

Chapter 4 – Submission Phase Guidelines

4.3.2 DESIGN DEVELOPMENT PHASE

A. GENERAL INFORMATION

1. The objectives of the Design Development Phase are different from those of Schematic Design Phase. The primary purpose is to define and describe all important aspects of the project so that all that remains is the formal documentation step of construction contract documents.
2. The Design Development Phase focuses more on the technical aspects of materials and building systems. Although this phase allows the Designer to finalize space and function to a great degree, the primary achievement is to enable the Client to understand how the project will function as well as give more detail about what it will look like.
3. The Design Development Phase is the period when all the issues left unresolved at the end of schematic design can be worked out, and at a scale that minimizes the possibility of major modifications during the construction documents phase. It is also the period in which the design itself achieves the refinement and coordination necessary for a really polished product.
4. While most design issues should be resolved by the end of design development, some will continue to be refined, resolved, or modified during the construction documents, bidding and construction phases of the project.

B. TASKS

1. **Project Administration and Management**
 - a. Project administration
Tasks include the following: consultation, research, conferences, communications, meeting minutes, travel, progress reports, and direction of the work of project team.
 - b. Disciplines coordination / document checking
Tasks include the following: coordination between the architectural work and the engineering work and other involved disciplines for the project. Review and checking of documents prepared the project.
 - c. Agency consulting / review / approval
Tasks include the following: agency consultations, research applicable regulations, appearance on Client's behalf at agency and community meetings.
 - d. Refine building code analysis.
 - e. Client-supplied data coordination
Tasks include the following: review and coordination of data furnished by OGS and the Client, assistance in establishing criteria, assistance in obtaining data.
 - f. Schedule monitoring.

- g. Presentations to Client, OGS, building committee, staff committee, user groups, board of directors, OGS's and/or Client's consultants.
- h. Phasing description.
- i. Incorporate comments from previous phase.

2. Architectural Design / Documentation

Services during this phase consist of continued development and expansion of the architectural Schematic Design documents to establish the final scope, relationships, forms, sizes and appearance of the project through:

- a. Plans, sections and elevations
- b. Typical construction details
- c. Three dimensional sketches
- d. Study model (s)
- e. Final materials selections
- f. Equipment layouts

3. Structural Design / Documentation

Services during this phase consist of continued development and of the specific structural system (s) and Schematic Design documents in sufficient detail to establish:

- a. Basic structural system and dimensions
- b. Final structural design criteria
- c. Foundation design criteria
- d. Preliminary sizing of major structural components
- e. Critical coordination clearances
- f. Outline specifications or materials lists.

4. Mechanical Design / Documentation

Services during this phase consist of continued development and expansion of the mechanical Schematic Design documents and development of outline specifications or materials lists to establish:

- a. Approximate equipment sizes and capacities
- b. Preliminary equipment layouts
- c. Required space for equipment
- d. Required chases and clearances
- e. Acoustical and vibration control
- f. Visual impacts
- g. Energy conservation measures

5. Electrical Design / Documentation

Services during this phase consist of continued development and expansion of the mechanical Schematic Design documents and development of outline specifications or materials lists to establish:

- a. Criteria for lighting, electrical and communications systems
- b. Approximate equipment sizes and capacities
- c. Preliminary equipment layouts
- d. Required space for equipment
- e. Required chases and clearances
- f. Visual impacts

- g. Energy conservation measures

6. Civil and Landscape Design / Documentation

Services during this phase consist of continued development and expansion of civil and landscape Schematic Design documents and development of outline specifications or materials lists to establish the final scope and preliminary details for on-site and off-site civil engineering work and landscaping work.

7. Interior Design / Documentation

Services during this phase consists of continued development and expansion of interior Schematic Design documents and development of outline specifications or materials lists to establish final scope and preliminary details relative to:

- a. Interior construction of project
- b. Special interior design features
- c. Furniture, furnishings and equipment selections
- d. Materials and finishes and colors

8. Materials Research/Specifications

Services during this phase consisting of:

- a. Development of architectural outline specifications or itemized lists and brief form identification of significant architectural materials, systems, and equipment and their criteria and quality standards
- b. Coordination of similar activities of other disciplines
- c. Production of design manual including design criteria and outline specifications or materials lists

9. Project Scheduling

- a. Review and update previously established project schedules for the project.

10. Project Estimate

- a. Review and refine project costs
- b. Availability of materials
- c. Project delivery procedures
- d. Construction sequencing and scheduling
- e. Changes in scope of the project
- f. Adjustments in quality standards
- g. See Chapter 6 Cost Control of the DPM

C. DELIVERABLES

1. Design Development Phase deliverables should include:

- a. Technical information about special systems and subsystems to be incorporated into the project.
- b. Outline specifications and more detailed drawings to establish the size and character of the entire project including architectural, structural, mechanical, and electrical systems.
- c. The products of this phase are similar to those of the Schematic Phase.

2. Drawings and Specifications

- a. Drawings and specifications that fix and describe the size and character of the project.
- b. The drawings and specifications provide much greater detail and refinement than the Schematic Phase.

3. Code Compliance

- a. Copy of the completed BDC 402. Provide updated code compliance diagrams on the drawings. Code issues and solutions should be identified and resolved at this stage of the project development. Code review and compliance should be further refined at this stage of the project.

4. Sustainability:

- a. **Executive Order 88 Compliance:** Determine if the project needs to comply with Executive Order 88 for energy efficiency. (Refer to [FlowchartExisting.pdf](#) and [FlowchartNewConst.pdf](#)) If the project needs to comply, determine who will be the commissioning agent and how the energy efficiency analysis will be performed.
- b. **LEED:** If the project is pursuing LEED certification, determine who will be the commissioning agent, and perform a LEED charette to determine which prerequisites and credits are to be attempted for certification.

5. Project Estimate

- a. The estimate is usually broken down into major trades or systems (for example, foundations, structure, exterior closure, interior partitions, finishes, plumbing, mechanical, electrical, site, and equipment).
- b. The estimate may include a preliminary analysis of the Client's budget, with recommendations for changes based on site, marketplace, or other unusual conditions encountered in the schematic design.
- c. Include contingencies for further design development, market contingencies, and changes during construction.

6. Project Schedules

7. Distribution

- a. The Designer and the OGS Team Leader should determine formats, number of copies and distribution of submission documents required for this phase.

D. OPTIONAL SERVICES

- 1. Life-Cycle Cost Analysis
- 3. Special Renderings
- 4. 3D Modeling
- 5. Energy Analysis and Design

6. Value Analysis / Value Engineering

E. FINAL STEPS

1. The final step in the Design Development Phase is for the Designer to obtain formal OGS Team Leader and Client approval before proceeding to the next designated phase.
2. All phase comments shall be reviewed and responded to within 15 business days from approval.

Revision History:

<i>Rev</i>	<i>Date</i>	<i>Description</i>	<i>Reviewed by:</i>	<i>Approved by:</i>
0	02/26/07	Last revised date		
1	06/01/13	Minor changes to section D and added Revision History	Parnett	Larkin
2	09/04/13	Code compliance revisions	Parnett	Parnett
3	07/08/14	Section C 4	Campas	Parnett