

Design Development Overview

In today's market with unprecedented cost escalation and extended material delivery lead times, it is important to "Design to Budget." The Preconstruction process engages the owner, designers, construction manager and trade partners to ensure all parties are developing a project that meets the owner's program, budget, and schedule. The whole Preconstruction process is open book and transparent to ensure the success of your project.

We provide Preconstruction services during the design development stage to ensure the project is "Designed to Budget." The following is a sample of the typical Preconstruction services we provide during the design development of a planned project to ensure it is a success.

KICK OFF PROGRAMMING / CONCEPTUAL PHASE SERVICES

Owner shall provide Construction Manager at Risk with Owner's Project Criteria describing Owner's program requirements and objectives for the Project. Owner's Project Criteria shall include Owner's use, space, price, time, site, performance and expandability requirements. Owner's Project Criteria may include conceptual documents, design criteria, performance requirements and other technical materials and requirements prepared by or for Owner. The Construction Manager at Risk shall review and prepare a written evaluation of such criteria, including recommendations to Owner for different and innovative approaches to the design and construction of the Project. The parties shall meet to discuss CMAR's written evaluation of Owner's Project Criteria. This initiates development of the Conceptual Design Documents. The CMAR shall continue at Owner's direction until a detailed Final Program has been completed and has been approved by the Owner.

Based on the Conceptual Design Documents, Wharton-Smith will prepare an initial Cost Estimate based on our understanding of the scope of the project, project narratives and Owner requirements. At this early stage in the design process, the estimate will include cost data from our project experience of ongoing and completed projects. We have an extensive project cost database that is kept current by actively pricing and managing projects daily.

Through collaborative team meetings, we will work to ensure all parties understand and concur with the overall understanding of the project's intent and scope of the work at this stage. Value engineering in the form of a checklist of cost saving items will also commence at this time to capture the greatest value of potential savings. The estimate for conceptual design will be assembled following various site visits and program evaluation meetings, then be presented to the team for review and approval.

DELIVERABLES

- Presentation of results of user interviews and building program update
- Building functions and unique activities
- Identify and describe space requirements for each room/function and their associated adjacencies
- General description outlining site, structural, mechanical, plumbing, electrical and specialty requirements
- Drawings
 - Architectural
 - Floor plan(s)
- Statement of Constructability to include analysis of costs, materials selections and cost options
- Project Schedule

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CONCEPTUAL PHASE DURATION

- 6 Weeks or less

SCHEMATIC DESIGN PHASE

The Schematic Design Cost Estimate will be based on drawings and outline specifications prepared by the design team, typically referred to as 30% documents. The estimate provided at this stage will include quantities for the designed scope and qualified allowances for the undefined scope by our professionals to provide a complete budget. Unit and cost per square foot rates will be established for the estimate and reconciled to the budget at this time.

The constructability review and value management process identify areas where significant contributions can be made to reduce costs, accelerate the schedule, and enhance the project's value.

We believe constructability reviews and value management to be an integral part of the overall project approach and subsequently these are review measures that will be implemented throughout the course of the preconstruction process. After the conceptual phase, we view value management to be a refinement tool since much of the project's scope and program has been established by this time.

Wharton Smith, working closely with the project team, evaluates alternatives and subsequently makes recommendations based on:

- First and Life-Cycle Costs
- Quality/Durability
- Constructability
- Schedule/Material availability
- Maintenance/Operation Considerations

In conjunction with the client and the consultants, Wharton-Smith will review the design of the project on a continuous basis to ensure it is the most cost-effective and is consistent with the project goals. In all cases, Wharton-Smith will look for possibilities to improve quality, expedite schedules and optimize costs.

DELIVERABLES

- Drawings
 - Architectural
 - Floor plans, exterior elevations and building section(s)
 - Civil
 - Indicating proposed building location(s) and site improvements
 - Mechanical, Electrical, Plumbing
 - Single-line drawings indicating locations of major equipment
- Statement of Constructability to include analysis of costs, materials selections and cost options
- Updated Project Schedule

SCHEMATIC PHASE DURATION

- 9 Weeks or less

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DESIGN DEVELOPMENT PHASE

The Design Development Cost Estimate will be based on developed drawings and outline specifications prepared by the design-build team, typically referred to as 60% documents at this stage. A more detailed estimation of the mechanical/electrical/plumbing elements will also be analyzed at this time. Wharton-Smith coordinates with Mechanical, Electrical and Low Voltage Preconstruction professionals to ensure that our estimates are detailed and accurate regarding these disciplines.

Wharton-Smith will continually work to monitor and evaluate the progress of the documents in this phase to ensure that they are proceeding in conformance with the cost estimate and include all the associated project goals. Value engineering will continue to develop concurrent with the preparation of the estimates. Wharton-Smith will work to further define the project schedule and milestone dates at this time to realistically assign budgets based on future industry trending relative to anticipated purchase and completion of scope. Costs will be evaluated against Wharton-Smith's cost database derived from benchmarking and recent projects. These benchmarking efforts are continuously updated and adjusted for escalation, material delivery challenges and construction activity within our local marketplace.

During the Design Development phase, we will have developed the schedule to the point whereby we will recommend early bid packages if required to meet the long lead demands of the schedule. We will also develop a list of Prequalified Subcontractors for review by the team in anticipation of Invitations to Bid at the GMP stage.

DELIVERABLES

- Drawing Updates
 - Architectural
 - Floor plans, exterior elevations and building section(s)
 - Roof plan, reflected ceiling plan and interior elevations
 - Life Safety Plans
 - Civil
 - Indicating proposed building location(s) and site improvements
 - Existing plan, site plan, grading/drainage plan and utilities plan
 - Structural
 - Foundation, framing, elevations, sections and details plan
 - Mechanical, Electrical, Plumbing
 - Single-line drawings indicating locations of major equipment
 - Piping and fixtures updates
 - Specifications
- Statement of Constructability to include analysis of costs, materials selections and cost options
- Updated Project Schedule

DESIGN DEVELOPMENT PHASE DURATION

- 10 Weeks or less

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CONSTRUCTION DOCUMENT PHASE / GUARANTEED MAXIMUM PRICE GMP

When the design reaches the Construction document stage and is ready to be bid to our subcontracting partners, we will commence our GMP bidding procedures. Wharton-Smith, Inc. will begin bidding procedures by coordinating with the Owner's Project Representative to determine the date, time and place of bid opening, and any scheduled subcontractor pre-bid meetings and/or pre-bid walkthroughs.

An ITB, Instructions to Bidder's will be provided to subcontractors so they understand the requirements of the project. These instructions will include any specific owner requirements, project logistics, an outline schedule, major trade scopes of work, a sample subcontract, safety, and quality requirements.

Wharton-Smith, Inc. will utilize www.ConstructConnect.com, our online plan room, to directly solicit selected prequalified subcontractors, by emailing Invitations to Bid including information on how to access the bidding documents. **Wharton-Smith, Inc. will work with your Project Representative to develop the bidder's list and include all subcontractors and material suppliers that you would like to invite.**

The Owner's Project Representative is welcome to be present at the time of the bid opening and shall witness the receipt and tabulation of all bids. Wharton-Smith, Inc. will provide the Owner's Project Representative with the final bid tabulation from bid day.

All information regarding solicited subcontractors and responses received, including the identification of the responses found to be from the lowest, responsible, responsive bidder, will be summarized in the Subcontractor Bidder Report in the GMP. We will coordinate with the major low responsive subcontractors to ensure they have complete scope and fully understand the project.

The GMP, Guaranteed Maximum Price document will include the Summary of Costs, a detailed analysis of all the subtrades scopes and pricing, copies of all the subcontractor's bids, a breakdown of the General Conditions and General Requirements. Also included will be the project schedule, Assumptions and Qualifications, and a listing of all the project documents.

By following this process, we have ensured the success of hundreds of projects. "Design to Budget" is how we start the Design Development process and how we finish with the Guaranteed Maximum Price.

DELIVERABLES

- Drawing Updates
 - Architectural
 - Floor plans, exterior elevations and building section(s)
 - Roof plan, reflected ceiling plan and interior elevations
 - Life Safety Plans
 - Schedules – Room finish, door, window, hardware, etc.
 - Civil
 - Indicating proposed building location(s) and site improvements
 - Existing plan, site plan, grading/drainage plan and utilities plan
 - Structural
 - Foundation, framing, elevations, sections and details plan
 - Schedules
 - Mechanical, Electrical, Plumbing

- Single-line drawings indicating locations of major equipment
- Piping and fixtures updates
- Schedules
- Specifications
- Final project cost statement
- Updated Project Schedule

CONSTRUCTION DOCUMENT DEVELOPMENT PHASE DURATION

- 13 Weeks or less