

## DESIGN PROCESS

James Cummings, AIA  
A Collaborative Design Group

### **SCHEMATIC DESIGN PHASE (PHASE I)**

#### *Develop the Program Objectives*

We start the design process by assisting our Client in developing a comprehensive program of objectives for the project. We consider functional objectives, budgetary control, and the important intangible qualities of a project that create its sense of spirit.

#### *Learn the Ground Rules*

Before considering concepts for the project, we research the regulatory limits on the property, including the local Zoning Ordinance and Building Code Regulations that apply.

#### *Learn the Site*

As we consider the objectives of the program, we will include the aspects of the natural site and existing installations that will influence the design options considered. These considerations will include the Sun, predominant breezes, existing views (of the site and from within the site), existing built facilities including neighboring structures, landscape materials, topography and drainage. When we can, we prefer buildings to take advantage of the forces of Nature, rather than resist them.

#### *Develop Concept Design Proposals*

There is always more than one way to satisfy the functional program, and there is usually an inherent conflict in the program that requires a judgment about which design best meets the overall needs of the project. We prefer to use the Schematic Design Phase to invite the Client into the decision process at the start.

We generate several solutions for the project and submit them for review and discussion. This is a significant step in our journey of learning to know each other and how to best work together to meet the objectives of the project. We study functional relationships in site plans, floor plans, and basic options for building arrangements in massing models or sketch models.

### *Develop the Budget*

We use the alternate-solution process to inform us about budgeting and cost options. We bring this information to the discussions of design proposals and work with the Client to meet the cost control objectives of the project. We develop a general cost estimate, based on the size of the building that will help set the overall cost of the project.

### *Schematic Design Phase Products*

- Site Plan(s)
- Floor Plans (alternate designs)
- Schematic Massing Model(s), when appropriate
- General Cost Estimates (per square foot pricing)

## **DESIGN DEVELOPMENT PHASE (PHASE II)**

### *Refine the Project Parameters*

After a review of design solution options and their costs, it is typical for the project parameters to be updated. It is typical for the design process to be a useful tool in refining communication and priorities. We join the work to determine what, if any, elements of the program should be revised as we continue the design process.

### *Develop the Project Design*

After a general direction for the design is established, we begin to consider options within the chosen scheme. In this way, the major decisions are made first and the subordinate decisions are made subsequently.

We update the functional floor plans and additional design decisions are included. The sketch models are refined and decisions about materials and the “look” of the project are developed. During this phase, detailed plans will be considered and any built-in elements will be designed.

Lighting plans are developed as part of the overall design. Technical systems are considered for routing of ductwork and piping and the location of equipment. The structural system, which is considered even in the Schematic Design Phase, is developed in its final form.

### *Perform a Detailed Cost Estimate*

As the project begins to move into a form that is more determined, it is possible to do a “sticks and bricks” estimate where all elements of the design are recognized and considered in a detailed estimate.

### *Develop Outline Specifications*

In a similar way, as the design becomes more final, it is possible to develop an outline of the Technical Specifications for review and comment. This list of materials and systems is also required for the detailed estimate.

### *Design Development Phase Products*

- Site Plan
- Floor Plan(s)
- Roof Plan
- Exterior Elevations
- Building Sections and Cross-Sections
- Built-in Elements Plans and Elevations
- Structural Systems Schematics
- Mechanical Systems Schematics
- Detailed Cost Estimate (sticks and bricks estimate)

## **CONSTRUCTION DOCUMENTS PHASE (PHASE III)**

### *Develop Construction Documents Package*

The documents generated in the previous phases are developed as a package of construction requirements, for installation by the Contractor, to ensure the quality of design and workmanship appropriate for the project. The remaining technical design decisions are made during this phase, to be consistent with the overall design intent of the previous reviews, and to ensure a long-lasting and useful installation.

Where building materials and systems were selected in earlier phases of design and quantities of materials could be known, the manner in which materials and objects are installed is determined and documented during this phase.

An objective of the Construction Documents is to remove any question about how the project is to be priced or built.

### *Develop Complete Technical Specifications*

A thorough and complete technical specification is issued for all building products and systems. Parameters of construction procedures are included in the Administrative section of the Specifications.

### *Update Detailed Cost Estimate*

We update of the Detailed Cost Estimate to ensure the project remains “on course.”

### *Develop Bidding Documents*

Bidding documents will be generated for Contractors to use, so that issues of legal Contract are reviewed in advance, and Contractor bids will be delivered in a manner that can easily be compared.

### *Construction Documents Phase Products*

- Site Plan
- Floor Plan(s)
- Reflected Ceiling Plan(s), where appropriate
- Roof Plan
- Exterior Elevations
- Building Section(s) and Cross-Section(s)
- Wall Sections
- Enclosure (weatherproofing) Details
- Detailed Plans and Interior Elevations
- Door and Window Schedules and Details
- Interior Finish Schedule and Details
- Built-In Furnishings Details
- Structural Plans and Details
- Mechanical Plans and Details
- Plumbing Plans and Details
- Electrical Plans and Details

## **BID PHASE (PHASE III)**

### *Assist in Developing a List of Bidders*

A list of potential Bidders is developed and reviewed. We might be able to recommend honest and dependable Contractors, but we have no business relationship with any builder that would compromise our role as the advocate of our Client.

### *Administer Bidding Process*

As the Bidders consider their price, we will meet with them and their Sub-Contractors to review the project and any questions they might have. The questions, and responses will be made available to all Bidders to ensure a fair process. The quality of questions is often a good indication of which Bidder(s) are serious candidates for the project.

### *Evaluate Bids*

When the Bids are received, the Bids will be compared to one another and to the estimated costs for the project. The References for the viable Bidders are reviewed and, with the bid price, used to make a recommendation for a Contractor. Our Clients should be as involved in this bidding process as they desire, and should certainly be the ones to make the final selection for a Contractor.

### *Bidding Phase Products*

Contractor Selection and Construction Cost Pricing

## **CONSTRUCTION ADMINISTRATION PHASE (PHASE V)**

### *Assist in Developing and Awarding Final Contract*

When the Contractor is selected, a final Agreement form is executed, which includes the Drawings and Technical Specifications, and becomes the legal Contract that will be used during construction. The Architect is typically a “free” agent in this process and therefore produces the final Contract form.

### *Review Contractor Submissions*

As submissions are made by the Contractor, regarding schedule, products and processes, we review them for compliance with the intent of the design and compliance with the Contract, and process them for use. Copies of all submissions will be provided to our Client, who may require review of submissions before they are approved. Any such request will be respected.

### *Perform Periodic Site Inspections*

We meet periodically with the Contractor and the Client to inspect the work in progress. Generally, these meetings occur at “milestone” events in the building process, but at least as often as every two weeks. The group will discuss any

modifications that existing conditions require, and inform the Contractor of any work that does not meet the project requirements.

It is typical at these meetings to discuss payments to the Contractor for the work completed, and it makes a very comfortable working relationship when the group convenes often: To inform the Contractor of work well done; to quickly remedy questions the Contractor has; to preview impending work to facilitate decisions; and, to provide a regular forum for interaction and expedited payment. We generally operate this process in an atmosphere of mutual respect for the different "specialties" each member of the team brings to the building process, and have found good success.

#### *Administer Contract*

We will administer the Contract with the Builder, including regular meeting records, and any modifications to the Contract that might be required. When the standard AIA Agreement form is used, it establishes the Architect as the first Arbiter if disputes arise. Good documentation and regular meetings result in very few disputes, if any.

#### *Construction Administration Phase Product*

Completed Building

### **SUPPLEMENTAL SERVICES**

#### *Artist Renderings*

We use black-and-white sketches as a form of design tool, and make them available to the Client to assist in decision-making. Full-color artist rendering(s) can be provided as a Supplemental Service.

#### *Three Dimensional Models*

We often use cardboard or computer-generated models as a design tool, and make them available to the Client to assist in decision-making. Full-color models, or animated computer models can be provided as a Supplemental Service.

#### *Marketing and Fund-Raising Documents*

The two-dimensional drawings used for design can be easily modified for use in fund-raising literature, and would be provided at no additional cost. If the Client would like brochures prepared, or complicated renderings of the drawings, for use

in fund-raising efforts, we would be happy to provide these documents as a Supplemental Service.

### *Existing Conditions Survey*

It is typical for the Owner to provide information about the size and construction of an existing building and site. Our base fee includes visits to the existing site to verify existing conditions. If an extensive survey of existing conditions is required, we would be happy to perform work as a Supplemental Service.