurance Department. If it is in the best interests of the Owner/Using Agency to address the complaint without these delays, the GSFIC Construction Division, upon request, will make arrangements with a separate contractor or reimburse the Owner/Using Agency to complete the repairs, all while preserving a legal rights of recovery of all incurred costs.

5. If the decision of the Design Professional excuses the Construction Professional, the most likely causes of the complaint are design errors or omissions, program errors or omissions, or user neglect or abuse. The remedy for each of these will require additional funding and becomes a supplemental project (See *SCM Chapter 4.2[D]: Minor Modifications and Supplemental Projects*).

MFC

C3. Tracking Resolution of a Construction Complaint

The GSFIC Construction Division, Quality Assurance Department section tracks the resolution of all complaints using computer programs and direct communication with the Construction and Design Professionals. The GSFIC Contract Compliance Specialists who were responsible for the project also participate in the follow-up process with the project team. The Owner/Using Agency may contact the GSFIC Construction Division's Quality Assurance Department by e-mail to follow up with any complaint. Additionally, if the designated *time for response* by any party is not satisfactory, the Owner/Using Agency may also request a more expedited deadline and/or make arrangements with ~~the~~ GSFIC for alternate repair options.

C4. Filing a Warranty Complaint on Furniture, Fixtures or Equipment (FF&E)

The process to file a complaint on an item of Furniture, Fixtures or Equipment that was procured separately from the Construction Professional is similar to that for construction related complaints. If the GSFIC purchased the materials, the Owner/Using Agency should gather all product information available regarding the complaint item and contact the GSFIC Procurement Services department.[7] The GSFIC will then contact the appropriate vendor and coordinate resolution with the Owner/Using Agency. If the Owner/Using Agency issued the purchase order for the FF&E item, a similar process should be followed. On resolution of FF&E items, there are generally no recourses to surety companies, extended warranties beyond the customary one-year guarantee and the difficulty in addressing installation and labor costs. However, as with construction-related complaints, Owners have legal recourses if a product fails to perform as advertised and represented in the product brochures. Such recourses, however, are not routine and may involve up-front legal costs. On the other hand, if a vendor or product fails to uphold a warranty or guarantee, this can negatively affect qualification for future bidding opportunities with the State and thus provide that needed incentive to correct the reported deficiencies.

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C5. First-Year Inspection for Warranty Items

It is in the interest of the Owner/Using Agency to identify any remaining construction deficiencies during the first year of occupancy prior to issuance of final payments to the Construction Professional and expiration of the Performance Bonds. Although legal remedies remain after the first year, it is difficult and time-consuming to pursue, and the added issues of *Owner's care and maintenance* may contribute to complicate the process. Accordingly, it is strongly recommended that the Owner/Using Agency perform a *First-Year Inspection* approximately ten months following the date of Material Completion.

On GSFIC-managed projects, this is scheduled by the Quality Assurance Department and includes members of the original project team, if available. It is important for the Owner/Using Agency's staff to be prepared for this inspection and assist in the identification of any unresolved complaint items.

D. EMERGENCY SITUATIONS

Emergency situations related to the project may involve failure of a major system or physical damage, both of which would prohibit continued occupancy. It is important for the Owner/Using Agency to remember that failure of certain life safety systems could affect the safety of personnel and would mandate evacuation. This would include emergency lighting systems, sprinkler systems, and annunciation systems (e.g., Interruption of water service would render the sprinkler systems inoperable.). Any suspected structural defect or physical damage should also be kept under restricted access until an investigation can be made by an appropriate and qualified official. In most cases involving any emergency situation, the Department of Administrative Services (DOAS) Risk Management Division should be notified.

DOAS is responsible for administration of any claims and payments of any costs related to protection and preservation of State facilities and assets and works in conjunction with the GSFIC Construction Division on claims related to construction operations.

D1. Failure of Building Systems (Construction Related/ No Physical Damage)

In cases where a building's systems fail (electrical, HVAC, or similar failures) causing an immediate disruption to the Owner/Using Agency's occupancy and program operations, immediate emergency response is required and justified. The Owner/Using Agency should have prepared response plans incorporating in-house resources, local area contractors, and utility companies exclusive of any remedies through the Construction Professional. However, in such situations, the GSFIC Construction Division, DOAS Risk Management Division and the Construction Professional (either directly or through GSFIC) should be contacted to preserve rights of recovery of any damages or costs incurred. If the Construction Professional can and is willing to respond satisfactorily, this should be favorably considered by the Owner/Using Agency to preserve warranty rights and recovery of costs.

MFC

D2. Damage to Property and Equipment

Emergency situations resulting from physical damage to facilities and equipment mandate the same type of response as described above. If the situation was not a result of construction operations, obviously the Construction Professional is not responsible but can be a preferred resource for rapid repair and reconstruction. It is very important in these situations that the DOAS Risk Management office is contacted to assist and coordinate the repair activities. If the situation is the result of a construction-related complaint, both the GSFIC Construction Division and DOAS Risk Management Division will work closely with the Owner/Using Agency to develop a remedial work plan.

E. COMPLETION OF THE CONSTRUCTION AGREEMENT

There are several steps involved in the completion of the work of the Construction Professional. Depending on the complexity of the project, completion may take between one month to over a year. It is always in the Owner/Using Agency's interest to facilitate the completion of the Construction Professional to focus on the long-range continuing program operations of the agency.

At Material Completion, the Design Professional prepared the Final Punchlist, which included both Minor Items (to be completed in thirty days) and Permitted Incomplete Items (seasonal test and balance, maintenance contracts, and similar incomplete work). Completion of the Final Punchlist is a prerequisite to the Design Professional's issuance of the *Certificate of Final Completion*, which recommends final payments and begins the final process to close out the construction agreement.

E1. Interim Inspection for Punchlist Completion

Within thirty days of Material Completion, the Construction Professional should have completed all of the *Minor Items* and those *Permitted Incomplete Items* that are due during this period. The Construction Professional issues a *Notice of Readiness for Interim Inspection for Punchlist Completion* to the Design Professional and Owner/Using Agency after which the Design Professional performs the necessary inspections. It is very important that the Owner/Using Agency accompany and observe the inspections by the Design Professional to confirm acceptance. If the Owner/Using Agency discovers new deficiencies during this inspection, these cannot be added to the punchlist but should be filed as complaints (See *SCM Chapter 4.3 [C2]: Filing and Processing a Construction-Related Complaint*). After a successful Interim Inspection for Punchlist Completion, the Construction Professional prepares to vacate the premises except for the limited remaining work as described further herein. In the event the Construction Professional fails to correct all required items in the time stipulated, the GSFIC Construction Division will apply the remedies available in the construction agreement and work closely with the Owner/Using Agency to minimize disturbance to the programmed use of the facility.

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E2. Permitted Incomplete Work

Permitted Incomplete Work includes items that cannot be completed at Material Completion through no fault of the Construction Professional or items that are specified to occur in the months following occupancy. Examples of Permitted Incomplete Work items may include:

- Maintenance Service Agreements included in the construction agreement for the first year of operation (elevator/escalator, landscaping, and similar agreements)

- Seasonal Test and Balancing of the HVAC systems

In the event the Construction Professional fails to perform and complete these Permitted Incomplete Items as required and especially as applied to maintenance service agreements, the GSFIC Construction Division should be alerted and will apply the remedies available in the construction agreement to correct the deficiencies.

E3. Inspection for Final Completion

When all Permitted Incomplete Work has been completed, the Design Professional will perform a *Final Inspection* with the Construction Professional and Owner/Using Agency. Upon confirmation all work is complete; the Design Professional will issue a *Certificate of Final Completion*. This certificate is only issued when all work as called for in the Construction Documents is completed and includes not only physical work but Final Documents, certifications, submittals and any other requirements of the construction agreement. It is very important for the Owner/Using Agency to agree with the Design Professional in accepting this Final Certificate of Completion as final payments and other closing actions immediately follow.

F. FINAL PROJECT CLOSEOUT

Final Project Closeout is defined as the completion of all work covered under all contracts (Construction Professional, Design Professional, consultants, and any other contracts specific to the project), final payments to all contracts and other obligations, settlement of all claims and complaints, and disposition of any remaining funds in the project budget. The Owner/Using Agency should strive to close out the project quickly after acquiring the Final Certificate of Completion to complete this work and focus attention on new projects and continuing operations in the new facility. Additionally, on bond-funded projects, the GSFIC Finance Division requires all bond proceeds to be expended within five years from the date the bonds are sold.

F1. Final Payment to Construction Professional

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Refer to specific terms and conditions of final payment on the Construction Professional's contract agreement. On GSFIC agreements, at Material Completion, the Construction Professional could apply for 100 percent payment of the contract reduced by 200 percent of the valued amount of the items shown on the Design Professional's Final Punchlist (retainage). Final Payments for this retainage are made to the Construction Professional promptly after the receipt of the Certificate of Final Completion issued by the Design Professional.[9] The Owner/Using Agency further confirms accuracy of this certificate to include audit of payments, settlement of any claims (or receipt of bonds to discharge claims), and other administrative matters. The final disbursement is made payable jointly to the Construction Professional and the surety, and it is mailed to the surety.

F2. Final Payment to Design Professional

Final payments to the Design Professional are made when the Final Certificate of Completion has been issued and the Design Professional has completed all requirements of the Design Professional agreement including the furnishing of Record Documents, all additional services, reimbursables, and other contract requirements.

F3. Project Budget Closeout

When final payments are completed to the Construction Professional and Design Professional, effort should now concentrate on final financial closeout of the project and distribution of any remaining funds. Any remaining consultant contracts, special testing contracts, open procurement orders, or pending authorizations for reimbursement (GSFIC term is *Allotment Registers*) should be completed, paid, and closed.

On GSFIC-managed projects, the Owner/Using Agency will be notified if there are any remaining funds in the project account after all obligations are closed. If there are remaining funds from cash appropriations in the project account, the funds will be returned to the original source. Surplus bond funds will be used to retire debt unless the Owner/Using Agency requests these funds be redirected to another qualified project.

The Bond Proceeds Redirection Form is completed by the Owner/Using Agency and submitted to the GSFIC Construction Division to request this transfer.

> **Note:** *Operating costs including maintenance services, personnel services and other non-capital costs do not qualify for expense or reimbursement from bond funds.*

When the project account is at zero balance and all obligations completed, the project is officially closed out except for future actions that may be required to address warranty and guarantee matters.

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SECTION FOUR: OCCUPANCY

CHAPTER 4.4: Future Year Operations



After the first year in new facility, operations will become more routine. Staff are accustomed to their new facilities, adjustments have been made to perfect the delivery of programs and functions of the facility, and hopefully the *Project Implementation Phase* is finished with resolution of all construction-related issues. The project should be closed out with all project funds expended or redistributed.

MFC

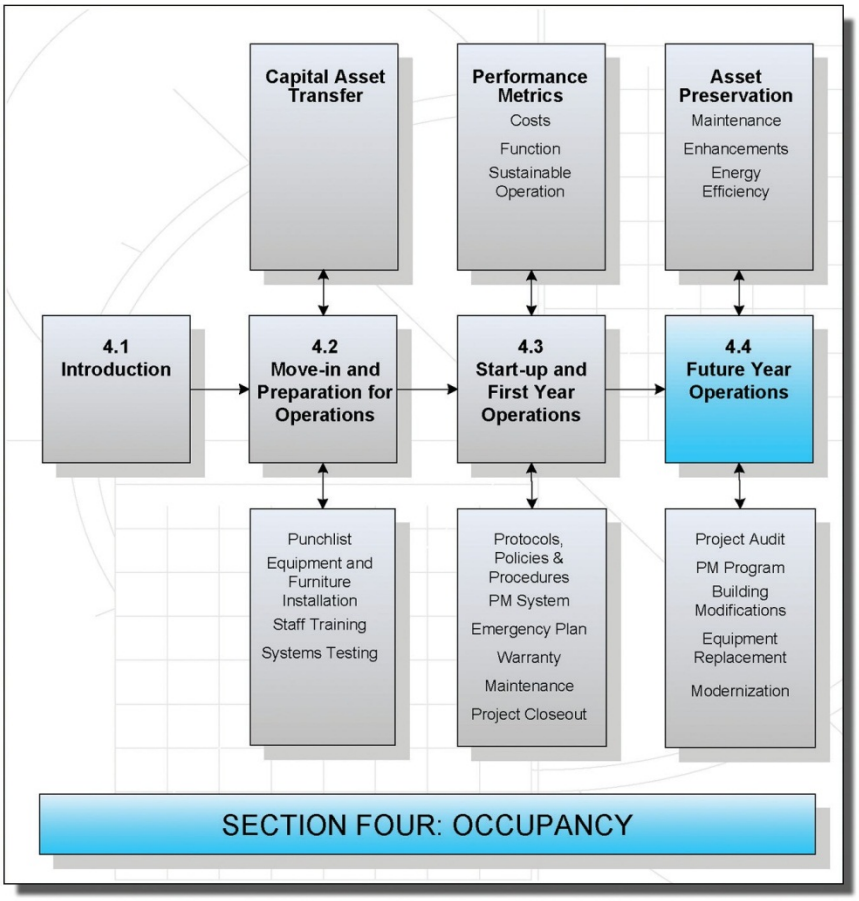


Figure 79: Occupancy Process Flow Diagram

As the Owner/Using Agency moves into the second year of operation, this is an excellent time to review how this project was envisioned and identified in the Facility Master Plan, the objectives set forth in the planning phase, and then how well this project is achieving these goals. This form of performance audit or review will be very valuable to the Owner/Using Agency as new projects and programs are planned.

This section will discuss what should be included in a performance audit as well as offering information and guidance for preservation of this asset as the facility ages. State facilities are designed to function for many years in excess of common commercial/private sector properties. Accordingly, there should be a dedicated focus to preventive maintenance, life cycle cost considerations, long range programs to replace major equipment and systems, and modernization and adaptation for new agency programs.

A. PERFORMANCE AUDIT AND ASSESSMENT

In strategic planning (See *SCM Chapter 2.2: Identification Phase*), experts agree to these four steps in effective management: *planning, implementing, measuring* and *adjusting*. Unfortunately, after the concrete sets, it is difficult to "adjust" a facility design. However, the concept of "measuring" or auditing the Owner/Using Agency's original plans can lead to better design concepts on future projects and appropriate adjustments to operational programs to maximize the use of the State's asset in this new project.

MFC

Considerable time was expended during the Project Development and Project Implementation Phases as this project was identified, programmed, and professionally designed and constructed. Hopefully, all actual programmatic and operational requirements were incorporated into the final product, but this is unlikely. The agency staff who worked on the Strategic Plans, Facility Master Plans, and specific programs for this project may no longer be with the agency and new administrators may have different views on how this project should work. The Design Professional and the agency staff may not have identified every functional space desired in the facility as identified by staff during this first year of operations. Lastly, there may be some element of the facility (space or system) that was correctly programmed and constructed to be operated in a certain manner, but the assigned facility staff is unaware of this and is not using this element of the facility as planned.

For all these reasons and more, it is prudent to allocate time after the first year of full operation and revisit the Project Development and Planning Phases with a twofold objective. First, the Owner/Using Agency would desire to confirm the facility is being operated to its fullest and planned potential. Second, areas of the project that did not fulfill the Owner/Using Agency's expectations need to be identified for corrective action and for advice to future agency planners.

A *Performance Audit and Assessment* could be divided into the following three focus areas:

- Owner/Using Agency planning and programming
- Design professional services
- Using agency occupancy and use

A1. Owner/Using Agency Planning and Programming

This part of a Performance Audit and Assessment involves just the Owner/Using Agency and reviews the documentations described in *SCM Section Two: Project Development*. During this phase, the Agency's Strategic Plan (for that time) and the agency's Facility Master Plan provided the basis and justification for constructing the project.

After the first year of actual operation conducting the assigned agency programs, it is helpful to compare and identify any substantive differences that may provide an explanation of why a certain feature of the project works or doesn't work. For example, a detention facility may have been programmed for minimum-security inmates, but when opened, it was used for medium-security inmates, requiring alternations to the facility before it was placed in service.

The results of this review of the Project Development Phase will reveal how well the Owner/Using Agency performed these predesign activities, what elements of programming may need improvement, and next, how well these documents were interpreted by the Design Professional and incorporated into the plans and specifications for construction.

A2. Design Professional Services

This part of the Performance Audit and Assessment involves the work of the Design Profession- al, but the Owner/Using Agency is not excused. The Design Professional uses the Owner/Using Agency's program document (See *SCM Chapter 2.3: Initial Planning Phase*) as the primary starting point for the project design. The Design Professional applies professional expertise in architecture, engineering, and experience in producing similar design documents. Finally, the Design Professional presents Schematic, Preliminary, and Final Design documents to the Owner/Using Agency for review and approval. If the design has deficiencies in respect to program function, space, and configuration, this would indicate a less than satisfactory effort and review by the Owner/Using Agency at these design milestones. It is easy to criticize the Design Professional for all the facility's design issues, but for constructive improvement, the project team is the more responsible party. It is beneficial for this review of the facility design to be conducted at the site with as many members of the original project team as possible. The Design Professional and project manager are essential participants, as is the facility operator.

MFC

During this onsite review and audit of the facility design, the facility operators can also point out suggested items of improvement in future designs, valuable information for the Owner/Using Agency to document for future upcoming projects.

Another element of the ~~a~~ Performance Audit and Assessment of the Design Professional is for contractual performance during the Project Implementation Phase. This information is readily available from the GSFIC Construction Division (for GSFIC projects) and would indicate the quality of the original Contract Documents, the number of change orders, requests for information (RFI's), and claims resulting from incorrect or incomplete design information. This information would also indicate the quality of the inspections performed by an analysis of the number of Notices of Non-Compliance and Warranty Complaints.

A3. Using Agency Occupancy and Use

This part of the Performance Audit and Assessment focuses on the facility operators and how they are using the project as compared to how the project was designed. Senior administrative managers of the Owner/Using Agency are best to review this element of the audit, but the original project manager and Design Professional should also be involved to provide their advice on how the project was designed. The results of this study will measure how effective the Project Development Phase was conducted and whether or not the facility operators are properly using the new project.

The results of this review will assist the Owner/Using Agency in planning future projects and address any administrative/managerial issues with the current operation.

B. MAINTENANCE AND OPERATIONS: PREVENTIVE MAINTENANCE PROGRAM AND RENEWAL OF MAINTENANCE SERVICE AGREEMENTS

Maintenance programs are more fully described in *SCM Chapter 4.3 [B]: Maintenance Program*. During the first year of operation, these programs, including a Preventive Maintenance program and procurement of selected Maintenance Service contracts, are designed to provide a reliable and productive facility. After the first year of operations, these programs should be reviewed, and adjustments made, to further enhance services and reduce costs.

B1. Audit of Preventive Maintenance Program

MFC

In reviewing the Preventive Maintenance program, the Owner/Using Agency should consider these questions:

- Is the PM system being used by the Maintenance and Operation's department?
- Are PM work orders being completed as scheduled, and are there spot checks and audits by senior department managers?
- Are all major equipment/system components requiring periodic inspection and service as recommended by the manufacturers entered into the PM system?
- Are there additional items of equipment, systems, interior finishes, and building components, and similar items, which should be added to the PM program?
- Have the frequency and type of Maintenance work orders been reviewed to ascertain whether additional items should be added to the PM program to reduce (break down) maintenance?
- Have there been significant delays in completing PM work orders due to lack of supplies and equipment? If so, the procurement and warehousing functions may require additional review and improvement.
- Have there been breakdowns of equipment that is under the PM program? If so, the quality of workmanship and service of the PM effort may be in question.

The answers to these and similar questions will provide the Owner/Using Agency with information on how to adjust and modify the Preventive Maintenance program after the first year of operations to provide improved performance in future years. In performing this audit, the Owner/ Using Agency should consider using a third party from another agency facility, an advisor from the GSFIC Construction Division, or perhaps a Commissioning Agent (a minimal scope of services and cost).

B2. Maintenance Service Agreements

During the first year of operations, there may have been Maintenance Service agreements incorporated within the construction agreement for such items as elevators, escalators, HVAC water treatment and landscaping. Generally, these agreements expire after one year, but may also have a renewal option with the Owner/Using Agency.

Before the end of this first year of operation, the Owner/Using Agency will need to carefully review these maintenance service agreements carried over from the construction agreement and decide whether or not they should be extended, rebid, or cancelled. In reviewing these agreements, the Owner/Using Agency may consider these factors:

- Is it more efficient to consolidate a service with a larger agency maintenance service agreement?
- Are there any savings to changing the terms and conditions of a service agreement? (i.e., eliminate 24/7 call back surcharge)

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- Is there a risk to award a new maintenance service agreement to a company other than the original installer? (e.g., landscaping, elevator/escalator, or similar service agreements)
- Is the service of the existing maintenance service contractor acceptable?
- Can this service be performed effectively by in-house maintenance personnel?

As to other maintenance service agreements initiated by the Owner/Using Agency at the start-up of operations, these same factors should be considered in reviewing options for renewal or rebidding. Lastly, the Owner/Using Agency should once again review other maintenance and operations tasks to identify any new areas where a maintenance service agreement may be desired.

C. BUILDING MODIFICATIONS/EXPANSIONS

In *SCM Chapter 4.2 [D]: Minor Modifications and Supplemental Projects*, minor modifications and supplemental projects were reviewed with the focus on those changes that were needed to carry out program functions but were not adequately addressed in the original facility planning or design. In the future years of operation, program changes directed by new operators and changes to the Agency Strategic Plan may result in more frequent consideration of both minor and more extensive facility modifications and renovations.

In planning for such changes to the existing facility design and construction, it is important for the Owner/Using Agency to follow many of the same planning steps which are employed on new projects (See *SCM Chapter 2.3: Initial Planning Phase*).

The objective is to preserve the value of the facility asset while modifying or expanding the facility to meet current agency program needs. Suggested guidelines to achieve this objective may include:

- Engage the original Design Professional to assist with supplemental drawings and specifications to ensure all codes and requirements are met as well as preserve architectural/engineering responsibility. The original Design Professional will generally have better understanding of how to modify the facility based upon its knowledge and familiarity with the existing structure. An alternate or new Design Professional could also be engaged and utilize the Record Documents for this information.

- Ensure products and workmanship match or exceed the original specifications.

- Ensure work is performed by competent personnel of the agency or by a licensed contractor. Major changes should always be performed by a licensed contractor and not facility maintenance/operations staff.

- Ensure major building systems (environmental, energy, life safety, and similar systems) are not affected by these changes. If so, these system designers and installers should be engaged as well as the Design Professional to over- see or perform the changes. *Any major modification may require the entire facility be brought up to current code standards especially in respect to Life Safety (Fire) Codes.*

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- Documentation of changes should be made and attached to the Project Records (See *SCM Chapter 4.2 [F]: Project Records*).

When developing budgets for renovations and supplemental construction, a contingency of at least 20 percent is recommended for unforeseen factors and requirements in modifying existing structures.

When changes or modifications are complete, ensure the Certificate of Occupancy remains valid or secure a new certificate. Ensure DOAS Risk Management Division is notified of modifications to the facility (State asset) and any other regulatory requirement is properly addressed.

In addition to the focus on modifying a facility to meet new programmatic and operational functions, consideration should also be given to the appearance and aesthetic design of the original project. A carefully planned and executed renovation project will result in a facility where it ~~is~~ may look more "new" than simply expanded.

D. MAJOR REPAIRS AND EQUIPMENT REPLACEMENT

Following the principles of preventive maintenance, every piece of operational equipment and building systems/finishes has an estimated service life. This predicted service life can be extended by good maintenance and operating practices or shortened by the opposite.

Owner/Using Agency operating budgets generally do not address the long-term cost of major repairs and equipment replacement, yet these are legitimate expenses associated with the long term operation of any facility. The Owner/Using Agency should prepare long-range plans for these expenses and consider plans such as:

- A Facilities Condition Assessment (FCA) should be performed every 5 years to assess the condition of the major building systems and identify needed major repairs or equipment replacements.
- Establish a multi-year program of major repair and equipment replacement with funding appropriated to the operating budgets.
- Consolidate major repairs and equipment replacement into a single Capital Outlay request for consideration for cash or bond funding. *A facility's request may be combined with other Owner/Using Agency requests for a consolidated Capital Outlay Budget request.*
- Incorporate major repairs and equipment replacement into a proposed Capital Outlay request for a major facility renovation or expansion.

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Although it is a costly venture to replace major equipment components and perform major repairs (e.g., roof replacement) in an older facility, the Owner/Using Agency should also consider the potential cost of repairs and disruption to operations by not aggressively pursuing these projects on a planned and scheduled basis; damages caused by leaking roofs and wasted energy consumed by outdated and defective equipment also has a high price tag.

E. MODERNIZATION AND UPGRADES

As stated throughout Section Four of the State Construction Manual, as stewards of the State's assets, the Owner/Using Agency should strive to extend the life and service of the facility for many future years. Unlike most private/commercial properties, the State's return on investment is measured in decades rather than years.

The Owner/Using Agency can achieve these goals with good maintenance programs and by considering periodic capital improvements to modernize and upgrade the facilities. With a strong sup- porting infrastructure and good location, these older facilities may offer many advantages to a new facility in a different location. Additionally, an older facility next to a brand new facility may also suggest need and justification to update and modernize.

Modernization and Upgrades is a broad subject, but for the Owner/Using Agency, these factors and guidelines may be helpful in consideration of such future supplemental projects:

- Consider changing color schemes in both interior and exterior spaces. The cost of painting is generally already addressed in maintenance budgets; it costs no more to change colors. The original Design Professional generally will offer interior design advice for very reasonable costs on their previous projects.

- Advances in lighting technology have greatly reduced energy consumption. New lighting options may also be used to enhance the interior and exterior appearance and attractiveness of a facility. Again, the original Design Professional or electrical engineer may offer such assistive services at reasonable rates for their previous projects.

- Computer-based energy management systems and security/CCTV/access systems, although expensive, offer significant savings in operational and labor costs. With improved efficiencies, existing staff can be reassigned to perform other more productive services. Savings in utility consumption may be applied (with budget approval) to other operational areas.

- Changes to exterior landscaping and hardscapes greatly impact the appearance of the overall facility. Although professional advice is recommended for developing new landscape designs, the actual work can be accomplished over a longer period of time by agency staff or a service contractor as part of normal maintenance and replacement of plantings. Picnic areas and seating areas with lighting can also dramatically improve the environment surrounding the older facility.

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- Restroom facilities will require repairs and replacement of fixtures, counter tops, and mirrors as part of normal maintenance. Upgrading these fixtures and finishes with more modern designs as part of a regular maintenance procedure can achieve the desired results.

- Entrance and assembly areas such as reception rooms, main hallways, break rooms, and employee cafeterias are also prime locations for new color schemes, floor covering, ceilings, artwork, and interior landscaping.

- Furniture and office equipment is another area where upgrades, change in style/color, and accessories can greatly impact the appearance and work environment inside a facility. Although mixing new with old is not recommended, a scheduled plan of replacement of older equipment in groups or areas may achieve this goal over time.

In conclusion, just because a facility is older does not justify diminishment of its value. Property and real estate, unlike other assets, will appreciate in value if properly maintained and periodically modernized. As stewards of the State's asset, it remains the primary responsibility of the Owner/Using Agency to care for these facilities to provide many future years of successful operation and service.

Agency

A general term used to refer to any office, department, division, bureau, board, commission, authority, or other unit of government.

Application for Payment

The construction professional (Design-Bid-Build) CM/GC (Construction Management) or design-build contractor (Design-Build) periodically (usually monthly) submits an application for payment to the design professional (Design-Bid-Build or Construction Management) or executive administrator (Design-Build) ten days before each payment becomes due. Application for payment shall be broken down by CSI Category and for the final certification of cost by CSI description and Capital Asset Category (see applicable contracts). The application for payment includes attachments of backup material including, but not limited to, receipts or other vouchers showing payments for material and labor, including payments previously made to trade contractors.

Applications for Basic Pre-Qualification (Special Inspections/ Inspections/Geotechnical Services)

Special inspection, material testing, and geotechnical entities who wish to be considered for GSFIC-administered state projects submit to this application process for basic pre-qualification or long-term eligibility for consideration of services. The application must be submitted by firms that are interested in being considered for services. Applications received will be reviewed by GSFIC for determination of the applicant's eligibility, based on the minimum requirements met by the applicant. Eligible applicants will be placed into a pool of "pre-qualified" service providers for a period of two (2) years, contingent on the firm's continued eligibility.

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Benchmarking

The technique of comparing an agency's plan, program, or performance against others engaged in similar activity.

Best Value Selection

The owner uses weighted criteria to evaluate a combination of *total cost* and *other factors* in the selection of a provider of construction-related services. An actual offer of a contract is subject to negotiation between owner and proposer.

Bidding Documents

Bidding documents are in addition to the construction documents and are used to describe the rules and procedures to be followed by prospective bidders. Bidding documents include: (1) Invitation to Bid, (2) Instructions to Bidders, (3) information available to bidders, (4) bid forms and attachments, and (5) Bid Security Form.

Board Of Regents (BOR)

The BOR typically serves as the owner for construction projects of its thirty-five member institutions, which are funded with non-public dollars (e.g., private donor monies, grants, and similar funding). The University System of Georgia's Board of Regents was created in 1931 as a part of a reorganization of Georgia's state government. The board oversees thirty-five colleges and universities: four research universities, two regional universities, thirteen state universities, seven state colleges, and nine two-year colleges.

Building Commissioning	Commissioning is a planned, collaborative, and systematic process of review and testing conducted to confirm that a structure and its subsystems perform as designed and as expected by the building occupant. In most cases, this procedure takes place during the entire project, from planning and predesign through final acceptance of the building. Commissioning has been shown to improve building quality in thousands of major projects nationwide.
Capital Outlay Budget System (COBS)	An interactive system for submission of the next fiscal year's agency funding requests. The Office of Planning and Budget COBS program contains templates, worksheets, and user guides to assist agencies with project development.
Capital Outlay Project	The broad category of expenditures related to the acquisition, construction, development, extension, enlargement, or improvement of land, waters, property, highways, roads, buildings, structures, equipment, or facilities.
Capital Project Funding Request Worksheet	A static form that helps agencies prepare information for capital requests that will be submitted to the Capital Outlay Budget System (COBS) of the Office of Planning and Budget by entering the information gathered into the Total Cost of Ownership Worksheet.
Certificate of Final Completion	A certificate issued when all work as called for in the Construction Documents is completed, including not only physical work but Final Documents, certifications, submittals and any other requirements of the construction agreement.
Certificate of Occupancy	A document issued by the State Fire Marshall that certifies the facility complies with the Life Safety Code.
Changes in the Work	It is normal for changes in the Contract Documents to occur during the Construction Phase of a project. The change could be the result of an unforeseeable job site condition, an error in the Contract Documents, a necessary revision to the building code, or a new requirement of the owner/using agency. Approval of the owner/using agency is required prior to any change of the work.
Class II Equipment	Equipment that requires some amount of permanent or semi-permanent connection to the structure.
Client Agency	The state agency that requests the appropriation funding for the project and is responsible for its proper completion.

COBS Agency Coordinator

An agency employee who has unique duties and access to several special features and functions within COBS, and is the only individual within an agency who can submit projects to the Office of Planning and Budget.

Commissioning Agent

An independently contracted third-party consultant who is contracted directly to the owner provides the commissioning services. *Best practice* would suggest that the Building Commissioning consultant provide peer reviews of the systems and components being prepared during schematic design and constructability reviews of design development and Construction Documents.

Competitive Bidding or "Low Bid"

Competitive bidding is at the heart of the traditional Design-Bid-Build construction professional selection, and is routinely used for selecting FF&E vendors and other firms when the exact specifications and/or scope are defined. The Owner makes award to the lowest total cost, bid by a responsible and responsive bidding firm to provide construction-related services.

Component Change Order (CCO)

A Component Change Order (CCO) is a change order authorizing the CM/GC (Construction Management) or the design-build contractor (Design-Build) to proceed to construct an element of the project for which the design professional (Construction Management) or the executive administrator (Design-Build) agree to prepare or segregate construction documents as a discrete package to permit early procurement and commencement of specific construction elements. In other words, the CCO creates a Guaranteed Maximum Price (GMP) for a portion of the total project only.

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Constructability & Design Review

Reviews undertaken to make certain that the final design documents are complete, coordinated, and constructible so as to control costs by minimizing the likelihood of unwanted change orders during construction.

Construction Administration Services

Duties that consist of both office and field services necessary for the design professional to administer the requirements of the Contract Documents, interpret and clarify the Contract Documents, and require compliance with the Contract Documents by the construction professional (Design-Bid-Build), CM/GC (Construction Management), or design-build contractor (Design-Build).

GSFIC Construction Division

The Construction Division performs Project Administration Services to agencies for capital projects funded in whole or part from the sale of bonds. These services include initial planning, programming, design, construction, equipment and furnishings procurement, and warranty administration. The division's management of projects involves receiving bids for the selection of a contractor to construct the facility; monitoring the progress of the projects; and providing the accounting services associated with disbursements of payments.

Construction Documents

The primary components of the construction documents are the contract forms, conditions of the contract, bidding documents, specifications, and drawings. Contract forms and the general requirements are typically included modified only by Supplementary General Requirements.

Contract Documents

The Contract Documents may consist of, but are not limited to, the following documents: (1) the contract, (2) general and supplementary requirements to the contract, (3) bidding documents (4) specifications, (5) working drawings.

Construction Management Project Delivery Method (CM/GC)

A project delivery method which entails a commitment by the construction professional to deliver the project within a Guaranteed Maximum Price (GMP). The construction manager acts as consultant to the owner in the development and design phases, but as the equivalent of a general contractor during the construction phase.

Construction Professional

The entity with a primary/contractual responsibility for completing the physical construction of the project in accordance with the plans and specifications. A General Contractor, Construction Manager/General Contractor (CM/GC), or Design-Builder are all referred to as a "Construction Professional."

Construction Progress Meetings

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Biweekly Construction Progress Meetings with the owner/using agency, owner's representative as program manager, and the design professional(s) representatives (Design-Bid-build or Construction Management), or the executive administrator and owner/using agency (Design-Build). This meeting serves to communicate project progress and to discuss and resolve or develop a plan to resolve outstanding questions or issues affecting the timely completion of the work.

Construction Team

A general term for the party responsible for completing the physical construction of the project in accordance with the plans and specifications. This team includes the myriad of subcontractors involved in the projects.

Construction-Related Complaint

Warranty defects or omitted work from the construction project are submitted to an agency designee who communicates complaints to the GSFIC Construction Division for resolution. For agency-managed projects, a similar procedure is recommended specifying the person/office responsible for communications with the construction professional.

Consultant Assistance

Consultant assistance is a service-delivery process that continues throughout all phases of the design and construction procurement process according to the scope of work and schedule of services. Consultant assistance usually concludes at the completion of contract closeout and includes services provided by geotechnical engineers, land surveyors, testing agencies, special inspection and building commissioning consultants, specialty consultants, the owner's representative as program manager, or executive administrator.

Cost Containment

The process of cost estimating, constructability evaluations and recommendations, monitoring and commenting on the project's scope and quality as both relate to the Project Construction Budget, which includes a Construction Cost Estimate, setting forth in detail the estimate of construction cost, including all actual costs and contingencies and fees, for the construction of the entire project and each component thereof.

Cost of the Work

The cost of the work is defined in great detail in the Design-Build and CM/GC Construction Contracts and is intended to include all costs of construction from the trade contractors (and any self-performed work by the design-build contractor [Design-Build] or CM/GC [Construction Management] if the owner/using agency has provided written approval). The cost of the work might be in the range of 85 percent to 90 percent of the total value of the GMP, depending upon the specific nature of the project. The cost of the work is the largest component of the GMP.

Prior to submission of the proposal, the owner/using agency, executive administrator (Design-Build) or Program Manager (Construction Management), design-build contractor (Design-Build) or CM/GC (Construction Management) should discuss and agree upon the format of the proposed estimate in order to facilitate a better and faster review. The design-build contractor (Design-Build) or CM/GC (Construction Management)is then expected to produce the detailed information necessary to justify the cost of the work. The estimate should be presented in sufficient detail so that the owner/using agency and executive administrator or Program Manager (Construction Management) can fully review, understand, and confirm the estimate.

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Design Development Documents

Based on the approved Schematic Submittal, the design professional will expand and refine the major elements of the *Design Development Documents.* The major elements of the Design Development Documents are the drawings, outline specifications, and possible illustrations, models, or renderings. Design Development Documents are also required to be submitted for Initial Code Compliance Review to the State Fire Marshal's Office.

Design Development Drawings

Design Development Drawings include the following: (1) site plan, (2) building plans, (3) floor plans, (4) sections, (5) elevations, (6) typical construction details, (7) equipment layouts, and (8) other drawings needed to describe the project.

Design Phase Services

The design professional's design phase basic service usually includes all normal and customary professional services of the design professional and its design team (architectural, civil, structural, mechanical, plumbing, and fire protection consultants) required in connection with the Schematic Design, Design Development, Construction Documents, and Bid and Award Services.

Design Professional

The entity with a primary/contractual responsibility for translating the project program into the drawings and specifications necessary for the completion of the project and with professional responsibility for the design.

Design Team

A general term for the party responsible for translating the project program requirements into the drawings and specifications necessary for completion of the project.

Design-Bid-Build Project Delivery Method (DBB)

A project delivery method in which the agency or owner holds separate contracts with separate entities for the design and construction of a project. Design-bid-build is the traditional method for project delivery. The majority of the procedures, forms, certifications, and other contract documentation have been developed under the DBB procurement system.

Design-Build Project Delivery Method (DB)

The Design-Build project delivery method has been the state's least utilized construction delivery option. The overriding concern when using this process is that most of the traditional contractual relationships between the owner/using agency and the design professional that have protected the owner/using agency's interest no longer exist. The owner/using agency must contract with either GSFIC or an independent professional services firm as an executive administrator to assist the owner/using agency in the management and monitoring of the project. The Design-Build entity that executes the Design-Build contract is the single source of responsibility for the owner/using agency and must be capable of financially and legally entering into a contract that can guarantee completion of the work.

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Design-Build Contractor

The design-build contractor is under contract to provide both design and construction services to initiate, plan, design, construct, and turn over a completed facility to the owner/using agency for occupancy in a "turnkey" fashion. The design-build contractor holds all design professional, trade contractor, and trade supplier contracts. The design-build contractor, as the sole source responsible for all design and construction services, has a fiduciary role and responsibility to the owner/using agency.

Dispute Resolution

Methods to help resolve claims that the construction professional may make for additional costs or time. The following three methods are suggested for dispute resolution: (1) negotiations, (2) Dispute Resolution Board, and (3) mediation.

Dispute Resolution Board (Design-Build)

Ideally, a *Dispute Resolution Board*, consisting of the senior designates or administrators from all stakeholder agencies, is established early in the project to manage disputes. Often, this resolution board includes a neutral member, typically from the industry but is not closely associated with any stakeholder agency, to help facilitate the meetings. In the event that the project staff cannot promptly resolve the dispute, they shall refer the dispute to the resolution board, who shall meet and attempt to resolve the claim

Emergency Response Plan

This plan outlines the following: (1) names, locations, and phone numbers of emergency services, (2) names, locations, and phone numbers of emergency medical treatment facilities, (3) a listing of project team emergency contacts (office, home and cell), and (4) location for posting signage for the Emergency Response Plan.

Executive Administrator

The owner's representative as executive administrator represents the owner (GSFIC and/or agency) throughout all phases of the project, including planning, programming, design, and construction of the project. The owner's representative as executive administrator will provide its best expertise and resources. Services are provided in the following three phases: (1) Phase One shall consist of the review and augmentation of the existing Final Project Definition documents, and coordinating the development of the program from which the design professional will design the project, (2) Phase Two shall consist of the periodic review of the documents prepared by the design professional on behalf of the design-build contractor to make certain that the construction documents are proper and correct developments of the using agency's program, and (3) Phase Three shall consist of monitoring the construction of the project to make certain that the work is installed in accordance with the requirements of the construction documents; in addition, make certain that a Guaranteed Maximum Price (GMP) is established and the costs are accurate, reasonable, and within the GMP.

Executive Summary (Project Development)

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A narrative included in the Project Development file that provides an *executive review* of the essential facts of the project and should be written in concise, easy to understand, non-technical language. The purpose of an executive summary is to provide the essential arguments for approval of the project in the fewest words possible. Usually, the executive summary should be no more than one page in length. Generally, unless there is a question, key decision makers will only read the executive summary, and it should be written accordingly.

Facility Protocols and Guidelines

Simple to understand protocols for all engaged agency staff on topics such as emergency operating procedures, office and facility guidelines, reporting maintenance deficiencies, and requesting modifications to facility.

False Start

In the event the construction professional or design-build contractor issues a *notice of readiness* prematurely, the issuance is deemed to be a *false start*. The construction professional or design-build contractor is liable for the damage resulting from the false start, including, but not limited to, the salary, professional fees, and travel and living expenses of the person or parties inconvenienced by the false start.

Fee Proposal (Consultants)

The fee proposal serves as a starting point for negotiation and discussion. In the purely qualifications-based selection process, only the fee proposal of the firm deemed best-qualified after final evaluation is opened by the Selection Manager.

Final Completion

Completion of all remaining work that includes the "permitted incomplete work" items and closeout of all contract administrative items (change orders, claims, payments, bonds, and other contract administrative items as applicable). This phase typically will run six to fourteen months from the date of Material Completion.

Final Inspection

With the construction professional, the design professional performs the Final Inspection confirming that all work is complete. Once confirmed, the design professional issues a Certificate of Final Completion.

Final Project Closeout

The completion of all work covered under all contracts (construction professional, design professional, consultants, and any other contracts specific to the project), final payments to all contracts and other obligations, settlement of all claims and complaints, and disposition of any remaining funds in the project budget. When all funds are disbursed from the project account and all contracts and other procurement documents completed and closed, the project is fully closed out.

Final Project Definition

The phase in which activities result in the development and publication of approved project requirements that have been coordinated with the project funding allocations and meet the using agency's strategic plans, goals, and objectives. The Final Project Definition phase should occur when the project is funded for design and potential construction. The objective of the Final Project Definition activities is to provide a process that results in the identification of the comprehensive details of a proposed project, which supports agency approval to proceed into design and construction.

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Final Punch List

A list of minor construction items that need to be completed before the final completion of a project.

GSFIC Financing and Investment Division

The Financing and Investment Division performs all services related to the planning, scheduling, advertising, selling and delivery of general obligation bonds. The Division also performs services directed by the Commission and the issuer regarding guaranteed revenue of debt, manages all other state debt, and handles related financial advisory matters. Additionally, responsibilities include the investment and accounting of all proceeds derived from issuance of general obligation bonds or from other amounts appropriated by the Legislature for capital outlay purposes. Investment earnings are used to retire State General Obligation through open market purchases and/or through initiating bond calls.

First-Year Inspection

An inspection approximately ten months following the Date of Material Completion (scheduled by the Quality-Assurance section on GSFIC-managed projects) including original project team members, if available, identifying any remaining construction deficiencies during the first year of occupancy prior to issuance of final payments to the construction professional and expiration of the Performance Bonds.

Five-Year Roof and Wall Bond

A bond the construction professional provides at Material Completion. This bond is backed by a surety company and provides a form of an insurance policy to provide funds for repairs in the event the construction professional fails to perform (or goes out of business). The bond specifics the building will be free of leaks. The surety company would be required to engage a replacement contractor, if necessary, to satisfy the obligations under the bond.

Funding Request Phase

The Project Development phase that requires reconfirmation of all previous project documentation and information, addition of new information and details about the project, and other factors that support the objectives of the agency's strategic plan and merits submission of the project to the Office of Planning and Budget (OPB) and eventually to the State Legislature

Furniture, Fixtures and Equipment (FF&E)

Furniture, fixtures or other equipment that are have no permanent connection to the structure of a building or utilities.

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Georgia Environmental Protection Act

OCGA 12-16-1 requires that all state agencies and activities prepare an Environmental Impact Report as part of the decision-making process for all activities that may have an impact on the environment. If required, it is performed during schematic/preliminary design.

Georgia Procurement Registry

A free web-based advertising system is offered by DOAS' State Purchasing for publicizing government contract opportunities. State and local governments can maximize competition by posting contract opportunities on the Georgia Procurement Registry. The registry's popularity among its users ensures that contract opportunities are quickly and widely disseminated to the vendor community.

Geotechnical Engineer's Report

The design professional shall obtain a report from the geotechnical engineer on subsurface conditions that includes a test boring program, seismic exploration, laboratory testing program, and electrical resistance testing. The geotechnical engineer shall provide a Stage One Statement regarding the existing sub-surface conditions before design and a Stage Two Statement regarding the adequacy of the completed design relative to the subsurface conditions.

GMP Change Order	A change order that establishes the guaranteed maximum price to perform the construction of the entire project in accordance with the owner/using agency's program of requirements as described in the construction documents and to achieve a final completion by a date specified in the change order. Ideally, the GMP Change Order is submitted to the owner/using agency when the entire project has reached a stage of completion (ideally at 80 percent), but not later than thirty (30) days after the completion of the Contract Documents. In the Construction Management delivery method, the CM/GC submits the change order to the CM/GC Construction Contract through the design professional. In the Design-Build delivery method, the design-build contractor submits the change order to the Design-Build Construction Contract to the executive administrator and the owner/using agency.
Gross Square Footage	The total *enclosed* floor area of a building including multiple stories, mezzanines, and bridges that is determined by multiplying the net square footage by a grossing factor.
GSFIC	The state agency that is responsible for all services related to the acquisition of public debt and for monitoring and managing all construction and related matters resulting from the issuance of public debt.
Guaranteed Maximum Price (GMP) MFC	The Guaranteed Maximum Price (GMP) is the maximum amount that the owner/using agency is obligated to pay the CM/GC (Construction Management delivery method) or the design-build contractor (Design-Build delivery method) for the construction of the project pursuant to a defined scope of work and schedule.
Identification Phase	The Project Development phase when critical thinking and planning questions are engaged to refine and focus project objectives and possible solutions before proceeding into initial planning.
Information Technology	Includes all matters concerned with the furtherance of computer science and technology and with the design, development, installation, and implementation of information systems and applications. Information technology architecture is an integrated framework for acquiring and evolving IT to achieve strategic goals.
Initial Planning Phase	The Project Development phase when the conceptual definitions regarding the project's general type, size, location, cost, and schedule are further developed, documented, and approved prior to developing information to support the formal requests for funding.

Kick-Off Meeting

Scheduled and hosted by the design professional (Design-Bid-Build, CM/GC) or design-build contractor (Design-Build), the kick-off meeting host introduces the project team participants and the general project parameters are reviewed. The host should produce and distribute minutes of the meeting.

Land Survey

The land survey must indicate: (1) the grades and lines of streets, pavements, adjoining properties, contours of the site; and (2) complete information as to sewer, water, gas, electricity service, telephone service, and any other utilities or services on the site. The survey may include existing vegetation at the option of the agency. The plat of survey of the site conditions will bear the signature, seal, and registration number of the person who performed the survey and contain certification that the plat is a correct and true representation of the condition of the property and similar certifications.

Land Surveying

The design professional shall obtain a boundary line survey from the owner that defines all easements, right of way covenants, and US government contracts that relate to the land in the plat of the boundary line survey. The survey must indicate: (1) the grades and lines of streets, pavements, adjoining properties, contours of the site; and (2) complete information as to sewer, water, gas, electricity service, telephone service, and any other utilities or services on the site. The survey may include existing vegetation at the option of the agency. The plat of survey of the site conditions will bear the signature, seal, and registration number of the person who performed the survey and contain certification that the plat is a correct and true representation of the condition of the property and similar certifications.

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Management Plan

A plan that should be the first activity initiated by the CM/GC/design-build contractor in the Pre-Construction phase and should be completed within the first two weeks after receiving a Notice to Proceed. The purpose of this plan is for the CM/GC/design-build contractor to identify exactly which services are to be required by the owner/using agency and design professional and how and when the CM/GC/design-build contractor will deliver those services. These services might include, but are not limited to the following: (1) cost estimating, (2) Value Engineering, (3) constructability review & design reviews, (4) scheduling, (5) recommendations as to phasing of the design, (6) establishing a Quality Control Plan, and (7) establishing a Safety Management Plan.

Master Planning

Provides detailed direction and guidelines for the physical development of state facilities to support the agency's mission and strategic plan. The Master Planning process, in addition to a comprehensive inventory of existing facilities, utilizes growth projections from the using agency's Strategic Plan to make certain the agency has the physical resources and capacity to handle increased growth. Additionally, the plan addresses development of new programs and anticipated growth in the agency's disciplines and responsibilities.

Material Completion

When the facility or project is completely functional and ready for occupancy and use by the agency. Some minor items and permitted incomplete work that do not affect the functionality of the building may still need to be addressed at material completion.

The most important milestone in the Project Implementation phase when the using agency assumes control, security, and custody of the project. The date of Material Completion is established in the Contract Documents and in the case of CM/GC and Design Build delivery methods, reconfirmed with execution of the GMP Change Order. To achieve Material Completion, the following conditions must be satisfied: (1) The work must be complete; (2) The design professional must inspect and certify the facility for occupancy; (3) Inspections and certifications by other regulatory agencies must be obtained; and (4) The using agency must have executed documents for the acceptance of the project.

Material Completion Checklist

A checklist prepared by the GSFIC to assist the construction professional with preparing for Material Completion.

Material Suppliers

Those entities that supply material and equipment and are employed by the construction professional.

Mediation

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Mediation is a process of negotiations whereby the mediator(s) try to resolve differences, often with both parties having to moderate their positions on the issues in question. Although mediation is not binding, it is a very effective way of resolving a dispute short of litigation.

Minor Items and Permitted Incomplete Work

A *minor item* is a portion or element of the work that satisfies the following conditions: (1) The minor item can be totally complete within 30 days; (2) The minor item can be completed while the owner/using agency occupies the work without impeding or interfering with either the owner/using agency's use and occupation of the work or the contractor's ability to complete the Minor Item; and (3) The minor item will not interfere with the complete use and enjoyment of the project by the owner/using agency. *Permitted incomplete work* is defined as work that is incomplete through no fault of the contractor, including, but not limited to, seasonal test and balance, seasonal landscaping, or failure of separate contractors to complete their work. First year maintenance agreements (elevator, escalator, landscape, HVAC chemical treatment, and similar agreements) are also included under this category.

Net Square Footage

The total amount of usable function space in a building that does not include space required for walls, columns, utility chases, stairs, elevator shafts, mechanical and equipment rooms, and similar spaces.

Non-Influence Affidavit

The instrument by which the construction professional certifies no influence on the procurement of materials, subcontracts, or labor on the project from any official connected with state government.

Notice of Non-Complainant Work

A Notice of Non-Complainant Work may be issued by the design professional (Design-Bid-build or Construction Management) or by either the executive administrator or the design-build contractor's design professional (Design-Build). Non-Compliant Work includes the following: (1) Work that has been omitted; (2) Work that is unexecuted as of the date of the Notice of Non-Complaint Work, the time for its incorporation into the work as planned in the Overall Project Schedule having expired; and (3) Work that has not been executed in accordance with the methods and materials designated in the Contract Documents.

Notice of Readiness for Inspection for Material Completion

Submitted to the design professional by the construction professional along with the Initial Punchlist (containing Minor Items and Permitted Incomplete Work), the *Notice of Readiness for Inspection for Material Completion* indicates that the project is completed to the extent a final inspection can occur and the owner/using agency take possession and move into the facility.

Notice of Readiness Prior to Covering Work

If the design professional's instructions (either in the specifications or issued later in writing), laws, ordinances or any public authority require any work to be specially tested or approved, the construction professional, CM/GC, or design-build contractor gives its design professional timely notice in writing of its readiness for inspection.

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Notice to Finalists

By issuance of a Notice to Finalists, firms determined to be especially qualified are invited are contacted to prepare specific Consulting Services Proposals and to plan to submit to an interview by the Selection Committee.

Occupancy

When the design professional completes the Certificate of Material Completion that confirms the acceptance of the work and completion of all requirements of the construction professional, the transfer and occupancy of the project to the owner/using agency may proceed. The transfer generally will be scheduled a day or more past the Inspection for Material Completion to allow for final assembly of documents by the construction professional and review by the design professional.

Outline Specifications

Outline Specifications should describe the size, character, and quality of the entire project including: (1) kinds of materials, (2) Criteria and sizing of major components, (3) Equipment sizes and capacities, (4) Approximate layouts and clearances, (5) Structure types, (6) Grade elevations, and (7) Sidewalks Utilities.

Overall Project Schedule

The Overall Project Schedule contains a complete sequence of design and construction, organized by activities, with dates for beginning and completing each element of the design and construction.

Owner

(1) A general term for the legal state entity that owns a building and/or property associated with a project. (2) A contractual term for the party responsible for the Contract, e.g., the GSFIC typically is responsible for and signs the Construction Contract on State GO bond-funded projects.

Owner's Responsibilities

The owner/agency shall furnish the following project information to the design professional: (1) Final Project Definition (Pre-Design Study) including the cost estimate, (2) project topographical survey, (3) written legal description of the project site, (4) Land/Utility Survey of the project site, and (5) preliminary geotechnical reports on the project site.

Performance Audit and Assessment

An audit that is completed after the first year of full operation of a facility. This audit confirms the facility is being operated to its fullest and planned potential, and highlights areas of the project that did not fulfill the owner/using agency's expectations that need to be identified for corrective action and for advice to future agency planners.

Permitted Incomplete Work

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Work that cannot be completed at Material Completion through no fault of the construction professional or items that are specified to occur in the months following occupancy. Examples are maintenance service agreements and seasonal test and balance of the HVAC systems.

Phase I Environmental Site Assessment

A procedure created by the American Society for Testing and Materials and used to define good commercial and customary practice in the United States for conducting an environmental site assessment of a parcel of commercial real estate with respect to federal environmental regulations.

Preliminary Construction Cost Estimate

Prepared for agency review during the Initial Planning phase, a preliminary construction cost estimate is prepared by analyzing current programmatical information about a proposed project and applying square foot cost per major functions or systems derived from similar projects. Such estimates should include a contingency for consideration of unforeseen conditions, design contingencies, inflation, and program scope changes.

Preventive Maintenance

Required inspections and maintenance activities that ensure efficient and reliable operations while preserving the applicable warranties and guarantees.

Preventive Maintenance (PM) System

A computer-based system in which the individual inspection and action items are entered (one time) into a Work Order System that notifies the maintenance group when such inspection/service is required.

Program Manager

Appropriate for the Design-Bid-Build and Construction Management (CM/GC) procurement methods, the Program Manager represents the Owner (GSFIC and/or agency) throughout all phases of the project, including planning, design, construction, building acceptance, and closeout of the project to make certain that all elements of the work meet the required quality, design standards, and total project schedule. Services are provided in three phases. *Phase One* shall consist of the review and augmentation of existing Final Project Definition documents and coordinating the development of the program from which the Design Professional will design the project. *Phase Two* shall consist of the periodic review of the documents prepared by the Design Professional in coordination with the Construction Professional (contingent upon delivery method) to make certain that the Construction Documents are proper and correct developments of the using agency's program. *Phase Three* shall consist of monitoring the construction of the project to make certain that the work is installed in accordance with the requirements of the construction documents and all applicable codes and regulations.

Program Scope and Agency Requirements

The basis for cost estimates. Also referred to as *Architectural Programming*, this is a narrative description of the project. It answers the basic question of how this proposed project will meet the *needs* as previously documented by providing documentation of space requirements, relationships, and program functions.

Project Budget Closeout

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Once final payments are completed to the construction professional and design professional, the final financial closeout of the project and distribution of any remaining funds signals project budget closeout. At this time, all remaining consultant and special testing contracts, open procurement orders, or pending authorizations for reimbursement should be completed, paid, and closed.

Project Development

The phase of an activity [project] where requirements programming, site analysis, and other appropriate studies are conducted to develop essential information, including cost estimates, to support and advance the decision-making process prior to the design and implementation phases of an activity.

Project Development Checklist

Provides guidance and assistance in identifying, organizing, and tabulating general criteria and information that is generally required to define the project and provide information for its timely approval.

Project Development Cost Estimate

Derived from the preliminary cost estimate, the project development cost estimate is prepared using the Uniformat system of cost estimating, and include all direct and associated costs for all activities and phases, including property acquisition, design, construction, utility connection fees, FF&E, project administration, start-up (building commissioning), move-in, and contingencies.

Project Development File

A working document addressing the items in the Project Development Checklist that is carried forward through each phase of project development with information updated or added as required to keep the document current.

Project Development Process Flow Chart

Reflects the processes most commonly followed by the majority of state agencies.

Project Implementation Plan Worksheet

An Office of Planning and Budget Worksheet that includes a cost summary that separates costs by item and by project phase and specifies the project delivery method and fiscal year for funding.

Project Records

Also referred to as *Final Documents,* Project Records consist of several types of documents depending on the specific construction and design professional agreement. Most Project Records include *Record Drawings*; operating instructions, equipment/systems warranties and guarantees; Shop Drawings and submittals; and certificates, affidavits, bonds and capital cost accounting.

Qualifications-Based Selection (QBS)

The selection of the firm deemed by the Owner to be the most qualified firm, *without the consideration of cost or fee* to provide construction-related services. QBS allows firms to compete initially solely upon their qualifications and demonstrated expertise. The owner uses weighted criteria to evaluate *qualifications-related factors* in the selection. An actual offer of a contract is subject to negotiation between owner and proposer. A *two-step process* is recommended for qualifications-based selection.

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Quality Control (QA/QC) Plan

The Quality Control Plan is written by the Construction Professional and submitted during the Preconstruction phase for approval by the Design Professional and Owner.

Record Drawings

Upon Final Completion, the design professional revises the original Contract Documents (plans and specifications) incorporating all changes created by change orders, additional sketches, field changes, answered RFI's (Requests for Information), and as-built documents submitted by the construction professional and creates what is referred to as *Record Drawings.*

Reference Check Matrix

Provided by the selection manager, the reference check matrix contains questions deemed pertinent by the Selection Committee. The form serves as a scoring tool employing information received from the submitting firm's references.

Request for Qualifications (RFQ)

Through the RFQ, firms are invited to submit Statements of Qualifications.

Retainage

To account for possible unforeseen deficiencies and lack of performance of installed materials and equipment, retainage is withheld from each periodic payment to the construction professional per contractual amounts for the sum of the total amount earned for work-in-place under the original contract, total amount earned for work-in place for change orders, and value of material stored at the site.

Safety Program

The Safety Program is part of the Construction Management Plan prepared by the Construction Professional during the Preconstruction phase and submitted to the Design Professional and Owner for approval.

Schedule Management

An Overall Project Schedule that coordinates and integrates the design team's efforts with the construction team's actual or anticipated construction schedule(s), including the specific commencement and completion scheduled dates for proposed phasing of the construction and for award of early construction components by Component Change Order. The schedule must include the dates for commencement and completion of the work as required by the contract.

Scoring Forms

Developed by the selection manager for both the Request for Proposals and subsequent steps, for use by the voting members of the committee, the scoring forms reflect the established major criteria categories such as *Stability of Firm*, *Relevant Experience/Qualifications of Firm*, *Location of the Firm*, *Performance of the Firm*, and *Suitability of the Firm*, providing an accurate scoring summary based on the sum of the individual rankings by each member of the selection committee.

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Sealed Fee Proposal

If required, fee proposals shall be submitted in a sealed envelope, and shall not include any project proposal information. Upon negotiation, in the event a satisfactory fee cannot be reached with the highest- scoring firm, the owner will formally terminate the negotiations in writing and open and review only the fee proposal of the second highest-scoring ranking firm, and so on until a mutually agreed-upon fee is established

Security Control Plan

A plan created by the Using Agency that includes designation of an official entry/exit; a key check-out/check-in procedure; a credentialing/badging requirement; publication and issuance of a brief one-page policy statement on access/security to hand out; and an inspection procedure that includes a daily review of the spaces where the construction professional's workmen are present.

Selection Committee

Generally limited to three to five individuals, the committee that votes on the selection of project team members. Selection Committees for major construction services should be cross-functional teams, comprised of varied, unbiased, responsible, and professional individuals. The committee may include internal stakeholders in the project.

Selection Manager

The *sole point of contact* for interested firms and prospective proposers from the advertisement of the procurement opportunity through the announcement of contract award. As a single point of contact, the selection manager: (1) helps maintain the integrity of the procurement process, (2) reduces the risk of undue influence or pressure on the agency or the Selection Committee, and (3) maintains a consistent and orderly flow of information at the appropriate time and in the appropriate manner.

Selection Methods

The type of selection procedure used by the state to procure construction-related services generally falls into the following three categories: (1) Competitive Bidding or "Low Bid," (2) Best Value, and (3) Qualifications-Based Selection.

Separate Contractors

Firms who have a direct contract or purchase order with the owner/using agency and are not associated with the construction professional or design professional. Separate contractors may include installers of telecommunications equipment, energy management systems, computer network systems, reproduction equipment, landscaping, or other separate contractors specific to a site.

Shop Drawings and Submittals

Documents produced by the construction professional and submitted to the design professional during the progress of the work. The purpose of these documents is to (a) detail and expand on the *design intent* of a particular component system, or (b) provide exact information on a proposed material item or piece of equipment to be supplied (from a list or specification of alternate products or materials).

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Special Inspections

Special Inspections are the monitoring of the material and workmanship critical to the integrity of the building structure. Special Inspections include reviewing the work of the construction professional and its team to make certain that they are following approved plans and specifications while observing relevant codes and reference standards. Multiple Special Inspectors may work on one project.

Specialty Consultants

For projects where the GSFIC or agency may have limited experience to provide project management services or when projects require specific technical skills, contract with a professional construction consultant for specific scope of services to augment the GSFIC or agency's project management team. Specialty consultants provide services that include the following: (1) laboratory design, (2) clean room design, (3) LEED consulting, (4) Value Engineering, (5) cost estimating, (6) scheduling, (7) dispute resolutions, (8) change order negotiations, (9) peer reviews, (10) constructability reviews, (11) compliance inspections, and (12) Construction Administration.

Stakeholders	Including the Owner, Design Professional, Construction Professional, and Using Agency Authorized Representative, a fairly large cross section of the agency's management team and stakeholders that may also include representatives from outside of the agency (regulatory agencies, host community, adjacent organizations, special interest groups, and similar representatives) with the common objective of contributing the broadest scope of ideas and recommendations to the refinement of the proposed project.
Stated Cost Limitations (SCL)	A contractual price amount that limits the total cost for construction.
Statement of Probable Construction Cost	The design professional is responsible for the preparation of a SPCC at the following milestones during the Design phase: (1) Initial SPCC with Schematic Design, (2) Updated SPCC with Design Development, and (3) Final SPCC with construction documents. The estimate supporting the SPCC shall be provided using the system/assemblies clarification of the Construction Specification Institute (CSI) Uniformat Cost Classification at the level of detail indicated in Exhibit F of the Design Professional Contract.
Statutory Affidavit	The instrument by which the construction professional certifies completion of all work, payment of all subcontractors, suppliers, laborers, and settlement of all claims.
MFC **Strategic Planning**	A systematic process wherein the top management of an agency, with the assistance of staff, charts its future course.
Subcontractor	A subcontractor contracts with the construction professional to supply or repair any materials or goods or execute work forming part of the contract.
Supplemental Consultants	Supplemental consultants are utilized to help the GSFIC/owner, and agency project management team. Some supplemental consultants contract for services directly with the owner and some contract through the design professional. Supplemental consultants are usually selected at or near to the selection of the design professional. Supplemental Consultants provide the following services: (1) Geotechnical Engineering, Land Surveying, and Testing Services, (2) Special Inspections, (3) Owners Representative, (4) Building Commissioning, and (5) Specialty Consultants.
Team Selection	A carefully planned state procedure for selecting design and construction professionals and consultants. This process is usually managed by an experienced contracting officer certified by an accepted governmental contracting or procurement institute, association, or society.

Total Cost of Ownership and Operation	A report that documents the annual recurring costs and revenues (i.e., parking fees, dormitory rent, and other costs and revenues as applicable) for a project. Submitted with the aid of the Total Cost of Ownership Worksheet.
Total Cost of Ownership Worksheet	An Excel worksheet from the Office of Planning and Budget (OPB) that allows agencies to submit capital requests for facilities. Agencies can directly upload and transfer any supporting agency project worksheets, programming and cost studies, and picture electronic files (Excel, Word, PDF, and similar formats) related to a given project to OPB as part of the project submittal
Transfer of Asset	At Material Completion and upon the owner/using agency occupying the facility, the GSFIC Construction Division will prepare a Capital Asset Transfer Letter to the owner/using agency. This serves as a notification to the owner/using agency to report this project on their books as a capital asset.
Using Agency	The party that will actually manage and operate the finished project.
Value Engineering	Value engineering is a formalized process lasting three to four days that includes participation from project team members and other qualified consultants. During this process, systematic application of analyses are used to identify foundations and components of the work, establishing the value of these functions and selecting the necessary functions to meet the required owner/using agency's program of requirements at the lowest overall cost.
Value Management	A less formalized approach to value engineering that is a continuous process of cost assessment throughout the design process.

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