

### **1. Programming Phase – Defining the scope of work, budget, and schedule** **6 -14 Months**

Also known as Planning and Pre-design, the goal of this phase is to define the project objectives, determine the building and user requirements, and develop a scope of work. This entails gathering information from the intended building occupant(s), determining the effect on existing facilities or projects-in-planning and need for corollary projects, and identifying applicable zoning, building codes, and other regulatory requirements.

### **2. Schematic Design Phase – Outline for how the project will look and function** **5 – 15 Months**

The purpose of the schematic design is to convert the project program into physical drawings of space. The project team determines the areas, physical requirements, and relationships of all the required building spaces and components. This includes a complete description of building systems (structural, mechanical, Heating, Venting, and Air Conditioning (HVAC), plumbing and electrical), interior and exterior finishes, and the building site. This process goes through several renditions to develop a set of schematic drawings, floor plans, site plans and building elevations, and a probable cost of construction.

### **3. Design Development Phase – Refinement of the plans, specifications, and estimate** **5 – 12 Months**

In design development, the schematic plans and elevations are reviewed, revised, and expanded to incorporate all the details and specifications required for construction. Issues often come to light that affect constructability or are critical to satisfying the project program. These may require changes to the project program or to the budget, or both. By the end of design development, the design drawings and specifications are sufficiently complete to establish and define the facility's size, function, configuration and spaces, the operation or use of equipment and the materials for all the principal building structures and systems. The probable cost of construction is updated. Permit applications are also developed during this phase.

### **4. Construction Document Phase – Complete and accurate drawings and specifications for bidding** **6 – 20 Months**

Construction documents are compiled from design development documents. They include all the drawings and specifications necessary to complete the project and are the basis of the bid documents and the construction contract. Permit applications have been submitted and are awaiting approval. A final estimate of probable construction cost is submitted with the final set of plans and specifications.

### **5. Bidding – Advertising/inviting contractors to submit a bid on the project and select a contractor** **2 – 4 Months**

When construction documents are complete, the project is ready to "put out for bid". The bid process is the method of selecting and hiring contractors. Qualified construction companies and subcontractors are provided with bid documents, which they use to determine the costs and prices for their bid package. The bid submissions are reviewed and accepted based on completeness of the bid package, compliance with the terms in the bid documents, construction suitability, and the bid cost. After all bids are received and reviewed, it is sometimes the case that all the submitted bid costs exceed the authorized project budget. For construction to proceed, either the project budget must be increased, or changes made to the scope or quality of the project.

### **6. Construction Administration – Answer questions, provide updates, and resolve problems** **6 – 24 Months**

The design team monitors and observes the construction to make sure the contractor is constructing the project per the plans and specifications, reviews and approves submittals and shop drawings for conformity to the plans and specifications, answer questions and resolves issues that develop on the site. Occupancy of a building can occur only when the project is substantially complete, and the fire marshal issues a certificate of occupancy. At the time of substantial completion, a variety of documents are produced or obtained that complete the construction documents. These include "as-builts", "record drawings", "markups", "closeouts", operations, and maintenance manuals, permits, warranties and other documents necessary to occupy and maintain the facility.