

Instructions to Design Professionals

The Project Team, Roles, and Responsibilities:

Architect/ Engineer (A/E): The A/E includes all prime design professionals with whom VUMC enters into an agreement for design services and their consultants. The A/E acts in VUMC's best interest as the design lead for the project team. The A/E may be a multidisciplinary firm providing comprehensive services or a single-discipline consultant contracting directly with VUMC. Responsibilities are defined in this document along with other documents. The A/E is to be aware of the content of these documents and review questions regarding the project with the Project Manager.

The lead design professional is to provide for supporting consulting services as appropriate for the project (sub-consultants may include civil, structural, mechanical, life-safety, communications and information technology, equipment planners, electrical engineering services and/or landscape architecture services.) The consultant's drawings and specifications are to be coordinated and presented for review by VUMC at the end of each design phase. Each of the consultants shall be registered to practice in the State of Tennessee. VUMC reserves the right to reject any consultants proposed by the lead A/E.

Project Manager (PM): The PM is VUMC's representative from Planning • Design • Construction. The PM is assigned to each project and is the primary agent, contact for all parties, and represents the interest of VUMC throughout all phases of the work. The PM approves payment, and with the support of the A/E and CM, tracks all project expenditures and changes to the scope and/or schedule.

Construction Manager (CM): VUMC may elect to engage a Construction Manager, who is responsible for the execution of the work in accordance with the contract documents prepared by the A/E, adhere to the project construction schedule and budget, and manage sub-contractors. If VUMC selects a Construction Manager prior to the completion of the contract documents, the A/E is to cooperate fully with the CM and provide periodic updates of drawings and specifications to the CM as required. The contractor may be asked to perform construction feasibility reviews, investigate cost savings and value engineer opportunities, and may be involved in pre-construction activities.

Project Communication:

Meetings:

Owner, Architect, Contractor (OAC): The PM will schedule regular occurring OAC meetings. The A/E or CM coordinates the agenda items for all meetings and forwards to the PM at least 48 hours prior to the meeting. The A/E or CM is responsible for the writing and distributing meeting notes as described in the Agreement.

Pay Application: The CM will request pay application meetings by sending meeting request form to pdcaadmin@vumc.org. The PM, architect, and CM are required to attend these meetings.

Approval Letter: The CM will request approval letter meetings by sending meeting request form to pdcaadmin@vumc.org. The PM, architect, and CM are required to attend these meetings.

Progress Meetings: These meetings are to review project progress and discuss project issues with the PM, user group representatives, and/or other required.

Project Directory: Using the standard VUMC template, the A/E is to assemble and maintain the project directory throughout the project. This directory is to include a listing of all primary contacts, decision-makers, discipline leads for the A/E, CM, all consultants, and key VUMC personnel.

Invoicing: During the course of the project the A/E is to submit monthly invoices for payment. Invoices should be sent directly to VUMC Cost Accountant (pdcfinance@vumc.org). All pay applications or reimbursable expenses are to be identified by the project title.

Project Phases:

Professional design and/or consulting services are accomplished by successive phases. Typical phases of a capital project are: Pre-Design / Programming Phase; Schematic Design Phase; Design Development Phase; Construction Documents Phase; and Construction Administration Phase (including bid, negotiation, and award). Each phase of work is based upon the previous, approved phase.

Upon completion of each phase of a capital project, the PM will arrange a presentation meeting with the appropriate parties. The A/E is to submit the required copies of the appropriate documents in advance of this meeting, as directed by the PM.

At the end of each phase, progress documents are to be distributed through the PM for review and approval, by appropriate parties. The A/E is to provide written responses to these comments to the PM and receive acknowledgement of the responses and authorization before proceeding.

Project Schedule Information:

As a basis for developing the project fee and schedule, the A/E is to note the following typical schedule requirements. Note also that many of these issues and reviews are pursued concurrently.

Schematic Design Phase: During Schematic Design, the A/E is to create initial design documents to define and convey the scope of work. In consultation with the VUMC programmer the A/E is responsible for the completion of the project program for approval by VUMC. Program priorities and assumptions are to be reevaluated to determine if spaces and functions can be shared or co-located, with the goal of reducing the scope of the project and increasing space and resource efficiency. The A/E is to verify all existing conditions and to avoid assumptions regarding existing building systems and/or site utilities.

Integrated design exercises are to be conducted, where appropriate, to bring together A/E consultants and key VUMC participants to identify potential conflicts and coordinate design goals. The emphasis of these exercises is to focus on improving overall building or facility performance.

Schematic design documents are to show the architectural and/or engineering concepts, site relationships, landscaping approach, massing, site and/or building circulation patterns, environmental and energy-use strategies, and building systems, as required, to meet the functional economic, environmental, and aesthetic goals of the project. The A/E is to work with the PM and other appropriate people to review utility requirements, building system concepts, campus utility availability, and energy efficient strategies.

The A/E is to review the results of any test borings, site survey, and geotechnical analysis with the PM and other VUMC representatives, as required. The A/E is to provide the scope of work for any Geotech or survey work required.

A/E Deliverables:

- Project program (if not identified in a pre-design phase)
- Overall site or building plan, showing the relationship between existing and renovated space or existing and proposed space
- Documentation of existing utilities, proposed connections, and phasing plans for all utility work. The documents are to include a description of any proposed interruptions of utilities service and/or proposed shutdowns.
- Schematic floor plans, preliminary sections and elevations, and building massing studies where appropriate,
- Preliminary drawings and narratives to indicate various building systems (structural, mechanical, electrical, plumbing, etc.)
- Schematic outline specifications, including initial selection of interior and exterior finishes, fixtures, devices, equipment, and appliances;
- A project schedule that identifies the start and finish dates and durations of each project phase, milestones, and meeting schedules, as approved by the PM.
- Approved and executed floor plan by VUMC parties prior to moving forward to next phase.

Design Development Phase: During design development, the A/E is to develop a level of design necessary to define a clear, coordinated description of all aspects of the project. The A/E expands the level of design integration, design concepts are coordinated among all team members, and cost metrics (capital, operations, life-cycle) are developed and evaluated against performance considerations. The A/E is to review the project schedule to ensure that adequate time is reserved for implementing the decisions and directives of the appropriate people.

A/E Deliverables:

- Updated building program, highlighted changes from the schematic design.
- Site plans, with dimensioned locations of each building element, existing and finished contours, ground floor elevations, location and extent of roads, walks, parking areas, utilizes (existing, new, and relocated), site construction, limits of work, and all the required information for the appropriate location zoning application.
- Site Plans and building plans are to indicate locations of utility connections, new feeds and distribution pathways if required, and all related systems infrastructure.
- Landscape plan, showing the type and location of all landscape elements and all site construction (planting, retaining walls, steps, lighting, walks, roads, and all other details required)
- Floor plans, including updated architectural, equipment, and finish plans
- Reflected ceiling plans, showing materials selected and locations of major ceiling elements. Updated sections and elevations, including detailed wall sections showing construction method and materials. Include foundations, floor and roof heights.
- Additional presentation materials as required to explain the interior and exterior design
- Structural drawings, indicating structural systems and major elements
- Mechanical, electrical, and plumbing drawings, including layouts and distribution diagrams and apparatus and fixture cut sheets. Major equipment is

to be accurately indicated on plans and elevations in terms of location. Coordinate drawing to eliminate conflicts between trades and/or disciplines

- Revised outline specifications, to including materials and color selections
- Updated project schedule, with start and finish dates of each project phase (including construction administration), deadlines, and meeting schedules, as approved by the PM
- Approved and executed floor plan by VUMC parties prior to moving forward to next phase.

Construction Document Phase: The A/E is to complete fully coordinated construction documents, suitable for competitive bidding of the work. Specifications are to be provided in the standard format of the Construction Specifications Institute and are also to include the General and Special Conditions (to be developed in conjunction with the PM). If the construction methodology required multiple dib packages, the A/E is to prepare such documents as required.

As directed by the PM, the A/E is to complete documents for submittal for zoning and permit applications during the Construction Documentation Phase. The approved permit sets are to be kept at and readily available at the project site during construction.

At approximately 75% completion of this phase, the PM will arrange a review meeting with the A/E, to be attended by appropriate team members. The A/E is to incorporate all appropriate comments into the bid documents prior to bidding. Bid documents are to undergo a thorough in-house quality control and coordination review by the A/E prior to bidding

The Construction Documentation Phase is complete at the issuance of all construction drawings and specifications, which include, but are not limited to, construction drawings, specifications, and instructions to bidders.

A/E Deliverables:

- 75% Review Documents;
- Final material samples and finish selections;
- 100% construction documents and specifications for bidding

Construction Administration Phase: During the bid, negotiation, and award process, the A/E is to participate in the pre-bid conference to describe the work, answer any questions regarding the document, review bids for completeness, de-scope the bids, analyze pricing versus estimates, and recommend award. As designated by the PM, the A/E is to provide clarifications or addenda to bidders.

The A/E is to assist VUMC in the administration of the construction contract, providing clarification and interpretation of Contract Documents. The A/E is to make periodic visits to the site to observe the progress and quality of the work and conformance with the contract documents and attend construction progress meetings. The A/E shall exercise due diligence to safeguard VUMC against unsatisfactory workmanship. If, in the opinion of the A/E, the work is not being carried out in a sound, efficient, or skillful manner, the A/E is to notify the PM immediately and is to submit a written assessment of any items that are unsatisfactory.

The A/E is responsible for the preparation of contract bulletins, supplemental instructions (including sketches or document revisions, if necessary), addenda to the project documents, and review and approval of shop drawings, samples, warranties, and guarantees. The A/E is to transmit to the PM one copy of approved shop drawings and submittals immediately following their approval, and assist the PM in negotiation, preparation, approval, proceeding and recording of the cost and scope of change orders.

All significant changes during the construction phase that affect the visual or functional characteristics of the project design are to be brought to the attention of the PM immediately.

A/E Deliverables and Responsibilities:

- If drawings need to be revised, the A/E will provide the PM and the Contractor with a description of the change and bubble/highlight the extent of the change in the documents.
- The A/E is required to respond promptly to all requests for information from the Contractor according to the time frame provided
- Field Observation Reports
- Certificate of Substantial Completion:
- Close Out Documents

Post-Occupancy Studies: At the end of a project, VUMC may elect to commission an A/E team to execute post-occupancy studies or reports. Deliverable, scope, and format of such reports are to be defined by VUMC.

Building Commissioning: Commissioning is the process of ensuring that building systems are designed, installed, functionally tested, and capable of being operated and maintained as designed to meet VUMC's standards. Retro-Commissioning is the process of evaluating and upgrading systems in existing buildings to restore VUMC's standards.

The intent of commissioning is to provide:

- Precise adjustment of HVAC systems and controls
- Verify systems are installed and working correctly and benchmark the correct operation
- Better building documentation
- Ensuring project meets owner requirements
- Prevent or eliminate problems through proactive quality techniques
- Improved training of building operators
- Shortened occupancy transition period
- Lower operation and maintenance cost
- Lower energy usage
- A healthier and more comfortable work environment

Additional Design Issues

Long-Term Planning: The A/E is to keep in mind that decisions regarding design, materials, and methods of construction are to be considered as part of long-term improvements to the campus. Cost effectiveness is to be considered over the life of the project, unless directed otherwise. Site planning by the A/E is to consider existing and proposed facilities, infrastructure, services, natural topography, and potential future development.

Materials and Equipment Selection: Materials specified must be durable and readily available and are chosen with environmental considerations in mind. Materials and systems are to be selected regarding:

- Aesthetics
- Durability
- Safety
- Cost effectiveness
- Maintenance, access, and ease of replacement
- Availability of warranties, service personnel, and manufacturer's support
- Use of standard parts, similar to comparable equipment/materials in use on campus
- Availability of training for VUMC personnel for operation and maintenance
- Low life-cycle costs
- Low use of energy or resources in construction
- Environmentally sustainable disposal method at the end of the anticipated life-cycle
- Local availability