



University
of Houston
Clear Lake

**Facilities Management and Construction
Project Delivery Manual**



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INTRODUCTION

PURPOSE OF THE MANUAL

The goal of the Project Delivery Manual (PDM) is to improve understanding and communication among all stakeholders by clearly identifying the roles and responsibilities of the various team members, as well as the processes and controls expected at each phase of the project.

This manual serves as a comprehensive summary of the key processes, procedures, tasks, and tools involved in initiating, managing, and completing a facilities improvement project at the University of Houston-Clear Lake (UHCL).

The PDM will assist in educating new Facilities Management and Construction (FMC) staff and serve as a day-to-day reference for FMC personnel. It is also designed to facilitate communication with internal and external stakeholders interested in understanding FMC’s processes for the design and construction of their projects. The PDM will be reviewed annually, and revised to address the evolving needs, processes, and policy of the University.

Processes presented in this manual are a guide but unique project circumstances may require variances in the sequence of activities.



OVERVIEW OF THE MANUAL

The first section of the PDM describes the Project Delivery Process and the steps of each project phase.

Each phase of project delivery involves tools, tasks, and deliverables that ensure the project is on track with the overall goals, budget, and schedule. The project phases are as follows:

Step 1: Needs Development

1. Project Intake
2. Project Assignment

Step 2: Scope Development

1. Programming
2. Project Funding
3. Utilities survey and assessment of infrastructure for NFPA & ADA etc.

Step 3: Selection of Design Team

1. Specialist Selection/Contracting/or In-House Design
2. Request for Qualifications (RFQ)

Step 4: Design Phase

1. Schematic Design
2. Design Development
3. Construction Documents

Step 5: Selection of Contractor

1. Bidding and Award
2. Owner Provided Services
3. Informal Bids (3 Bid Process)
4. Texas Co-Op Purchasing
5. Formal Competitive Bid (FCB)
6. Request for Proposal (RFP)

Step 6: Construction Phase

1. Construction



Step 7: Transition Activation and Closeout

1. Building Transition
2. Warranty
3. Project Close-out
4. Administrative Close-out
5. Financial Close-out

FACILITIES MANAGEMENT (FMC) ORGANIZATION MISSION

The primary mission of Facilities Management and Construction is to serve the needs of students, faculty, and staff by maintaining and improving the physical environment and facilities of the University of Houston - Clear Lake

MISSION AND VISION

FMC provides planning, design, construction, operations and maintenance and ensures that all of the campus facilities are both operationally and aesthetically at their best to help the university meet its educational mission.

FACILITIES MANAGEMENT ORGANIZATION & SERVICES THAT SUPPORT PROJECTS AS WELL AS MAINTAIN UNIVERSITY PHYSICAL PLANT.

- a) **FMC Senior Business Coordinator, support staff and UHCL Purchasing Department.**
Supports financial, purchasing and contracting needs for Facilities Management and Construction support and services.
- b) **Maintenance Operations**
FMC performs skilled trades, maintenance, custodial, landscaping, grounds, auto fleet, labor, electrical, elevator, mechanical, fire alarm and plumbing services. The Systems Operations section provides campus technical services including central plant and HVAC.

PROJECT MANAGER AS LEADER

A Project Manager is both a manager and a leader, and there are six major responsibilities associated with those roles:

1. **Focus on the Customer**
All projects begin and end with the customer. It is the duty of the Project Manager to understand the needs and expectations of the customer; to develop the project vision



and gain endorsement of it; to plan for customer involvement, communication, and service; and to maintain a meaningful dialogue with the customer during the project.

2. Create the Project Vision

The project vision is the image or understanding of what the project will accomplish as its end result. Having a project vision is crucial to effective leadership and management of any project. In creating the vision, the Project Manager is responsible for planning a route to project completion based on customer needs and expectations; articulating the vision with enthusiasm; and modifying the vision and strategy as needed (but it must not be continually modified since it is the foundation of the customer's needs and expectations).

3. Build and Maintain the Project Team

A strong team is vital to the success of any project. The Project Manager is responsible for helping the Project Team members become an effective working unit. Leadership of the Project Team involves preserving, protecting, and improving the productive capability of people -- the most valuable resource available to the Project Manager. Keys to building and maintaining an effective Project Team include open communications; attending to individual needs; clearly defining roles and responsibilities; and rewarding and recognizing team members.

4. Plan the Project

Once the vision has been defined and agreed upon, and the Project Team formed, focus shifts to planning the project and the elaboration of concrete strategies for achieving the goals of the project. The duties of the Project Manager include developing a work plan in which the customer's vision and definition of the project coincide; involving the appropriate teams, customers and others in endorsing the work plan; and ensuring that all components of the work plan support project delivery and remain aligned with the vision.

5. Managing Resources

Once a project has launched, managing resources becomes a major focus of the Project Manager; that is, keeping a clear grasp of where the project is compared to where it should be at any moment. The duties of the Project Manager as it relates to managing resources includes preparing a realistic budget with sufficient contingencies that is endorsed by the Project Team and customer; preparing a reasonable, flexible schedule that meets the customer's needs; preparing accurate assessments of progress; and maintaining accurate and comprehensive project records.



6. Ensuring Quality

Ensuring quality is a leadership responsibility of the Project Manager and cannot be delegated. The Project Manager must establish appropriate definitions of quality for the project. In order to achieve high quality, the Project Manager must commit time to assess quality issues with the team. A Project Manager can ensure a high-quality project by emphasizing quality management to team members and by setting an example.

BUILDING CUSTOMER RELATIONSHIPS

A “customer” is a person or organization that is the primary user of the end product or service. A “stakeholder” is a person or organization that has a stake or interest in the project. The “executive team” is a group of people that have the final contractual or project cost approval authority.

At the core of a successful project delivery process is a satisfied customer. The foundation of a satisfied customer is the development of a strong, service-focused relationship. It is important to remember that the University is also a customer, and that Project Managers must balance the needs of the University with the needs of the project user.

Successful customer relationships hinge on starting out right. It is critical to know your customer, to be prepared, and to communicate effectively. A Project Manager must work to build commitment and trust with their customers.

The organizational structure of FMC’s project teams is designed to ensure customer focus, leadership commitment, and a collaborative team environment that fosters interdependent participation.

Additional keys to successful project delivery include:

- Well-developed and endorsed project work plan
- Project tools
- Performance measures and metrics
- Constant contact
- Meeting minutes
- Establish and meet your major milestones – if for any reason you cannot, pre-communicate and discuss your project recovery plan internally and with your customer.

The benefits of a well-developed project delivery process are satisfied customers who receive high-quality projects that routinely meet expectations, managed costs, and realistic schedule



goals; and a consistent customer focus that is adaptable to ever-changing demands and challenges.

PROJECT DELIVERY PROCESS

A project is defined as “a temporary endeavor undertaken to create a unique product, service or outcome that has a beginning, requires substantial coordination and effort to accomplish, and has an end.” Identified below are seven major phases in a project process and steps for each phase.

The intent of the project delivery process is to provide a comprehensive roadmap that will ensure appropriate costs, schedules, and quality performance on all University projects. The process has been designed to provide a balanced, systematic approach to planning and delivering facilities improvement projects as well as to incorporate best practices of project management.

STEP 1: NEEDS DEVELOPMENT

The “Needs Development” step in the project delivery process refers to when a project is assigned to a Project Manager in FMC and/or initiated by FMC.

STEP 2: SCOPE DEVELOPMENT

The focus of this step is preparing the initial project scope. This phase includes developing the project definition and vision, establishing the Project Team, defining project objectives and requirements, and project set-up in FMC. At the end of this step, the project will have received all customer approvals and funding authorizations.

STEP 3: SELECTION OF DESIGN TEAM

This phase includes procuring the design products and services required for successful project design delivery. The method of procuring these services is through the Request for Qualifications (RFQ) process. Procurement of design services is also available through the [State of Texas Co-Op Purchasing](#). These services are procured utilizing the guidelines set by the [UHCL Purchasing Department](#). If a commissioning agent will be utilized, this service should be selected parallel to the selection of the design team and engaged throughout the life of the project.

STEP 4: DESIGN PHASE

Effectively managing the design deliverables of a project is a critical role of the Project Manager. This entails continuously monitoring the scope of work being designed and comparing it to the scope of work planned and budgeted. The Project Manager proactively



ensures that the project meets expectations within the defined constraints, including delivering a project on time and on budget and ensuring that the utilities and infrastructure are adequate. As a result of managing deliverables, change may be deemed necessary. All designs should adhere to the UH System Design Guidelines and Standards and/or UHCL standards specific to the project.

STEP 5: SELECTION OF CONTRACTOR

This phase includes procuring the construction products and services required for successful project delivery. Methods of contractor selection include Informal Competitive Bidding, State of Texas Co-Op Purchasing, Formal Competitive Bidding (FCB), and Request for Proposal (RFP). This phase also includes the procurement of Owner Provided Services.

STEP 6: CONSTRUCTION PHASE

As in managing design deliverables, it is critical to continually monitor the work being constructed. This entails continuously communicating and monitoring the scope of work being constructed and comparing it to the scope of work that was designed. The Project Manager proactively ensures that the project meets expectations within the defined constraints, including delivering a project “on time and on budget.” Inspections of work should take place throughout this phase.

As a result of managing deliverables, change may be deemed necessary. Developing appropriate guidelines and processes for addressing change is crucial to a successful project.

STEP 7: TRANSITION, ACTIVATION AND CLOSEOUT

Project transition, activation and close-out captures the last construction-related issues including customer transitions, building systems activation, systems training, administrative tasks (collection/distribution of Operations and Maintenance Manuals, Warranties and all other project documents), financial and contracts closeout, and collecting project evaluations and assessments.

STEP 1: NEEDS DEVELOPMENT

REQUEST RECEIVED

All Facilities Management projects begin one of three ways before being assigned and initiated in FMC:



- ✓ Capital Request
- ✓ Capital Renewal and Deferred Maintenance (CRDM)
- ✓ Work Order

CAPITAL REQUEST

Capital Request Process is the means by which the University identifies proposed building construction or minor renovation projects regardless of funding source. UHCL projects that are greater than \$1 million are assigned to FP&C.

CAPITAL RENEWAL AND DEFERRED MAINTENANCE (CRDM)

The University receives Higher Education Assistance Funding (HEAF) for projects that address maintenance and programmatic renovations. Project requests are submitted by academic units and FMC. The requests are analyzed, estimated, reviewed and prioritized by the FMC Management Team.

Due to funding limitations some requests are identified as an emergency or as needing immediate funding, and also include the proposed cost. If it is an emergency and unable to wait for the next committee meeting, the FMC Management Team will forward the request to the Associate Vice President of FMC for approval. CRDM projects are to be managed like other renovation or capital projects and must follow all proper assignment, procurement, and management guidelines as laid out in this manual and other University policies.

ONLINE WORK REQUEST FORM

The online [Work Request Form](#) is used to request several different services provided by FMC including: renovations, serviceable work, and billable work. After an initial review and analysis by FMC, the request is forwarded to the applicable service area for assignment, creation of an IDT when applicable, and project completion.

STEP 2: SCOPE DEVELOPMENT

CUSTOMER CONTACT

The Project Manager will make initial contact with the customer, to begin the process of defining the project. Once the project scope is better defined, a more detailed budget and schedule will be prepared.



PROJECT ENDORSEMENT

1. After confirming the project scope, the Project Manager is equipped to begin the project estimate. A detailed project budget is prepared and presented to the customer for approval before the project will move forward. A [Project Control Budget \(PCB\)](#) is available to assist with budget development. The initial budgets are refined throughout the planning and design phases and up to the time the project is presented for bidding. It is imperative that all elements of the budget are clearly defined, captured, and developed throughout each phase.
2. A preliminary project schedule that meets the customers' needs should be prepared and should identify key milestones. When preparing the schedule, attention must be paid to approvals, review time, desired delivery date, and construction periods.
3. For all projects, the Project Manager will present a validated/revised PCB and IDT when applicable, as well as a schedule for endorsement by the customer.
4. The PCB is the first step in establishing the total cost of the project and is provided along with a preliminary project schedule based on the customer's critical delivery date.

CONFIRM FUNDING

The FMC Management Team meets annually to plan out deferred maintenance budgets and fiscal year project needs. The Sr. Business Coordinator will then create a journal entry to transfer actual funding from the appropriate cost center into the project cost center and edit the FMC Project Cost Center spreadsheet.

PROGRAMMING/SCOPE DEVELOPMENT

While not all projects have full programs, all projects should have either a Bid Request Form, which includes a complete scope of work, or Program of Requirements (PoR). The goal of programming is to further define the project's relationship with the University as a whole, the mission and vision of the project, the objectives of the project, and to provide detailed information of all identifiable spaces to be constructed or renovated – including exterior features. This information is presented in the PoR.

An important first step is determining whether the PoR should be prepared by in-house staff or by a specialist. Projects of significant size and complexity should have the PoR prepared by either the A/E or a programming specialist. If this service is required by an A/E or specialist, the PM should proceed to Design Team Selection.



The programming process begins with an initial customer meeting and the process continues until the document is approved by the Project Team. Once the PoR is approved by the Project Team identified in the PoR, which includes the customer, it is forwarded to FMC or other University leadership, as applicable.

PREPARE FOR NEXT PHASE

Before moving on to Plan the Project, when the project will officially begin and incur costs, the Project Manager should verify that the project has been endorsed by the customer, including the budget and schedule estimates. The Project Manager should communicate with the customer that the project has been set-up and that funding has been confirmed.

RECORDS MANAGEMENT

Project records, whether electronic or hardcopy, are important records of the work performed by FMC. Project documents must be organized for quick and easy access. It is critical that these records are complete, thorough, and retrievable. A standardized FMC Records Management Process has been developed to assist in filing both hard and electronic project documents. Project records are the responsibility of the assigned PM.

A record is any document, device, or item, regardless of physical form or characteristic, created or received, that serves to provide evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the project.

Some examples of project records are the Project Control Budget (PCB), contracts, change orders, meeting minutes, correspondence, e-mails with directives, payment request, invoices, etc.

A non-record is any document, device, or item, regardless of physical form or characteristic, created or received, that **DOES NOT** document the organization, functions, policies, decisions, procedures, operations, or other activities of the project.

Some examples of non-records are preliminary drafts (when superseded), simple transactional communications, "personal copy," "extra copy," etc.

All records created should be complete, objective, and reflective of concerns for safety, ethics, and compliance with University and state policy, proper business practices, and the law. Ambiguous language, exaggerations, subjective comments, and other remarks that can be misinterpreted should be avoided. Creating personal template tools or forms is not allowed without written authorization from the AVP.

The Project Manager should be proficient with the **file structure** and their responsibilities as they relate to hardcopy and electronic file management of the project.



Using the standard project file structure will:

- Maintain consistency across projects
- Reduce workload by offering a readymade and standardized template
- Ease the alignment of electronic file and hardcopy file structure

It is important that all Project Team members are familiar with **FMC Records Management Guidelines, and the standard filing structure** to ensure consistency in the management of project files. The guidelines address both hard copy and electronic files. Random sampling of project files will occur by the Sr. Business Coordinator or the Administrative Assistant to ensure file and records management compliance.

STEP 3 SELECTION OF DESIGN TEAM

Some projects may not require a design or engineering professional, but many do. The selection of design specialists is a qualifications-based process with the goal to select the most qualified team of professionals for the project. The specialist team includes professionals that are selected to implement the design and construction of the project with input from the Project Team.

The specialist team is most often led by an architectural firm, or in the case of engineering-dominant projects, an engineering firm. In this manual, the lead firm is referred to as the A/E. The A/E may contract with other firms (sub-contractors) for other required design services such as specialized engineers, landscape architects, interior design firms, etc.

Under all circumstances, the University's procurement rules, as well as approved UH System contracting methods must be followed. Procuring the services of the A/E team when the value of services is \$5,000 or greater will be accomplished through the Request for Qualifications (RFQ) process. There may be cases where a Sole Source Justification is needed in lieu of an RFQ. The project manager and AVP will decide if this is acceptable and fill out the [Sole Source Justification Form](#) and submit to the Executive Director of Procurement for signature before a Professional Services Contract is issued.

For additional information related to the State of Texas Contracting methods please reference <http://www.window.state.tx.us/procurement/pub/manual>.

REQUEST FOR QUALIFICATIONS (RFQ)

PREPARE RFQ

The Project Manager begins by preparing a Request for Qualifications (RFQ) outlining the project scope, the services needed, and selection criteria. The current template can be obtained from the Purchasing Department. The RFQ is reviewed by the AVP of FMC. The PM incorporates any edits to the RFQ.



RFQ SUBMISSION PROCESS

The UHCL Procurement Department posts the project on the Electronic State Business Daily ([ESBD](#)) if the value of the A/E service is expected to exceed \$25,000. PM or support staff also posts the job on the FMC website under Projects Out for Bid. This is where the actual specifications are posted for the contractor to download.

The PM conducts a pre-submittal conference and issues addenda, as applicable. PM will perform meeting logistics. After deadline for questions, PM issues final addenda to incorporate all pre-submittal questions. Answers are to be provided by PM at least 7-10 days prior to bid closing.

After bid closing, Project Manager compiles all respondents' proposals, to review qualified submissions, and evaluation criteria. The PM creates and meets with a Selection Committee of University personnel directly involved in the project to review RFQs and select respondents for presentations and/or interviews.

PM will perform logistics and create an interview schedule, addenda, and questions. PM will notify shortlisted firms of the interview date, time, and location. PM develops the interview weighted evaluation criteria. The PM and Selection Committee interviews the specialists.

After the interview, the PM and Selection Committee scores the interviewed firm based on the presentation. The interview scoring and evaluation of short-listed firms are based on information submitted by respondents at interviews in conjunction with the published interview selection criteria. PM calculates results and creates the scoring matrix.

The PM will request a Fee Proposal from the selected firm (typically no more than 10 days after notification). The proposal and summary will include:

- Statement of their understanding of the project, including their understanding of project budget, University and customer goals, and security requirements and concerns
- Detailed description of their project management, control, and delivery approach for the project
- List of sub-contractors
- Preliminary project schedule
- Proposed services (basic and additional), fees requested, and reimbursable expenses
- HUB Subcontracting Plan (if applicable)



- If the vendor selected has not previously provided services to the University, they will have to fill out a [Vendor Set-Up Coversheet, W-9 and Direct Deposit](#) form and fax forms directly to UH System Vendor ID Department at 713-743-0521.

NEGOTIATE CONTRACT

The Fee Proposal begins the negotiation process of the professional services contract. The Project Manager should initiate a meeting between the selected Architecture/Engineering (A/E) firm and the AVP to discuss the proposal and address any issues.

If an acceptable agreement cannot be reached with the selected A/E, or if the appropriate documents have not been provided, then negotiations can begin with the second ranked firm or the project can begin the selection process again.

Fees are negotiated that reflect the scope of services required and deliverables. The proposal must also include the change order fee allowance (percentage). After receipt of an acceptable proposal, the Project Manager prepares a contracts package which includes a cover memo, HUB Subcontracting Plan, fee proposal, and schedule. PM submits to the Administrative Secretary who will assign a FMC Project Number, contract number and draft the Professional Services contract, and signature page. The Administrative Secretary will submit the draft contract to the Project Manager for review and approval. Once the PM reviews and approves, the Administrative Secretary will send to vendor via email for signature.

COMPLETE CONTRACTING

In addition to the contract, the following documents must be submitted:

- Workers Compensation Certificate
- Employers Liability
- Professional Liability Insurance
- Commercial General Liability
- Comprehensive Auto Insurance
- Umbrella Coverage
- Specific coverage amounts can be found [here](#)

Contracts are first signed by the A/E and submitted to the Administrative Secretary via mail or courier. Administrative Secretary prepares contract for signature process and routes to all applicable internal levels. See [Delegation of Signature Authority](#) for signature authorization levels. If for any reason, contract approvals are not achieved, the contract will be re-routed for modifications or will be canceled and closed as applicable to the situation.

Upon receiving all approvals and insurance documents, the Administrative Secretary will prepare the Notice to Proceed (NTP) and send for AVP signature. AVP will route signed NTP



back to the Administrative Secretary who will forward via mail to the successful vendor. Administrative Secretary will notify all unsuccessful respondents. Administrative Secretary will notify purchasing of contract award for reporting to the Legislative Budget Board and HUB Coordinator for HUB reporting. All contract reporting procedures and project file procedures are listed on the [Contract Checklist Form](#).

CONTRACT AMENDMENTS – PROFESSIONAL SERVICES

If a change to the signed [Professional Services Agreement](#) is required, the process to prepare a **Design Change Authorization** (DCA) is initiated by the A/E. The A/E submits a request in writing to the Project Manager outlining the scope of work revisions and applicable adjustments to the fees or reimbursements. The Project Manager should work with the A/E to discuss the scope of work and negotiate the fees for the proposed design change.

The PM will discuss design changes with selection committee, confirm additional funding and then give Administrative Secretary the proposal to create the DCA. Once DCA is fully executed, all contract reporting procedures and project file procedures listed on the [Contract Checklist Form](#) will be completed by the Administrative Secretary.

SELECTION PROCESS – OTHER PROFESSIONAL SERVICES

Similar processes are followed for any other specialists desired for a project or study. Other specialists can include services for:

- Hazardous materials abatement
- Specialized engineering services
- Commissioning
- Emergency Services

For emergency services, contact any FMC Director to issue a purchase request or contract for full emergency response and restoration services.

STEP 4: DESIGN PHASE

DESIGN AND PROJECT KICK-OFF MEETING

With the selection of the A/E, the Project Team will gather to kick-off the design phases of the project which include Programming/Program Verification; Schematic Design; Design Development; and Construction Documents. The purpose of the kick-off meeting is to define the roles and responsibilities of the larger Project Team; to review and gain endorsement of the work plan established during Plan the Project meeting; and to charter the Project Team.



The ability of a Project Manager to conduct effective meetings is a key element for successful projects. Two tools that are helpful in conducting effective meetings are a clear meeting agenda and meeting minutes that accurately reflect the content of the meeting.

1. The **Design and Project Meeting Agenda** should be prepared in advance and distributed to the participants. One of the first steps in any meeting should be to confirm the agenda, and modify it if necessary.
2. The second essential part of proper meeting management is good minutes. Meetings need to be documented, even when actions do not result from the meeting. When actions do result from the meeting, minutes are a way of documenting, communicating, and confirming those actions with the corresponding team member responsible for those actions. If a consulting firm is engaged, the firm should take the meeting minutes. The PM is ultimately responsible for creation and distribution of minutes. This should be done within three (3) days of each meeting. Meeting minutes should include a list of attendees, the major discussion points, conclusions, and action items. It is not necessary to document the entire content of all the discussion, just the resolutions and the action items. Distribution of the minutes should occur within 72 hours of the project meeting.
3. To prepare for the project kick-off meeting, the Project Manager looks at all project work plan elements and develops an agenda in advance to be used during the meeting. The Project Manager typically reviews the work plan contents to understand all actions that have been completed during these processes and the potential actions that are pending.
4. During the kick-off meeting, the Project Manager discusses the details pertaining to the work that needs to be accomplished. Normally, the type of communication that takes place during the session is one-way, with the Project Manager taking the lead role in the communication process. The Project Manager shares the pertinent information and then answers questions from the Project Team members.
5. Below is a list of potential topics to be addressed during a kick-off meeting. Depending on the nature of the project, some topics may or may not apply. The Project Manager will use discretion in the selection of the topics considered pertinent based on the kick-off meeting objectives.
 - Project Scope/Deliverables and Schedule
 - Project Budget
 - Project Site(s) - When appropriate, the Project Manager should use a map or drawing to identify the site(s) or location(s) associated with the project, with the intention of providing the geographical context in which the project takes place. For the project



participants with a need to visit the project site(s), some details regarding site visit protocols should be incorporated into the discussion.

- Project Organization - During the session, the Project Manager can review the Project Team roles and responsibilities to accomplish the project objectives.
- Project Reporting/Document Control - The Project Team needs to understand the project reporting and archiving requirements (i.e., types of status reports, frequency, formats, and audience).
- Environmental Health and Safety (EHS) - Special attention should be paid to any particular hazards in connection with the project.
- Permitting - If permits are required for the project, the Project Manager needs to identify those and the particular instructions for obtaining them. For those projects requiring inspections from outside agencies, specific procedures and standards regarding those inspections may be included as a topic of discussion in the kick-off meeting.

Selecting Attendees

- All Project Team members should be present at the kick-off meeting.
- If a decision is necessary about a particular item on the agenda, ensure that the person or people necessary to make the decision are present and that all necessary information is available.
- If a specialist/contractor is performing a portion of the work, representatives from this company should be present at the kick-off meeting.

PROGRAM VERIFICATION

The RFQ will be compared with the Program of Requirements (PoR) which has been prepared by FMC staff or an outside specialist. Schematic Design will not begin until the PoR and proposed budget have been verified and approved by the appropriate parties.

If the PoR is prepared by a specialist, a conceptual budget based on the PoR must be submitted with the final PoR and must be within the budget established at project initiation. If the budget has increased, additional funds must be identified before final acceptance of the PoR or the program may be reduced.

The A/E will review the entire PoR and verify that it still expresses the University's needs and is up-to-date in every aspect. At the conclusion of Program Verification, the A/E will submit a



summary of any revisions and Statement of Probable Cost that is based on the verified program. Schematic Design cannot begin until the PoR has been prepared and verified.

IN HOUSE DESIGN/PLANNING

A Project Manager may perform in-house design/plan services for small projects.

SCHEMATIC DESIGN PHASE

Schematic Design (SD) is a critical phase where expectations are set and the design budget and schedule are established. Schematic design determines the general scope, preliminary design, and the character, scale, and relationships among the components of the project and the adjacent environment. During this phase, the customer details the specific requirements for the design option developed during programming.

The primary objective of SD is to assure the Project Team that several options have been reviewed and analyzed before a final scheme is accepted for development. The A/E is expected to present different concept and design solutions for consideration that incorporate the master plan, contextual relationships, project goals and University goals. Though not detailed, the A/E must define all mechanical and building systems anticipated for the project.

DELIVERABLES – SCHEMATIC DESIGN

The deliverables for SD include site drawings, floor plans, elevations, building sections, equipment and furniture layouts, massing studies, updated project schedule, updated Statement of Probable Cost, life cycle cost analysis, and project specifications. The A/E must also present a summary of all changes from the PoR.

DISTRIBUTE DELIVERABLES FOR REVIEW – SCHEMATIC DESIGN

The 90-95% SD materials are submitted to the team for review with the [Design Transmittal](#) included. If applicable, a review meeting is scheduled by the Project Manager where written comments from the Project Team are provided and reviewed. The A/E is expected to respond to all comments in writing and submit revised materials as needed before SD is complete and accepted.

DESIGN DEVELOPMENT PHASE

The Design Development (DD) phase refines the scope of work previously approved in the SD phase. In this phase the project is developed to a greater level of detail to define a clear, coordinated description of all aspects of the project. Building systems, building equipment, fire protection, mechanical, electrical, structural, telecommunications, and plumbing are designed



and coordinated through enlarged scale drawings, detailed elevations, and plans. The primary objective of the DD phase is to complete all designs required for the project. This requires the A/E and the Project Team to verify all parts of the design.

The A/E must graphically demonstrate the design to address all exterior and interior architectural and environmental elements as well as site design in order to communicate the total concept. Any change to the project's scope or program after this phase will likely incur negative budget and schedule impacts.

DELIVERABLES – DESIGN DEVELOPMENT

The deliverables for the DD phase must include drawings for architectural and civil disciplines, structural disciplines, plumbing and mechanical disciplines, electrical disciplines, the project manual, final life-cycle cost analysis, updated Statement of Probable Cost, and updated project schedule.

DISTRIBUTE DELIVERABLES FOR REVIEW – DESIGN DEVELOPMENT

The 50% and 100% DD materials are submitted to the Project Team for review with the [Design Transmittal](#) included. If applicable, a review meeting is scheduled by the Project Manager where written comments from the Project Team are provided and reviewed. The A/E is expected to respond to all comments in writing and submit revised materials as needed before DD is completed and accepted.

CONSTRUCTION DOCUMENTS PHASE

The Construction Documents (CD) phase is the last stage of design. The A/E is focused on finalizing the drawings and specifications for all components and systems of the building. A complete set of CDs provides a comprehensive, fully coordinated set of construction drawings and specifications that the A/E and Project Team use to determine the final construction cost, to obtain the necessary permits, and to use as bid documents to construct the project. Because the A/E is responsible for delivering the project as defined at the end of the DD phase, changes to the scope or program in this phase will incur negative budget impact and schedule delays.

The primary objective of the CD phase is to produce bid documents for the various trade contractors. In this stage the final notes, tables, and instructions for execution of the construction for the project is specifically defined into contract phases for prime contractor trades.

During this phase, an interim review is conducted of the drawings and specifications at 50% CD completion for constructability and to identify any conflicts or issues. When CDs are 90-95% complete, a final constructability review is conducted.



The cost information presented by the A/E at the CD phase must be based upon supportive cost information from the updated Statement of Probable Cost prepared at DD.

FINAL REVIEW OF DELIVERABLES

The CD materials are submitted to the team for review. If applicable, a review meeting is scheduled by the Project Manager where written comments from the team are provided and reviewed. The A/E is expected to respond to all comments in writing and submit revised materials as needed before CDs are completed and accepted.

APPROVE FINAL DELIVERABLES

Once the Project Manager verifies that all comments have been addressed and all issues resolved, the cover sheet should be signed by the AVP and the final deliverables accepted, which means the project is ready for bidding.

Once all signatures are received, the drawing set is ratified and the project is deemed to have been sufficiently reviewed, the project is ready for construction.

OTHER REQUIRED DESIGN ELEMENTS

PREVAILING WAGE

A contractor performing construction services for a public improvement project is required to pay the prevailing wage rates of the project locality to laborers and mechanics performing work on the project. The A/E is responsible for using the current wage rates in the bid documents and the contractor must monitor the prevailing wage rates during the construction period.

PLAN APPROVAL AND PERMITS

The A/E is responsible for obtaining the basic state plan approvals for the project from the Texas Department of Licensing and Regulation (TDLR), State notifications and paying all applicable fees as required. Utility or other city impacts will need to be planned for, possibly permitted and integrated into the project plan and drawings which is also the responsibility of the A/E. The A/E is required to secure the Texas Commission of Environmental Quality (TCEQ) approval as applicable to the project, its impact and scope. For small projects where there is no A/E, the Project Manager is responsible for securing any appropriate permits and they must develop a drawing set with coded notes and cover sheet on 11"x17" paper. At the end of the project the PM will be responsible for updating in the appropriate database/resource area.



HUB - HISTORICALLY UNDERUTILIZED BUSINESSES

The Project Manager must ensure that the public bid advertisement includes a HUB goal and that the bid documents and contract documents include appropriate and required information about the HUB program.

STEP 5: SELECTION OF CONTRACTOR

This phase includes procuring the construction products and services required for successful project delivery. Methods of contractor selection include Informal Competitive Bidding (ICB), State of Texas Co-Op Purchasing, Formal Competitive Bidding (FCB) and Request for Proposal (RFP).

1. This phase also includes the procurement of Owner Provided Services. Owner Provided Services are services that the University chooses to self-deliver or manage in house and may vary from project to project.
2. All project costs regardless of source of work (in house or contracted) need to be captured as part of the project accounting record and are part of the total project cost.
3. If equipment is pre-purchased by the owner and stored on University property, it should be reported to EHS for insurance purposes. The contractor is responsible for insurance for any material and equipment stored on campus until turned over to UHCL at substantial completion.
4. For additional information related to the State of Texas Contracting methods please reference <http://www.window.state.tx.us/procurement/pub/manual/>

CONFIRM FUNDING/AUTHORIZATION

At this time it is important to ensure the appropriate funding is available and/or committed to the project (in the case of University bonds or future capital appropriations) and that all appropriate approvals have been received prior to advertising for bids.



Completing Purchase Order for Equipment or Other Provided Services

UHCL PROCUREMENT PROCEDURES

Effective April 1, 2012

\$0 - \$500

Department places orders directly with vendor. Department pays with voucher or procurement card. Procurement will not accept purchase requisitions unless required by vendor.

\$501-\$1,000

Department has the option to place orders using the procurement card, voucher or requisition.

\$1,001 - \$5,000

Department does requisition. Procurement places order and no bids are required however they have the option to bid.

\$5,001 - \$25,000

Department does purchase requisition. Procurement does informal bid.

\$25,001 plus

Department does purchase requisition. Procurement does formal bids and places on state [ESBD](#) website. UHCL Procurement Department posts the construction project bids to the [ESBD](#). FMC Administrative secretary posts the construction project bids to the FMC website. No matter the method of payment we still encourage the use of HUBs whenever possible per state requirement.

There may be cases where a Sole Source Justification is needed in lieu of the Informal Competitive Bid, Formal Competitive Bid or State of Texas Co-Op Purchasing options. The project manager and AVP will decide if this is acceptable and fill out the [Sole Source Justification Form](#) and submit to the Executive Director of Procurement for signature before a Purchase Order or Contract is issued.

All project bids shall comply with the [checklist](#) for Facilities Management and Construction bids. This checklist was jointly developed by FMC and the Procurement Department. Please go to the [UHCL Purchasing Department](#) website for additional information and services.

INFORMAL COMPETITIVE BID PROCESS

For projects under \$25,000 (total project cost) project managers may request Procurement to utilize an **Informal Bid Request** to solicit project bids from at least 3 qualified contractors. The bids should be solicited from 3 qualified contractors, of which 2 should be Texas HUB certified



contractors whenever possible. If they are not, documentation of why should be included. The request must have an attached scope of work with schedule expectations and any other criteria that is pertinent to the performance of the job. This can include in house estimates for work that may be performed from FMC.

Project Manager receives and evaluates the bid, content and ability to meet schedule and select the appropriate contractor after that review. They then prepare the contract package and work directly with the Administrative Secretary to complete the contracting process. Once the contract has been executed the Administrative Secretary should notify the unsuccessful bidders of their non-selection.

STATE OF TEXAS CO-OP PURCHASING

This process can be utilized for construction projects and the contract amount depends on the individual contractor's specifications. This option utilizes pre-selected contracts that are in place to expedite delivery of projects.

FORMAL COMPETITIVE BIDDING (FCB)

Utilize when project scope is less complicated and is fully packaged with complete specifications and drawings. This is common for standard Furniture, Fixture, and Equipment (FF&E) purchases or small renewal projects. Steps are fully outlined in the section titled Prepare Advertisement/ Bidding detailed below.

SELECT CONTRACTOR(S)

The University maintains contractor selection based on best value. Contracts are awarded to the lowest responsive and responsible bidder. "Responsive" refers to the bidder's proposal responding to bid specifications in all material respects and the bid containing no irregularities or deviations from the specifications which would affect the amount of the bid or otherwise give the bidder a competitive advantage. "Responsible" refers to the experience of the bidder, the bidder's financial condition, conduct and performance on previous contracts, management skills, and ability to execute the contract properly. The University often refers to the balance between responsive and responsible as the "best value".

If an apparent low bid is found not to be responsive or the bidder is deemed not responsible, the University shall reject the bid and notify the Bidder in writing of the finding and the reasons for the finding. The bidder may file a written protest and a protest meeting will be conducted. All protest requests must be received prior to contract award. All formal written protest request received will be forwarded to OGC for documentation. Following the protest meeting the University will issue a letter to the protesting bidder by certified mail either confirming or reversing the bid rejection.



REQUEST FOR PROPOSAL (RFP)

Utilize an RFP when project complexity or selection criteria warrant a “best value” determination. Size of project and scope of work may also drive this determination. Final selection will be made based upon weighted matrix criteria. While interviewing is encouraged, an RFP selection may be determined without interviews after Selection Committee scoring when results indicate a clear selection.

PREPARE ADVERTISEMENT/BIDDING

1. All project bids shall comply with the [checklist for Facilities Management and Construction](#) bids; jointly developed by UHCL FMC and Procurement.
2. Projects with a total project budget of \$25,000 or more must be publicly bid.
3. Request for Bids are placed on the Electronic State Business Daily ([ESBD](#)) by the Procurement Department. An Invitation for Bids should be utilized if a complete solicitation document is available and/or the project is relatively simple. An RFP should be utilized if construction documents are available and/or the project contains detail specifications. If documents are posted directly to the [ESBD](#) site or if directed to the FMC site for complete download of plans, the posting can be for a minimum of 14 days. If documents have to be physically picked by bidders then the project has to be posted for a minimum of 21 days. While these timeframes are a minimum requirement, unlimited additional days may be added for more complicated projects. Based on this process the time for posting the selection could range from 3 weeks to several months and should be planned for in the project schedule.
4. The Project Manager, in conjunction with procurement and the A/E, if applicable, will set a time and place for a pre-bid meeting, which will be noted in the bid advertisement. The pre-bid meeting is an opportunity for bidders to examine the site, ask questions and allow potential bidders to attain a complete understanding of the bid documents. A standard [Pre-bid Meeting Agenda](#) is available for use by Project Managers. Any statements made by the A/E (as applicable) or Project Manager during a pre-bid meeting will not be binding. Any changes to bid documents must be made by written addendum.
5. If a potential bidder perceives any conflict, error, omission, or discrepancy on or between any of the bid documents or between the documents and applicable law, the bidder may submit a request to procurement for an interpretation or clarification. Procurement will issue an addendum which will clarify, expand, or correct the bid documents. Drawings will be provided with addendums as needed. Addendums must



be revised and approved by the Project Manager and must be issued no later than 10 business days (excluding holidays and weekends) before the bid opening. Any addendum not issued in this timeframe will not be binding.

6. PM conducts a pre-submittal conference as applicable. PM to perform meeting logistics. After deadline for questions, PM issues final addenda to incorporate all pre-submittal questions. Answers provided by PM at least ten (10) days prior to bid closing.

After bid closing, PM and a Selection Committee review the respondent RFPs, compile evaluation results and forwards to AVP for approval.

7. Upon AVP response of approval or recommended action, PM will perform logistics and create an interview schedule, agenda, and questions, if an interview is required. PM will notify shortlisted firms of the interview date, time, and location. The PM and a Selection Committee develop the interview weighted evaluation criteria. A copy of the questions and interview criteria must be sent to the shortlisted firms prior to the interview.

INTERVIEW/SELECT CONTRACTOR

After the interview, the PM and Selection Committee score the interviewed firm based on presentation. The interview scoring and evaluation of short-list firms are based on information submitted by respondents at interviews in conjunction with the published interview selection criteria. The PM calculates results and creates the scoring matrix. The PM and AVP review the matrix for final approval.

COMPLETE CONTRACTING

The Project Manager prepares a contracts package which includes a cover memo, PCB, HUB Subcontracting Plan, proposal package and schedule. The Project Manager will forward contracts package to the AVP for review. Once reviewed by the AVP, the PM submits to the Administrative Secretary who will assign a contract number and draft the Owner Contractor Agreement contract, and signature page. The Administrative Secretary will submit the draft contract to the Project Manager for review and approval. Once the PM reviews and approves, the Administrative Secretary will send to vendor via email.

In addition to the contract, the following documents must be submitted:

- Workers Compensation Certificate
- Employers Liability
- Professional Liability Insurance



- Commercial General Liability
- Comprehensive Auto Insurance
- Umbrella Coverage
- Performance Bonds (Contracts over \$50,000)
- Payment Bonds (Contracts over \$100,000)

Contracts are first signed by the Contractor and submitted to the Administrative Secretary via mail or courier. Administrative Secretary prepares contract for signature process and routes to all applicable internal levels. See [Delegation of Signature Authority](#) for signature authorization levels. If for any reason, contract approvals are not achieved, the contract will be re-routed for modifications or will be canceled and closed as applicable to the situation.

Upon receiving all approvals and insurance documents, the Administrative Secretary will prepare the Notice to Proceed (NTP) and send for AVP signature. AVP will route signed NTP back to the Administrative Secretary who will forward via mail to the successful vendor. Administrative Secretary will notify all unsuccessful respondents. Administrative Secretary will notify Purchasing of contract for Legislative Budget Board Reporting and HUB reporting.

CONTRACT CHANGE ORDERS – CONTRACTOR

If a change to the signed [Owner Contractor Agreement](#) is required, the process to prepare a [Change Order](#) is initiated by the Contractor. The Contractor submits the [Change Order](#) request to the Project Manager outlining the scope of work revisions and applicable adjustments to the fees and schedule. The Project Manager should work with the Contractor to discuss the scope of work and negotiate the fees and schedule for the proposed change.

The PM will discuss the Change Order request with selection committee, confirm additional funding and then give Administrative Secretary the proposal to create the [Change Order](#). Once the Change Order is fully executed, all contract reporting procedures and project file procedures listed on the Contract Checklist Form will be completed by the Administrative Secretary. If the change order amount is more than \$100,000.00 an additional signature sheet is attached to the change order to be signed by the appropriate signees.

STEP 6: CONSTRUCTION PHASE

The management of construction deliverables should be considered during the planning phase of most projects. As team members are assigned and roles are identified, the personnel responsible for delivering the construction phase of the project should, where appropriate, become involved in the planning process.

It is important to note that each project is unique and team members should have flexibility to modify roles to best utilize skills and abilities.



FMC Project Manager: The initial project planning effort should identify how the project management duties will be delivered throughout the project. The Project Manager has primary management responsibilities for project related items.

CONSTRUCTION KICK-OFF (PRE-CONSTRUCTION MEETING)

Also referred to as the Pre-Construction Meeting, this is a time for the Project Team to meet to review the project scope, review the work plan and define roles and responsibilities for all team members. Project site logistics are discussed, and safety and emergency processes are outlined. A standard Pre-Construction Meeting Agenda is available for use by the Project Manager. Required UHCL attendees for Pre-Construction meeting would be PM, EHS representative, Police Department representative, and FMC Director or representative whose department is affected by project scope.

Construction contractors must submit several items that were specified in the Notice to Proceed. The Schedule of Values must be submitted and approved prior to the first payment request. A Safety Plan should have been filled out by Contractor and emailed back for distribution to EHS and members of the project team.

REVIEW DELIVERABLES

A complete review of the project scope and drawings should occur to ensure proper understanding before construction begins. Often this occurs as part of the Construction Kick-Off Meeting. During this time FMC staff should become familiar with and review the deliverables of all other Project Team members, including the prime contractors, and the A/E. Items to review include but are not limited to:

- Contractor's scope of work and Schedule of Values
- Subcontractor and Material Suppliers
- Baseline construction schedule
- Review of any phasing or special user requests or requirements
- Progress meeting and coordination meeting schedule and attendees
- Issuance of required permits
- Review of A/E and contracts and deliverables

MANAGE DELIVERABLES

The prime contractors are responsible for the purchase of all components included in the CDs, unless specified as owner supplied/owner provided, coordinating their delivery and installation, and facilitating the inspection process to achieve building occupancy. It is the responsibility of



the Project Manager to monitor and manage the performance of the contractors and A/E for adherence to University guidelines and processes. Items to be aware of and manage include but are not limited to:

- Monitor contractor performance of project safety requirements
- Participate in progress, coordination and Owner-Architect meetings
- Review and approve monthly pay applications
- Review monthly schedule updates
- Review status of As-Built drawings
- Coordinate special inspections and University required outages and permits
- Review and distribute shop drawings and submittals
- Review process for Requests for Interpretation (RFI) and [Change Orders](#)

During the construction phase it is often necessary to coordinate with other University entities that provide some type of service to the project or that will be affected by the construction, such as:

- FMC Utilities for planned shut-offs, unforeseen damage to lines, tie-ins, etc.
- UCT for communication lines to the construction trailer, for final connections to the University network, etc.
- Director of Building Maintenance for shut-offs, contractor access to mechanical or electrical spaces, existing system information, etc.
- UHCL Police Department Locksmith for contractor keys, for installation of final lock cores, etc. This will be delegated through a FMC security delegate.
- Director of Grounds Services for consultation on tree protection, plantings, acceptance of lawns, irrigation, etc.
- UHCL Police Department for road shut downs, special delivery coordination, contractor parking, etc.
- Building occupants to keep them informed of construction activities that will affect their building
- Environmental Health and Safety for life safety issues and UHS Fire Marshal for fire code coordination.



Utility Outage requirements should be discussed and scheduled as soon as possible after the Notice to Proceed is issued. The request should be submitted at least 5 days prior to the anticipated outage date and the extent of acceptable outage depends on which utility is involved.

EVALUATE DELIVERABLES

1. Throughout the course of construction, the Project Manager, A/E, and prime contractors meet regularly (weekly, bi-weekly, etc.) to report on the construction activities, and to track submittal status, RFIs, budget, and schedule. This is also a time to resolve conflicts and contract document discrepancies. The Prime Contractor's Project Manager will set the agenda, lead the meetings and document the decisions and outcomes of the meetings. In addition to periodic project meetings, special meetings may be called to address particular situations, consider specific problems, and develop unique solutions. These special meetings may require attendance by the customer and representatives of the Project Team. Minutes of all meetings are to be issued within three working days.
2. A critical function of the Project Manager during construction is to manage the scope of the project in an effective way. This includes continuous monitoring of the scope of the work being performed in accordance with the contract documents and requirements. The Project manager should use the tools included and referenced in this Project Delivery Manual, as well as the expertise of other FMC personnel to manage the process.
3. Once work is 80% complete, the contractor must arrange for inspections of the work with the appropriate University entity. Upon completion of all inspections, the Fire Marshal will issue a Certificate of Occupancy or written verification of acceptance. The Project Manager should keep a copy of this within the project file.

PROJECT CONTROLS AND MANAGING CHANGE

1. Scope creep can be defined as the slow, continuous growth of a project beyond its original work contents and objectives. Several indicators put up red flags when scope starts to creep. But because these same red flags can also be indicative of other problems in the project, take care when reaching a conclusion as to the root cause of a particular condition. One of the key indicators is, of course, project timing. When timing starts to slip for no identifiable reason, growth in the scope of the program should be suspected. Similarly, if the project budget starts to overrun, without other identified reasons, the Project Manager should determine if more work is being done than was originally agreed to and budgeted.



2. Keeping control of a project involves carefully managing the work plan to keep it moving forward smoothly, including budget, schedule, costs, and status. Effective management allows Project Managers to gather information so that measurements and adjustments can be made to predict progress so that the project's goals can be accomplished. Project controls enable Project Managers to communicate project progress and changes to team members, management, customers and stakeholders, and gives Project Managers the justification for making any adjustments to the plan. It also enables Project Managers to measure current progress against the original work plan.
3. Once the execution of the project begins, potential changes to the project need to be managed. Ideally, changes that develop in the project should be recognized and acted upon in a proactive manner rather than waiting for them to happen and then reacting to them. During many projects, changes are not recognized because of the focus on completing the tasks at hand.
4. *Schedule Impacts*
 - a. Delays in completing a project are often the culmination of a number of events. The Project Manager must work with the A/E and/or contractors to monitor the schedule closely and work to resolve issues in a timely manner. The Project Manager is responsible for continually communicating with the end users, sharing status of construction progress, updates from project meetings and addressing concerns and questions related to the project.
 - b. Delays can be caused by the owner, the contractors or other situations. If there are concurrent delays, one for which the owner is responsible and one for which the contractor is responsible, no damages are pursued or awarded. Time extensions may be granted to contractors with no monetary compensation, such as in the case of delays due to severe weather or other situations where the contractor is not responsible. Such time extensions are approved as a [Change Orders](#). **PM should reference the contract for detailed information concerning delays.**
 - c. The acceleration of work is the act of requiring work to be performed prior to the approved schedule to accommodate or reflect delays beyond the control and through no fault of the contractor (i.e. severe weather). The contractor may request a [Change Order](#) for acceleration. All schedule modifications, including acceleration, must be reviewed and approved by the PM prior to execution of change.
 - d. When considering a change, the A/E or Project Manager will determine the cost or impact the changes may have on a project. The A/E or Project Manager will recommend justifiable changes to the customer and will include a cost estimate.
 - e. Several options for the basis of a [change order](#) are available and explained below:



All Project Managers should categorize the reason for change and track the percentage of [change orders](#) and rationale for changes.

Error/Omission: A change caused by an error on the contract documents or missing scope or omission that was intended to be included in the contract documents or should have been included within the “standard of care” of the profession. This could be missing scope in the document even though it may have been included on the technical specifications or drawings. Errors and Omissions that exceed 2.5% of the total construction cost are considered excessive and should be reviewed for remedy.

Field Resolution: This is most often associated with disputes between contractors or between a contractor and the University. It could be used to redistribute funds when a contractor affects the work of another or the project requires supplementing the work of a contractor.

Value Engineering: Reducing scope in order to reduce the cost of the project. Some contracts may actually increase while others decrease but the overall cost of the project is reduced.

Differing Condition: This refers to a condition that would not have been anticipated by the A/E or Contractor within the “standard of care” of the profession. This is more often in a renovation where existing conditions could not be predicted.

Other: Conditions that do not fit the other definitions.

Customers may also request additional work. Additional funds and Certifying Authority approval for User Requested [Change Orders](#) must be provided prior to execution.

1. Project Budget Increases - If changes to the project budget result in an increase, the increased project budget must be approved by the appropriate parties.
2. Disputes and Contractor Termination – refer to the contract and general conditions to receive more information on disputes and contractor termination. OGC should be consulted before any claims are resolved or contractors terminated.

APPROVE DELIVERABLES

Throughout construction the A/E and Project Manager will review and approve a number of contractor deliverables. Some of these items include but are not limited to:

- Identify work that does not conform to the contract documents and implement corrective actions.
- Review and approve monthly pay applications
- Review monthly schedule updates and endorsements



- Review and distribute record documents and Maintenance and Operation (M&O) Manuals
- Document completion of the contractor's punch list

Ultimately, it is the responsibility of the PM or equivalent to effectively use the expertise and experience of internal management staff in a way that provides continuity to the project while allowing day-to-day control of the project to be delegated.

If the procedures outlined in previous sections are followed, it can be expected that the management of the construction phase of FMC projects will be completed by informed team members. These team members will possess the necessary tools and information to contribute to the success of the project.

APPROVE PAYMENT REQUESTS

Contractor payments are submitted monthly and should be reviewed and approved according to the **schedule of values** received at the start of construction by the contractor. Payment Requests are first submitted to the PM and date stamped upon receipt. Timely approval of payment requests is important. All invoices should be submitted with the following information:

- Contract Number
- Project Number
- Project Name
- Project Manager
- HUB Subcontracting Plan

If the Project Manager does not approve the invoice for any reason, the PM will initiate the [FMC Returned Invoice Transmittal](#) which should be documented for the permanent record. The Contractor will resolve the issues with the pay application or invoice and submit a corrected copy. The corrected copy must note all the information above and be titled with the word "CORRECTION".

It is the responsibility of the A/E or PM to verify the following information on payment requests: the percent complete per line item is acceptable (including [change orders](#)), stored material (may require a visit to the storage location), and retainage in accordance with the General Conditions.

The PM is responsible for verifying the following information:

- The Schedule of Values is approved prior to the first payment request being processed
- Invoices for new stored material being billed have been received
- Material stored does not exceed the total line item amount of the Schedule of Values, including the percent of material billed to date



- A/E and Project Manager signatures have been received
- Retainage is calculated correctly

The Project Manager will review the payment requests for critical items for the percent complete to date and accuracy and sign and date pay application. Administrative Secretary will also review pay application and create voucher.

STEP 7: ACTIVATION, TRANSITION AND CLOSEOUT

COMMISSIONING AND ACTIVATION

Some projects may conduct a commissioning process. The commissioning process is the verification of the performance of building systems and the training of Maintenance personnel. Systems to be commissioned vary according to project type but most typically involve the HVAC system. Commissioning is usually the responsibility of the contractor and must occur before occupancy of the building.

Activation Activities Include:

- Providing adequate stock
- Ensuring a transitional and operational plan is in place with FMC and the customer
- All fire and life safety requirements have been met
- Building systems have been tested and commissioned
- Building systems equipment training has been conducted and documented
- UCT communication services have been established
- TDLR inspection has been requested,
- Locks, key, access plan and way finding completed
- Furniture delivered and installed
- See [FMC Contract Completion Check List](#)

CUSTOMER TRANSITION

1. Near the end of the construction phase the Project Manager should initiate customer transition meetings between the Project Team, Operations staff, building occupants, and other University personnel that are involved in the day-to-day operations of campus buildings and grounds. The purpose of these meetings is to review the project status and discuss the operational needs and issues once the project is complete and the facility “turned over” to the departments that will occupy and maintain the facility.
2. The customer transition meetings should begin prior to substantial completion (depending on the complexity of the project). This will allow time to identify and resolve



key issues prior to the completion of the project. Meetings should continue on a regular basis until the project is complete and occupied. A follow up meeting should also be conducted just before the warranty expires (11 months after substantial completion).

3. Customer transition meetings should not wait until construction is complete. It is important to begin early to allow adequate time to address issues or prepare agreements prior to building occupancy and turnover to FMC and other University departments.

FINAL DELIVERABLES

The Contractor must deliver all M&O manuals to the Project Manager for review prior to the demonstration period. The Contractor must schedule and manage the equipment start up demonstration. Also, all extra building materials (also known as "attic stock") must be delivered after the final punch list work is completed and accepted. Attic stock should be secured and managed by FMC.

PUNCH LIST

One important item in completing construction is the preparation of a punch list. The punch list is commonly understood to be a list made near the completion of the construction work indicating items of work that remain unfinished, do not meet quality or quantity requirements as specified or are yet to be performed by the contractor prior to completing the terms of the contract. The contract must resolve all punch list items within 30 days of substantial completion.

The Project Manager should plan ahead and be fully aware of the specific contractual requirements that relate to punch list items and to substantial completion as these items are closely related.

The Project Manager should assess the overall quality of items on the punch list. If the list is excessive, then there is likelihood that the project is not truly substantially complete.

RECORD DOCUMENTS

The record documents are a record of formal change orders as well as modifications required to construct the facility. The contractor turns over the as-built drawings to the A/E or Project Manager as part of construction close out. The [FMC Space Update Form](#) should accompany all projects involving space changes. Space Updates and signage are managed by FMC.

It is important that all Project Team members are familiar with FMC's Records Management Guidelines, to ensure consistency in the management of project files. The guidelines address both hard copy and electronic files.



A complete project record is required and must be completed prior to administrative closeout.

FINAL ENDORSEMENT AND OCCUPANCY

Upon receipt of a Certificate of Occupancy or Temporary Certificate of Occupancy from the Fire Marshal, the Project Manager completes the [Certification of Substantial Completion](#) and submits to the Prime Contractor. The facility or area may be occupied and the warranty period begins. The Project Manager will provide a copy of the Certification and Notice of Occupancy to Police Department, UCT and the office of EHS for the purpose of risk management and insurance. This notification relays that the building has now been turned over to the University and should be included in any applicable insurance policy for the University.

The warranty period is normally a one-year period after receipt of the Certificate of Substantial Completion. During this time the goal is to provide consistent tracking and addressing of issues that occur during the warranty period. As issues arise after move-in, the Project Manager will work with FMC in determining the responsible party. Contractor issues are immediately referred to the appropriate contractor for corrections; design issues are referred to the A/E for disposition. FMC holds the warranties and is the responsible party in maintaining the facility.

Warranty reviews are conducted by the Project Team after the first growing season for landscape and eleven months after occupancy for equipment and other building items. At the end of the warranty period, FMC will assume full control of the facility. Extended warranty items will continue to be addressed between the Project Manager and FMC until the expiration of those warranties. Warranty items and scheduled walk-throughs will be tracked through the Work order System. First year walk thru will be conducted with Contractor, A/E, User Reps and FMC Reps.

FINAL PAYMENTS

After the A/E or Project Manager confirms that the contractor has completed all punch list items, the A/E or PM will recommend that the project be formally accepted by signing the Contractor's final payment request. Final payment requests (billing for 100% contract completion) are approved by the AVP. Billing for release of retainage must be received separately from the final payment request. When prime does not self-perform all work, the PM will ensure a release of liens certificate is produced. This is normally produced by the contractor and signed by the subcontractor(s).

CLOSE THE PROJECT

Project close out activities are not linear and often overlap when moving from Construction to Activation, Transition and Close-Out.



Administrative and financial closing consists of performing those tasks intended to close the project from a financial and contractual standpoint. By doing so, the Project Manager confirms that all project work tasks and deliverables have not only been completed but also accepted and that after the final invoice is paid no other charges or costs will be posted for the project.

Close out activities revolve around:

- Checklist completion
- Vendor evaluations
- Project assessment

PROJECT CHECKLISTS

There are three main checklists that will assist the Project Manager with project close out.

- A/E Contract Completion Checklist
- Project Delivery Checklist
- [Close the Project Checklist](#)

The A/E Contract Completion Checklist is completed by the Project Manager and is required to be completed and submitted with the A/E's final payment application. The Project Manager is responsible for reviewing the checklist and verifying all items have been completed before approving the final payment.

The Project Delivery Checklist is a comprehensive checklist that can be used from the beginning of a project. This is not a required checklist but should be used as a reference throughout the project and close out. The Project Manager should conduct a final review of the Project Delivery Checklist to verify all project steps and tasks are complete.

The [Close the Project Checklist](#) is required to be completed by the Project Manager, Administrative Secretary and Sr. Business Coordinator. The first section of the checklist is completed by the Project Manager. All items must be completed before the project can be moved to "Administrative Close Out." The Project Manager will verify all items are complete.

The Project Manager must confirm that all work deliverables have been completed and accepted. After the final invoices, no other costs will be incurred. The Project Manager must complete their section of the [Close the Project Checklist](#) and the PM or equivalent is ultimately responsible for verifying the completion of all required steps to move a project from Post Construction to Administrative Close Out.

Once a project is in Administrative Close Out, the Project Manager's direct role is complete and it is up to Senior Business Coordinator to complete administrative and financial close out. The PM will monitor this process and follow up as necessary.



The Administrative Secretary and Senior Business Coordinator work together to complete their section of the Close the Project Checklist. Once all items have been completed the project status can be changed to “Closed.”

PROJECT FILE ARCHIVE

Ideally, project document filing will be conducted and completed throughout the life of the project. Documents that were not filed during the project should be organized according to the FMC Records Management Process so they can be easily combined with documents already in the project files.

The Administrative Secretary will work with the Project Manager to prepare documents for final filing and archiving. The electronic files are moved to the “Closed” section of the network drive and are marked “read only.” Hard copy files are moved to permanent storage for at least 10 years.

CLOSE OUT CHALLENGES

- Claims: All claims must be resolved before final invoices can be approved for the vendor involved in any claim.
- Complete deliverables: Final payments should not be approved if all deliverables are not complete or have not been received.
- Professional Services payments: There are several things to verify before approving a final payment for professional services. In particular, the Project Manager must verify that the record documents have been received and are readable. Also, any remaining balances on the contract must be closed. Final payments should be marked “Final.”
- Internal billings: The Project Manager is responsible for contacting the appropriate department (UCT, Building Maintenance, and Police Locksmith) to verify that all billings have been processed and then notify the Senior Business Coordinator for any open balances to be reduced. For more information on the FMC Project Delivery Process please visit the Planning Design and Construction area of the [FMC website](#).



APPENDIX 1: PROJECT ACRONYMS

Acronyms Glossary	
A/E	Architect, Engineer or Team Combination
BOR	Board of Regents
CD	Construction Documents
CSP	Competitive Sealed Proposal
CRDM	Capital Renewal and Deferred Maintenance
DD	Design Documents
DIR	Director
ED	Executive Director
EHS	Environmental Health and Safety
ESBD	Electronic State Business Daily
EVP	Executive Vice President (Administration and Finance)
FF&E	Fixtures, furniture and equipment
FMC	Facilities Management and Construction



FPC	Facilities Planning and Construction
HUB	Historically Underutilized Businesses
HEAF	Higher Education Assistance Funds
IBR	Informal Bid Request
ICB	Informal Competitive Bids
IFB	Invitation For Bid
M&O	Maintenance and Operations
MEP	Mechanical, Electrical and Plumbing
NTP	Notice to Proceed
OGC	Office General Counsel
PCB	Project Control Budget
PDM	Project Delivery Manual
PM	Project Manager
POR	Program of Requirements
PSA	Professional Services Agreement
RFI	Request for Information



RFP	Request for Proposal
RFQ	Request for Qualifications
SC	Selection Committee
SD	Schematic Design
THECB	Texas Higher Education Coordinating Board
UHCL	University of Houston-Clear Lake



APPENDIX 2: PROJECT DEFINITIONS

Addendum	An addition or supplement to a solicitation document issued prior to the opening date.
Bid	To make a public announcement of the intention to purchase goods or services.
Bid Opening	The public opening of bids, in which the names of the bidders responding to a bid solicitation and prices of the bidders are publicly read and recorded.
Bid Tabulation	The recording of bids, in which names of the bidders responding to a bid solicitation and prices of the bidders are publicly read and recorded.
Bidder	An individual or entity that submits a bid. The term includes anyone acting on behalf of the individual or other entity that submits a bid, such as agents, employees and representatives.
Bidder List	A list of potential contractors who have expressed an interest in doing business with the State of Texas.
Biennium	The two (2) year period in which the Texas Legislature appropriates funds. The biennium begins on September 1 of odd numbered years.
Bond Funds	Bond funds are allocated to earnings and administrative units through a biennial request process.
Capital Plan Projects	Projects approved in the University capital plan, or by executive management.



Competitive Sealed Bid	The process of advertising an invitation for bids (IFB), conducting a public bid opening and awarding a purchase order/contract to the lowest responsive, responsible bidder in accordance with state law.
Competitive Sealed Proposal	Process of advertising a request for proposal (RFP), the evaluation of submitted proposals and awarding the contract.
Construction Contingency	Money held as soft cost funds to assist in any monetary issues that may arise after the project is bid. The amount held varies, primarily because of complexity and phasing of the project but is normally budgeted at 10 percentage of the construction costs.
Contract	A written agreement where a contractor provides goods or services in accordance with the established price, terms and conditions.
Contract Administration	This generally refers to the processes that occur after a contract is signed.
Contractor	A business entity or individual that has a contract to provide goods or services to the State of Texas. Used interchangeably with the term Vendor.
Contracts Management	This refers to the entire contracting process from planning through contract administration.
Cost Estimates	An estimate of the cost of any construction work or renovation related to existing space. The completion of a cost estimate does not guarantee or imply project approval.



Customer	A person or organization that is the primary user of the end product or service.
Deliverable	A unit or increment of work required by the contract, including such items as goods, services, reports or documents.
Design Contingency or Estimating Contingency	Money held as hard cost funds to assist in covering costs that cannot be anticipated during the design period. Generally, this amount starts between 6-9 percent during SD, reduces to 6 percent during DD and ends at 0 percent when the final estimate is established and prior to bidding.
Differing Condition	This refers to a condition that could not have been anticipated within the standard of care for the profession. This is more often in a renovation where existing conditions could not be predicted.
Electronic State Business Daily	The electronic marketplace where the State of Texas bid opportunities over \$25,000 are posted. See procurement manual http://www.window.state.tx.us/procurement/pub/manual
Error/Omission	A changed caused by an error on the contract documents or missing scope or omission that was intended to be included in the contract documents or should have been included in the contract documents or should have been included within the standard of care for the profession.
Executive Team	Final contractual or project cost approvals.



Field Resolution	Most often associated with disputes between contractors or between a contractor and University. It could be used to redistribute funds when a contractor affects the work of another or the project requires supplementing the work of a contractor.
Goods	A transportable article of trade or commerce that can be bartered or sold. Goods do not include services or real property.
Historically Underutilized Business	A minority or women-owned business as defined by the Texas Government Code, Title 10, Subtitle D, Chapter 2161.
Invitation for bids (IFB)	Procurement process used when the requirements are clearly defined, negotiations are not necessary and price is a major determining factor for selection. The IFB uses competitive sealed bid method.
Local Funds	Donor funds and unit or departmental funds typically used for augment state appropriations or bond funds to complete a project.
Major Consulting Services Contract	A consulting services contract for which it is reasonably foreseeable that the value of the contract will exceed \$25,000.
Major Contract	A contract that has value of at least (1) Million dollars during the original term of the contract not including any renewal periods.



Negotiations	A consensual bargaining process in which the parties attempt to reach agreement on a disputed or potentially disputed matter. In a contractual sense negotiation means the "dealings conducted between two more parties for the purpose of reaching an understanding".
Owner Request Other	An increase in the scope of the program beyond what was anticipated for inclusion in the contract documents that is requested by and only benefits the user of the facility. Examples include additional cabinets, moving a wall and requesting better finish materials.
Payment Bond	A bond executed in connection with a contract which secures the payment requirements of the contractor.
Performance Bond	A surety bond which provides assurance of a bidder's performance of certain contract. The amount for the performance bond shall be based on the bidder's annual level of potential monetary volume in the state purchasing program.
Professional Services	Services directly related to professional practices as defined by the professional services procurement acts.
Project	A temporary endeavor undertaken to create a unique product, service or outcome that has a beginning, requires substantial coordination and effort to accomplish, and has an end.



Proposal	An executed offer submitted by a respondent in response to an RFP and intended to be used as a basis to negotiate a contract award.
Proposal Opening	The public opening of bids, in which the names of the bidders responding to a bid solicitation and prices of the bidders are publicly read and recorded.
Purchasing Department	The office designated to purchase goods and services for a state agency.
Repair and Renovations	Includes work such as painting; carpeting; adding, removing or moving walls; and adding or removing utilities in space that is already assigned to the unit. A cost estimate will be prepared as part of the processing of this type of request.
Request for Information (RFI)	A general invitation to contractors requesting information for a potential future solicitation. The RFI is typically used as a research and information gathering tool for preparation of a solicitation.
Request for Information (RFI)	Initiated by contractor to confirm detail in specifications or construction drawings, or to communicate omission typically answered by A/E or University.
Request for Proposal (RFP)	A solicitation requesting submittal of a proposal in response to the required scope of services and usually includes some form of a cost proposal. The RFP process allows for negotiations between a proposer and issuing agency.



Request for Qualifications (RFQ)	A solicitation document requesting submittal of qualifications or specialized expertise in response to a scope of services required. No pricing is solicited in an RFQ.
Request for Quote	An informal solicitation document requesting pricing on a small dollar purchase.
Respondent	An entity submitting a proposal in response to a solicitation (See bidder).
Responsible	The respondent has the capability to fully perform in accordance with the contract requirements.
Responsive	The respondent has complied with all material aspects of the solicitation document, including submission of all required documents.
Service	The furnishing of labor by a contractor which may or may not include the delivery of a tangible end product.
Signage Request	Interior, exterior, commemorative plaques, building directories and studies.
Solicitation	A document requesting a submittal of bids or proposals for goods or services in accordance with advertised specifications.



Space Request	For new, additional or replacement space or to relinquish current assigned space based on assignable SF (ASF). This could include on-and-off campus space, space owned by UHCL, and/or space owned by non-UHCL entities. Some of the options to satisfy your request for space could involve additional costs or fees.
Stakeholders	Representatives that have indirect influence on the project.
State	The State of Texas.
State Agency	An agency of the State of Texas as defined in Texas Government Code 2056.001.
Study Request	For any type of study, such as a feasibility study for a building renovation or new facility, an engineering/technical study; a physical planning study, such as a master plan, land use or study of a specific geographic area or physical campus issue.
Value Engineering	Reducing scope to reduce the cost of the project, finding the second right answer to bring the project back in budget.
Vendor	A business entity or individual that has a contract to provide goods or services to the State of Texas.