

# FACILITIES PLANNING AND DESIGN UNIT MANUAL

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For any comments, feedback, or query, please contact: [policies@aub.edu.lb](mailto:policies@aub.edu.lb).  
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## **Vision**

FPDU is a professional service provider of choice for faculty, medical center, students and staff of the American University of Beirut with a distinctive environment for academic, research, health care, community interaction and support services while preserving its unique heritage.

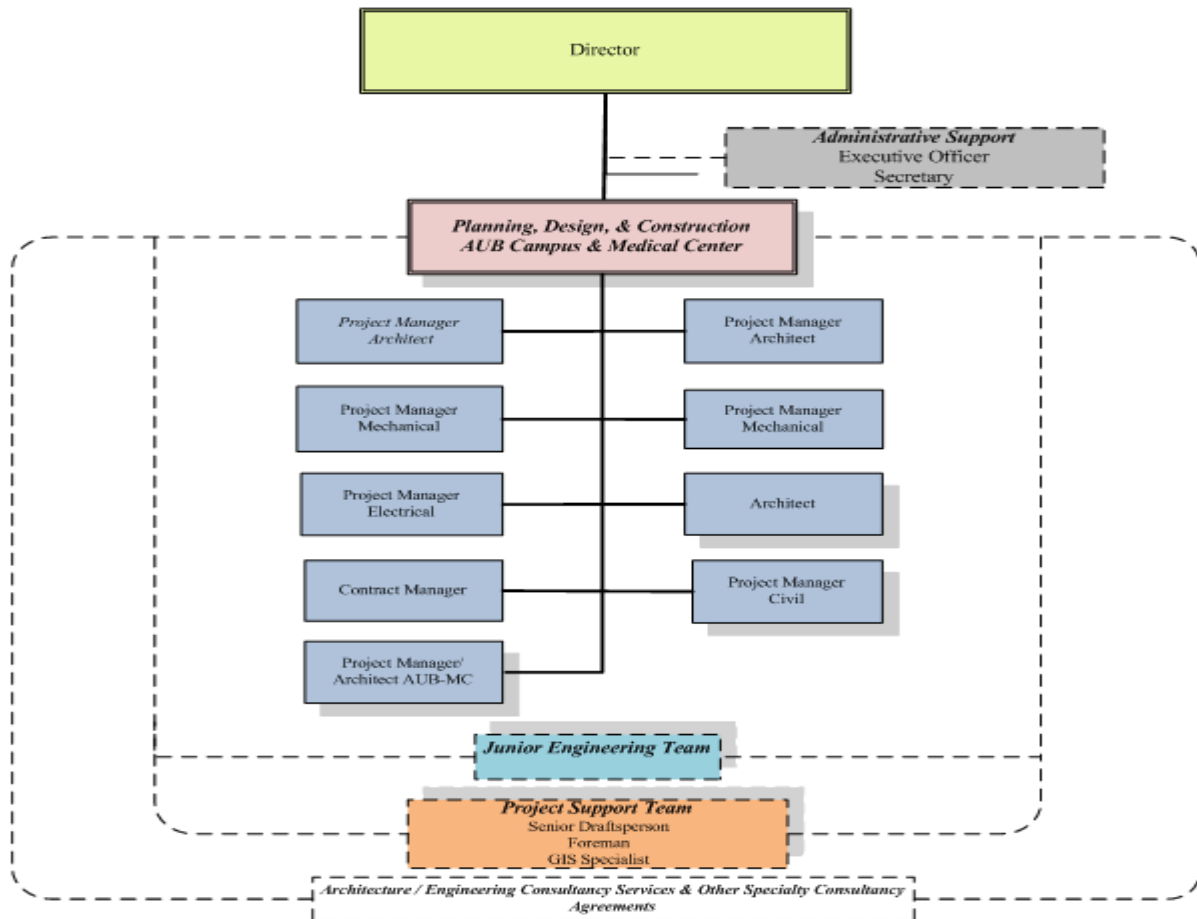
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## **Mission**

FPDU administers the implementation of the AUB Campus Master Plan study of 2002 and its updates to provide upgraded facilities and outdoor spaces to better serve the university's mission for excellence in education and health care.

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# ORGANIZATION CHART



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## **Introduction**

The Facilities Planning and Design Unit has developed this policy and procedure manual to provide a uniform set of standards for the execution of work related to capital construction projects at the American University of Beirut. The policies address issues related to: project delivery, E/user involvement, approvals, and work practices.

The procedures are presented in the approximate order of a standard construction project followed by other policies and procedures that address departmental operating practices.

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## Acronyms

FPDU ACRONYMS	
A/E	Architectural/ Engineering
AREC	Agricultural Research and Education Center
AUB	American University of Beirut
AUBMC	American University of Beirut Medical Centre
BMS	Building Management Systems
BOT	Board of Trustees
CMP	Campus Master Plan
CNS	Computing and Networking Services
E/user	End User
EDIS	Education Impact Statement
EHS&RM	Environmental Health Safety & Risk Management
FAFS	Faculty of Agricultural and Food Sciences
FAS	Faculty of Arts and Sciences
FEA	Faculty of Engineering and Architecture
FF&E	Furniture, Fixtures & Equipment
FHS	Faculty of Health Sciences
FPDU	Facilities Planning and Design Unit
FPE	Fair Price Estimate
GIS	Geographic Information System
IT	Information Technology
MEP	Mechanical/ Electrical/ Plumbing
MP	Master Plan
O&M	Operation & Maintenance
OSB	Olayan School of Business
PEMC	Plant Engineering Medical Center
PPD	Physical Plant Department
RFP	Request for Proposal
RFQ	Request for Qualification
VP	Vice President

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# CHAPTER I - PROJECT DELIVERY PROCESS

## Section 1 - Project Process Description

Capital construction projects, whether for new facilities, whole facility renovations, or renovation of a single room in an occupied facility, are costly and complex. Because of the cost and complexity the university has identified a single department to manage the construction process to ensure that expenditures are minimized and justified and that the process is logical and documented.

Construction / remodeling projects within educational and healthcare facilities are costly because each one of them is unique. No academic facility is identical to another the complexity results from this uniqueness. Universities often perform research that is unique or unusual. In addition, as more people are affected by a project their opinions and reactions increase the complexity. Many people are affected by a small renovation project because it occurs when the rest of the facility is occupied and construction invariably causes noise, smells, dust, dirt, and other interruptions to the normal work day. Mitigation of the disruption is part of the project complexity.

FPDU has developed this document for all AUB personnel involved with a capital construction project to familiarize themselves with the process and to understand how they can contribute. This document describes the steps of the construction process, some of which may be determined by FPDU to be unnecessary and thus skipped. This document also identifies how FPDU interacts with other university administrative departments to document and maximize project value.

### 1. Project Process

All projects follow the steps described below. In some cases, the steps are combined or shortened for reasons of size, expenditure, complexity, or expediency. As a result, the time to complete each step varies.

#### Capital Construction Steps and Approximate Duration

<b>Step</b>	<b>Approximate duration</b>
Programming	1 – 12 months
Architect/Engineer Selection	1 – 3 months
Design and Specification	3 – 12 months
Bidding and Award	2 – 3 months
Construction, Occupancy, Closeout	3 – 48 months

Even the smallest projects require some time to accomplish the necessary tasks so the campus client should expect a minimum time, from notification of the project idea to FPDU until completion, of six months. Some unusually large or complex projects may require more than seven years; the FPDU project manager will provide some initial indication of the project duration.

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## **2. Programming**

This step consists of the written definition and development of the project; the output of this step is a “program statement”. E/users are heavily involved in this stage because they provide much of the detailed information about the size and number of rooms (classrooms, laboratories, offices, etc.) either by identifying the number of faculty, staff, and students who will be served or by using another familiar facility as an example. The FPDU project manager assists in the development of the program statement by including information about the relevant sections of the campus master plan, describing how the campus design and construction standards must be applied and by organizing client needs in a coherent fashion so that the selected designers can maximize their effectiveness and that the longest portions of the project, design and construction, are minimized.

The project manager either assists in the development of the program statement or leads the effort depending on the interest and/or involvement of the clients. The program statement follows a format, provided by FPDU, which is designed to facilitate the design process. Included in the program statement is a description of how the project fits in the university’s campus master plan and strategic plan. Specialized spaces, generally laboratories, are described in detail often with a structured form identifying in tabular fashion the different features required. A detailed listing of all spaces, with approximate sizes and descriptions of how the spaces will be utilized must be included. The E/user must provide a detailed list of all specialized research/technical/medical equipment to be installed in the project. An adjacency matrix should be included to describe how spaces interrelate. The program statement may also include a preliminary project budget and schedule identifying what the costs will be and when the project will be completed for occupancy and use. The program statement can be developed in-house with a specialized architectural programming consultant or with a designer doing the programming before the project design starts. (Great caution should be exercised if the third option is selected because of the tendency to get into a graphic format which can distract the E/users for the focus and elements of the programming phase.) [*Approvals: FPDU, VP Facilities, President, Campus Planning Committee, Budget Control: VP, BOT*].

## **3. Architect/Engineer Selection**

On completion and approval of the program statement, the project manager assists with the selection of the architectural/engineering design team. FPDU initiates the A/E Selection design process with the issuance of a RFP. The RFP contains a brief description of the project, typically an executive summary of the program statement. Additional materials as may be required by the Procurement, Accounting, Legal, and other administrative departments are included to ensure consistency with BOT policies and to enhance clarity of the entire project for the selected design team.

The RFP sub-process provides an opportunity for FPDU and those members of the E/user committee (which may include E/users depending on the type of project) to identify the best design team for the project. While many responses to the RFP will be submitted, and many of these will be fully qualified to design project, typically only one design team demonstrates not only technical competency but also the personal characteristics and interaction relationship with FPDU and the E/user committee to be successful. These characteristics and relationships are determined following an interview of short-listed (top technically qualified submissions) design teams. The interviews are often used to determine if the appropriate “chemistry” exists between the potential designers and the campus representatives. Following the interviews the E/user committee should rank

order the interviewed firms. At this stage, FPDU must enter into negotiations with the top firm with the goal of arriving at a successful conclusion.

Once the selection committee determines its top choice, FPDU, with the assistance of the appropriate financial department, negotiates the fee and other project planning expenditures. Until a successful contract is reached between the University and the design team, other interviewed teams may be considered. Sometimes the fee and expense negotiations take a month or more. Following the conclusion of negotiations, appropriate university approvals, which may include: the Steering Committee, the Campus Planning Committee, Strategic Planning Committee, Vice President, and/or the President, are obtained; these may take several months depending on timing.

#### **4. Design and Specification**

Capital construction projects, because they are unique and must address the unique needs of the campus and E/users, as identified in the program statement, and must fit within the overall aesthetic nature of the campus, require several months to design. During this time the entire design team, consulting architects/engineers, FPDU, and selected client representatives meet and review progress and approve various components or sub-steps. FPDU will assist the campus clients in identifying the different approvals but typically, at a minimum, approvals are required at the completion of schematic design, design development, and contract documents. Each of those major sub-steps is described below. Clear lines of communication with the designer are essential to ensure clarity, limit misunderstandings, to prevent costly errors, and to minimize the design time. Regardless of how trivial this may seem, early, frequent, and clear communication pays for itself many times over during the life of the project.

“Schematic design” is the initial phase in which the overall project design is determined including the arrangement of rooms and the visual appearance of the building. E/users and/or occupants are most heavily involved in the design during this phase. Subtleties about adjacencies, room shapes, building massing, and other design elements are discussed and decided upon. While FPDU may defer many decisions to the E/users during this phase there is considerable direction that must be provided by the project manager representing FPDU, PPD and other administrative departments. Following the schematic design phase the project moves into design development. If appropriate, a sign-off sheet for the E/user representatives may be completed here to verify successful completion of this phase. [*Approvals: EHS&RM, E/users, FPDU, PPD, Budget Control: FPDU*].

The “design development” phase involves detailed investigation of the design and how various building components will be assembled to work together. Decisions will be made about how stairs will be attached to the building structure, how the mechanical components will be arranged and work together to provide comfortable interior temperatures, and how other utilities and services will be distributed throughout the building. This more detailed look at how the building will be assembled requires less E/user/occupant involvement because the decisions that can be observed by the occupants and visitors have been made. If there are questions that require end user input, the FPDU project manager will ensure that there is an opportunity to hear and then respond to the question. If there are complex room/laboratory layout issues it may be appropriate to have a sign-off sheet for the layout; a minimum of three copies for E/user, FPDU, and designer, should be signed.

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Because many decisions about what the building will be made of and how it will work are determined during this phase PPD representatives will become increasingly involved to review and comment on the design. PPD will be expected to maintain the constructed facility, so its input is important at this stage. Following the design development phase the project moves to contract documents. [*Approvals: FPDU, EHS&RM, E/users, Budget Control: FPDU*].

No significant construction project is executed without a set of both graphic and written documents upon which a contract between the university (owner) and a contractor are based. This is accomplished in the “construction documents” phase. During this time there is very little involvement by the university (FPDU, PPD, or the E/users). The bulk of the decisions about the organization of the building were made during schematic design and the bulk of the decisions about the different components and how they will work together were made during design development. This phase provides the architectural/engineering design team time to draw and spell-out exactly what the university has decided about the building and to describe for a contractor how it will all fit together and operate. The architects and engineers create detailed graphic images and specifications (words) describing the items which are not clarified graphically, with general description on work organization and progress, payment modes, and ways for resolving disputes. When the plans/details and specifications are complete the design is complete and the project can be assigned to a contractor. [*Approvals: FPDU, Budget Control: FPDU, VP for Facilities*].

## **5. Bidding and Award**

The University administration may follow one of two paths in this step. If there is confidence that a particular contractor will complete the work for a reasonable price in a reasonable time, the Director of FPDU shall assess the works and recommend to the VP Facilities for securing the necessary approvals, negotiations with a qualified contractor on the cost to do the works. This is not typical because the university is interested in getting assurance that the project costs the least. This assurance can only be achieved by bidding the project through a sealed bid process. The plans and specifications are made available to interested parties and after sufficient time to study the project requirements a price is submitted. If there are concerns that some desired elements of the project might cost more than the budget allows the university may get alternate prices in the bids, details of how this is done is developed during the design step. The University’s rules on how bids are reviewed and selected are -applicable in this case to identify the contractor. Because both the contractor review and university approvals may require significant time and coordination, this step may take several months. [*Approvals: FPDU, Budget Control: VP for Facilities*].

## **6. Construction**

The selected contractor now has plans and specifications which form the building details of the end product; there is an agreement between the university and the contractor, called a contract, which spells out the end product that will be provided and how much the University will pay for the end product. There is little interaction between the university and the contractor other than to make sure that items which will be hidden by floors, walls, and ceilings are installed correctly, i.e., in accordance with the plans and specifications. Depending on the contractual agreement between the designers and the university, these checks may be made by FPDU, the designer or both. Because construction is a dangerous business with partially completed elements that could injure or kill someone, access to the construction site is severely limited. No one, other than

authorized individuals should be within the construction fence. Because it is possible for miscommunication to occur, a single point of communication between the contractor and the university must be the project manager. Communication with the contractor or his employees, regardless of how trivial it may seem, by other university employees, may result in an expensive misunderstanding. During the construction, the contractor is responsible for how the project is constructed (means and methods). FPDU is responsible for completing the project as specified, on-time, and within budget through clear communication channels; it will guard this responsibility zealously and address violation of its responsibility swiftly. Also during this time the project may be inspected by local building authorities for conformance with safe work practices and construction.

As the work progresses, long duration projects will have progress payments to the contractor. To ensure the university has enough money to complete the project in the event the contractor fails to do so, some portion of the payments will be withheld as retain age to protect against default. As the project is completed, the contractor may notify the University that it is ready to hand the project over for occupancy and final payment including reduction of retain age. A punch list is developed and the contractor is notified of the items he must complete prior to final payment. The university may accept the project as “substantially complete” and may then occupy the building. The punch list does relieve the contractor of further responsibilities in the project. In addition, warranties on components and the entire project are held by the contractor until transferred. Typically, the contractor warranties the project to be free of defects for one year. The contractor does not assume responsibility for operating expenses so PPD becomes involved in maintaining the building for the campus and providing supplies and cleaning the building. [*Approvals: FPDU (project manager), Budget Control: FPDU*].

## **7. Occupancy and Closeout**

When determined by the project manager, a project closeout will be initiated. This sub-step gathers up all the costs of the project, building drawings and specifications, changes to both, warranties, and other pertinent project data and transfers it to the appropriate department for archiving. PPD/ PEMC receive a copy of the plans and specifications so it can identify those items that require maintenance. PPD will also enter the building to maintain those items that require daily, weekly, or monthly maintenance because the University is the owner.

FPDU will distribute an E/user approval form which includes the original program statement and any approved modifications to the original signers of the program statement. Each signer should sign the approval form as long as the program statement has been met; additional requirements that were not approved are insufficient reason not to sign. Until all original signers have signed the project approval form the project cannot be closed-out; within the limits of the scope and budget, FPDU will direct additional work to be done in order to get sign-off.

As appropriate, FPDU and the project manager will solicit comments on the overall project process, the design, and other areas to the project team and E/users. These comments will be used to make changes in how future construction projects are delivered. [*Approvals: FPDU, E/user, Budget Control: FPDU, VP for Facilities*].

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## **Section 2 - Standard Project Delivery**

### **1. Purpose**

Describe the standard project delivery process for capital construction projects.

### **2. Responsibility**

The Director of FPDU shall ensure project delivery for standard projects is consistent and thorough.

### **3. Project Delivery Description**

Standard project delivery consists of nine generic steps identified below. While there are variations within each step to correspond to individual project needs or university goals, a policy for each has been developed and must be followed to provide consistency, transparency, and thoroughness.

- a. Detailed programming statement
- b. A/E selection
- c. Schematic design
- d. Design development
- e. Contract documents
- f. Bidding/negotiations
- g. Construction
- h. Reception
- i. Move-in/Fit-out

Project budgets will be based on full costing and include the following cost elements:

- i. Planning and design
- ii. Construction, construction administration, and management
- iii. Specialty consultants
- iv. Special Inspection
- v. Testing
- vi. Furniture, Furnishings, and Equipment
- vii. Technology requirements
- viii. Contingency

All projects shall be contracted in a manner consistent with university policy.

Project documents will be centrally filed.

- FPDU held documents include all contract documents, relevant shop drawings, relevant historic construction communications, summary progress payment documents and detailed payment information for audit purposes subject to time limits, and the building space database.
- As built drawings, specifications, operating manuals, vendor information, keys shall be delivered to PPD /PEMC following-reception of the project.

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## **Section 3 - Capital Project Process**

### **1. References**

- a. A/E Selection
- b. Communication
- c. Design
- d. Final Reception
- e. Furniture
- f. Programming Statement
- g. Project Consultation
- h. Project Process Description
- i. Reception
- j. Reception Committee
- k. Schematic Design

### **2. Purpose**

To provide a clear set of expectations for campus users, FPDU, and others regarding the capital construction process.

### **3. Background**

FPDU has outlined the steps and outcomes of each phase of the planning, design, and construction processes for all campus departments to ensure compliance with all relevant policies and procedures for capital construction, environmental safety, budget, expenditures, and legal concerns.

### **4. Procedure**

- a. Campus users shall contact FPDU in all cases where project costs are estimated to exceed \$100,000 or the area affected exceeds 1,000 m<sup>2</sup>.
- b. A planner shall obtain a brief description of the project and in consultation with the Director of FPDU shall determine if the project meets approved campus planning goals and objectives.
- c. The planner will assist with the scope definition and preliminary cost estimate. The scope definition shall include a project program statement which shall be used to lead the design and construction team.
- d. Projects exceeding \$100,000 require BOT approval prior to initiating the design. The planner shall assist in the development of appropriate documents to obtain campus approvals for funding.
- e. The planner shall assist with the A&E selection. Projects of sufficient size or importance shall include one or more campus user representative(s) on the A&E selection committee.
- f. The selected A&E firm shall design the project consistent with FPDU policies, procedures, design standards, and approved equipment.
- g. A contractor shall be selected through a FPDU-managed process designed to obtain a qualified contractor at a reasonable price.

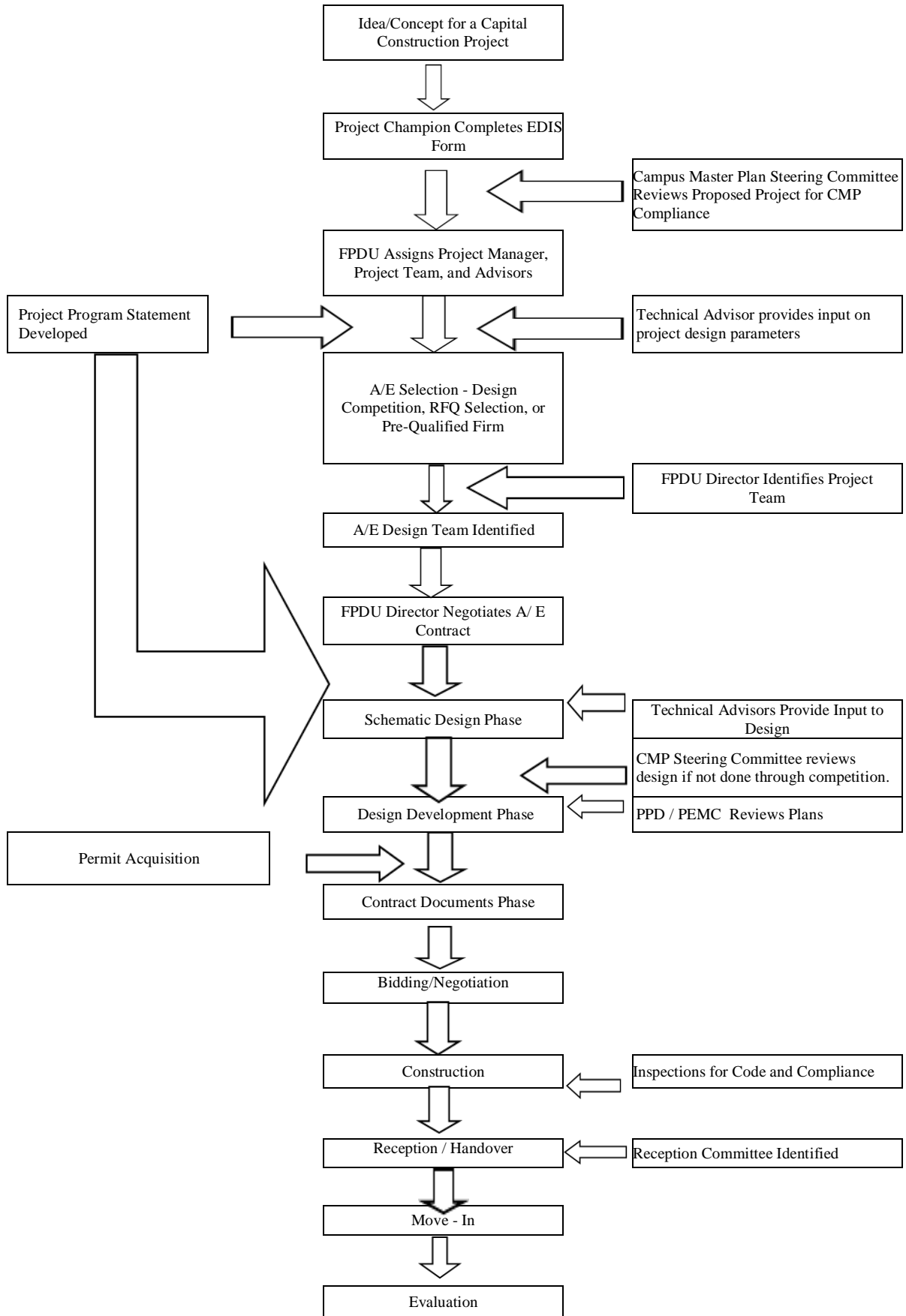
- h. The project manager shall oversee the contractor and the construction process and provide periodic reports to E/users and the university.
- i. The project manager shall assist with campus users with the steps and procedure to occupy or utilize the completed construction project.

## **5. Responsibility**

The Director of FPDU shall review this policy periodically and recommend improvements to the VP for Facilities.

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## Section 4- Project Flow Chart



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**FACILITIES MANAGEMENT DIVISION  
FACILITIES PLANNING GROUP  
EDUCATIONAL IMPACT STATEMENT (EDIS)**

**(Part I – To Be Completed By Requester)**

**Request for:**    **Major Repair**    **Capital Improvements**    **Additional Space**

**Date:**

**Location:**

**Name of Building:**

**Room Number:**

**Scope of Work (Description/Scope of Project):**

**Project Site Availability:**

**Required Project Completion Date:**

**Target Group:**

**Number of Students Impacted:**

**Programs Impacted:**

**IT Requirements:**

**Project's Relationship to the University Strategic Plan:**

**Explanation of How the Project Relates to the University Academic Plan:**

**Explanation of How the Project Relates to the College/School Tactical Academic Plan:**

**Requestor:**

**Contact Person:**

**Department:**

**Department:**

**Phone Number:**

**Phone Number:**

**Fax Number:**

**Fax Number:**

**Email:**

**Email:**

**Approval:**

**Signature:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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**FACILITIES MANAGEMENT DIVISION  
FACILITIES PLANNING GROUP  
EDUCATIONAL IMPACT STATEMENT (EDIS)  
(Part II – To Be Completed By Facilities Planning Group)**

**Type of Project:**

**Campus:**

**Building:**

**Room Number:**

**Purpose of Project:**

**Scope of Project:**

**Impact if Not Approved:**

**Project Period:**

**Project Completion Date:**

**Target Group:**

**Number of Students:**

**IT Requirements:**

**Priority:**

**Category 1:**

**Category 2:**

**Budget Basis**

**Drainage Cost (sq.m.)**

**Drainage \$ (per sq.m.)**

**Concrete Paving Cost (sq. m.)**

**Paving \$ (per sq.m.)**

**AC Paving Cost (sq.m.)**

**AC Paving \$ (per sq.m.)**

**Retaining Wall Cost (sq.m.)**

**Retaining Wall \$ (per sq.m.)**

**Mass Grading Cost (sq.m.)**

**Mass Grading \$ (per sq.m.)**

**Utilities Cost (each)**

**Utilities \$ (each)**

**Landscape Cost (sq.m.)**

**Landscape \$ (per sq.m.)**

**Architectural Cost (sq.m.)**

**Arch \$ (per sq.m.)**

**Mechanical Cost (sq.m.)**

**Mech \$ (per sq.m.)**

**Electrical Cost (sq. m.)**

**Elec \$ (per sq.m.)**

**Facilities Planning Group Recommendation**

**Total Construction Estimate:**

**Design Fee:**

**FFE:**

**Contingency:**

**IT Budget:**

**Estimated Funds Required:**

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**FACILITIES MANAGEMENT DIVISION  
FACILITIES PLANNING GROUP  
EDUCATIONAL IMPACT STATEMENT (EDIS)**

**(Part III – To Be Completed By Facilities Planning Group)**

**Type of Project:**

**Campus:**

**Building:**

**Room Number:**

**Project Validation** This Project has been compared and assessed against the following documents:

- |   |                    |          |
|---|--------------------|----------|
| 1. <input type="checkbox"/> <b>University Strategic Plan</b>        | Reviewer Initials: | Comment: |
| 2. <input type="checkbox"/> <b>University Academic Plan.</b>        | Reviewer Initials: | Comment: |
| 3. <input type="checkbox"/> <b>Campus Master Plan.</b>              | Reviewer Initials: | Comment: |
| 4. <input type="checkbox"/> <b>Space Growth Plan.</b>               | Reviewer Initials: | Comment: |
| 5. <input type="checkbox"/> <b>Minor Plans (ADA, Landscape ...)</b> | Reviewer Initials: | Comment: |
| 6. <input type="checkbox"/> <b>Active Projects Queue.</b>           | Reviewer Initials: | Comment: |
| 7. <input type="checkbox"/> <b>PPD and/or PE MC.</b>                | Reviewer Initials: | Comment: |
| 8. <input type="checkbox"/> <b>Facilities O&amp;M Coordination.</b> | Reviewer Initials: | Comment: |

**Facilities Planning Group Recommendation**

- Disapproved.** EDIS is returned for further justification or reconsideration of requirement.  
Comment:
- Recommend Approval.** EDIS has been reviewed and is considered a valid requirement.  
Comment:

**Project Manager, Facilities Planning and Design Unit**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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## **Section 6 - Project Teams and Advisors: Definitions and Responsibilities**

**1. Subject:** Definition of Capital Project Teams and Advisors.

### **2. References**

- a. Schematic Design Policy.
- b. Design Development Policy.
- c. Contract Documents Policy.

### **3. Purpose**

To identify the different teams, advisors, and committees involved in the capital construction projects.

### **4. Definitions**

#### **a. Campus Master Plan Steering Committee**

A committee chaired by the University President which ensures compliance of all capital construction projects with the campus master plan. Members include:

- President (chair).
- Provost.
- VP for Facilities.
- VP for Finance.
- VP Medical Affairs.
- Dean of OSB.
- Dean of the FEA.
- Dean of the FAS.
- Dean of the FHS.
- Dean of the FAFS.
- Dean of Students Affairs.
- Director of PPD.
- Director of FPDU.
- Director Office of Strategy Management.
- Director of Internal Audit.

#### **b. Campus Planning Committee**

A committee intended to ensure the maintenance and preservation of the campus character and appearance:

- VP for Facilities (chair).
- VP Medical Affairs.
- Dean of Student Affairs.
- Director of the Museum.
- Representatives of Faculties and Departments.
- Director of FPDU.
- Director of PPD.
- Director of EHSRM.
- University Librarian.

### **c. Technical Advisory Committee**

A technical advisory committee, which includes members of AUB faculty or external specialists, shall provide the A/E design team with technical advice on campus design. Members include:

- Landscape Architect.
- Architect and Urban Planner.
- Engineering Management.
- Horticulturist.
- Sustainable Design Specialist.
- Historic Preservationist.

### **d. Project Team**

Each capital construction project shall have a team which provides direct consultation to the consulting A/E design team. Members include:

- Director of FPDU.
- Project Manager.
- Other members of FPDU as appointed by the Director of FPDU.
- Representative(s) of the E/users as appointed by the Dean of the concerned Faculty.

## **4. Procedures**

The teams and advisors shall provide input to the capital construction project as described in each of the design phase policies.

## **5. Responsibility**

The Director of FPDU shall review this policy annually and recommend changes to the VP for Facilities.

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## Section 7 - Programming Statement

1. **Subject:** Development of a detailed programming statement for capital projects.

### 2. References

Programming-Scoping Checklist/Phase Reviews and Approval Form.

### 3. Purpose

To provide a structure by which the campus community will have:

- a. An appropriate voice in the planning of a capital construction project.
- b. A clear set of expectations of the functional, organizational, and operational characteristics of a new and/or rehabilitated capital project.
- c. Will provide the selected design team with a clear statement of needs so that the design and construction process will be simplified and the project duration is as short as possible.

### 4. Procedure

- a. The detailed programming statement begins with an approved project definition. If the project is less than \$1 million value, the programming statement may begin with a detailed letter of request to the Director of FPDU.
- b. The director will form a committee to develop a program statement.
- c. The programming committee will meet as necessary to develop a detailed programming statement consisting of: an approved project definition, estimate of annual operating and maintenance costs, estimate of building area, and detailed data sheets for each unique and significant space.
- d. The detailed programming statement will be signed by all committee members and forwarded to campus executives for approval.

### 5. Definitions

- a. **Statement of Compliance:** a brief description of the project and how it is consistent with the campus master plan and other university strategic plans as appropriate.
- b. **Estimated Building Area:** a calculation based on the preliminary list of building occupants by title/grade and the campus space standards.
- c. **Project Budget:** the cost of construction, fees, testing, inspection, and other activities in support of the project.

### 6. Responsibility

The Director of FPDU shall ensure that all capital projects have an appropriately detailed programming statement following a consistent format and practice of gathering appropriate campus input from administrative, financial, operational, and academic parties.

Each unit contributing to the programming statement has the responsibility of providing sufficiently timely and detailed input to the program statement so that FPDU can quickly and easily incorporate program needs into the detailed programming statement.

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## **Section 8 - A/E Selection**

**1. Subject:** Selection of architects and engineers for capital construction projects following a RFQ.

### **2. References**

[Selecting Professional Services Policy.](#)

### **3. Purpose**

To provide a structure by which architectural and/or engineering designers will be selected based on qualifications and the campus community will have an appropriate voice in the selection of designers for a capital construction project.

### **4. Procedure**

- a. The FPDU director shall create a notice to announce the solicitation of qualifications from designers for the capital project. The solicitation will consist of a brief description of the project and format which interested designers will present their qualifications, it will also include a schedule for: submission of qualifications, preliminary evaluation of submissions, and additional evaluation of short-listed designers (if appropriate).
- b. The director will identify a committee that will participate in the evaluation and selection process.
- c. The committee will evaluate the submitted qualifications following the evaluation format and will identify a short-list of at least three designers that are considered qualified to design and oversee the construction of the project.
- d. Additional evaluation of designers may consist of interviews or a more detailed submission and evaluation format. If interviews are held, members of the project team shall participate in the interview to ensure any “chemistry” issues that can be noted and addressed.
- e. Following any additional evaluation, the committee shall rank order the short-listed designers, most qualified to least qualified.
- f. The director shall enter into fee negotiations with the most qualified designer; the director may be assisted by a subset of the selection committee or a representative of the procurement department. If the parties are unable to reach a successful conclusion to the fee negotiations, then the director shall move to the next most qualified designer.
- g. Upon successful conclusion of fee negotiations with a designer, the director shall complete the contract process following the professional services selection process.

### **5. Responsibility**

The Director of FPDU is responsible for the administration of A/E selection. The director shall ensure that the process provides sufficient documentation to demonstrate that the selection was conducted fairly.



## **Section 9 - Design Competition**

**1. Subject:** Design Competition Process.

### **2. References**

- a. Program Statement.
- b. A/E Selection.

### **3. Purpose**

Provides the selection of an A/E design team through a competitive design process rather than through a RFQ process.

### **4. Procedures**

- a. The Director of FPDU or University President may determine if it is in the best interest of the university to have the designer for a particular capital construction project to be selected through a design competition.
- b. The Director of FPDU shall develop an announcement/invitation for the competition based on the project program statement.
- c. The Director of FPDU shall develop the competition rules, procedures, and determine the amount of honorarium to be awarded to design teams that are not selected at the end of the competition.
- d. The Director of FPDU shall identify the members of the design competition evaluation committee who shall review, evaluate, and recommend a design team as the winner of the competition.
- e. The competition shall be held based on the announced rules.
- f. Following identification of the successful design team, the Director of FPDU shall negotiate a contract for the development of contract documents and construction management services.

### **5. Responsibility**

The Director of FPDU shall review this policy annually and recommend changes to the VP for Facilities.

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## Section 10 – Design

1. **Subject:** Design of Capital Projects.

### 2. References

- a. Phase Review and Approvals.
- b. Schematic Design Policy.
- c. Schematic Design Checklist.
- d. Schematic Design Drawing Checklist.
- e. Design Development Policy.
- f. Design Development Checklist.
- g. Design Development Drawing Checklist.
- h. Construction Documents Policy.
- i. Construction Documents Check-list.
- j. Construction Document Drawing Checklist.

### 3. Purpose

To provide a uniform process to involve campus users in the design of buildings and renovations at the American University of Beirut. All construction projects require design, a multi-step effort that determines what will be constructed.

### 4. Background

Capital projects are complex and follow several steps to arrive at an acceptable design.

### 5. Definitions

- a. **Programming:** The goals and objectives of the project including any detailed or tabular information outlining project specifics.
- b. **Design and Construction Standards:** The requirements of PPD / PEMC and FPDU that facilitate project construction, operation, maintenance, and the efficiency of the building for campus use.
- c. **Schematic Design:** The first phase of design where the E/user has the greatest input and where the general elements of the project are determined.
- d. **Design Development:** The second phase of design where the design and construction standards are incorporated and detailed information about building components are identified.
- e. **Contract Documents:** The final phase of design where the legal documents that form the construction contract are developed. These documents consist of execution drawings, specifications, bills of quantities.

### 6. Procedure

- a. The Director of FPDU shall lead the design effort with the assigned project manager.
- b. The project shall be consistent with the campus master plan and campus design and construction standards.

- c. Campus E/users may be involved during the schematic design phase to assist with overall design configuration and arrangement of spaces.
- d. PPD /PEMC shall be involved during the schematic design and design development phases to ensure compatibility with existing campus systems and operational efficiencies.
- e. FPDU shall lead any presentations about the design and/or project status to AUB/AUBMC E/users or the BOT.

## **7. Responsibility**

The Director of FPDU is responsible for the administration of construction projects and the design prior to construction. The Director shall periodically review these procedures to ensure they maintain the university's best interests.

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## **Section 11 - Schematic Design**

**1. Subject:** Schematic Design of Capital Projects.

### **2. References**

- a. Schematic design checklist.
- b. Schematic design drawing checklist.

### **3. Purpose**

To provide a uniform process to involve campus users in the initial design of buildings and renovations at the American University of Beirut.

### **4. Background**

The design of capital construction projects is an iterative, multi-step process requiring significant E/user input during the schematic design phase.

### **5. Definition**

**Schematic Design:** The first phase of design where the E/user has the greatest input and where the general elements of the project are determined.

### **6. Procedure**

- a. The Director of FPDU shall lead the design effort with the assigned project manager.
- b. The E/users of the capital project may be represented by one or more members of the Project Team. The E/user representative(s) shall be approved by the Director of FPDU.
- c. The Project Team shall provide additional information beyond the Program Statement as necessary to assist the development of the design.
- d. The project shall be designed consistent with the campus master plan and campus design and construction standards. The Campus Master Plan Steering Committee shall verify compliance with the CMP.
- e. E/users may be involved during the schematic design phase to assist with overall design configuration and arrangement of individual spaces. Their input shall be considered but is not an essential requirement of the subsequent design.
- f. PPD / PEMC shall be involved to identify maintenance and operational needs.
- g. The Project Team shall review the completed schematic design for compliance with the Program Statement and may reject the design if a significant portion of the program has been omitted or violated/
- h. FPDU shall lead any presentations about the design and/or project status to campus users or the BOT.
- i. The approved schematic design shall be the basis for the design development phase of the design.

## **7. Responsibility**

FPDU is responsible for the management of construction projects and the design prior to construction.

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## Section 12 - Design Development

1. **Subject:** Design Development of Capital Projects.

### 2. References

- a. Design Development Checklist.
- b. Design Development Drawing Checklist.
- c. Phase Reviews and Approvals.

### 3. Purpose

To provide a uniform process to involve campus users in the development of the design of buildings and renovations at AUB.

### 4. Background

The design of capital construction projects is an iterative, multi-step process requiring FPDU and PPD/PEMC input during the design development phase.

### 5. Definition

**Design Development:** the second phase of design where the design and construction standards are incorporated and detailed information about building components are identified.

### 6. Procedure

- a. The Project Team monitor the design development phase to ensure no significant changes occur which adversely affect the program statement or the approved schematic design.
- b. PPD/PEMC representatives shall provide the designers with information and feedback on campus design and construction standards affecting the design. This may include information about:
  - i. Maintenance of MEP equipment.
  - ii. Operating histories of specific types of MEP equipment.
  - iii. Availability of MEP equipment parts and components.
- c. E/user representatives may be involved during the design development phase to ensure that the E/user's needs identified during the schematic design phase are not adversely affected.
- d. The project team shall review the completed design development documents and may reject the design if a significant portion of the schematic design program has been omitted or violated.
- e. FPDU shall lead any presentations about the design and/or project status to campus users or the BOT.
- f. The approved design development documents shall be the basis for the contract document phase of the design.

## **7. Responsibility**

FPDU is responsible for the management of construction projects and the design prior to construction.

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## Section 13 - Contract Documents

**1. Subject:** Contract Documents Phase of Capital Projects.

### **2. References**

- a. Contract Documents Checklist.
- b. Contract Documents Drawing Checklist.
- c. Phase Reviews and Approvals.

### **3. Purpose**

To provide a uniform process to involve campus users in the creation of contract documents for buildings and renovations at AUB.

### **4. Background**

The design of capital construction projects is an iterative, multi-step process requiring FPDU and PPD/PEMC input during the contract documents phase.

### **5. Definition:**

**Contract Documents:** the final phase of design where the legal documents that form the construction contract are developed. These documents are in both graphic and in written form.

### **6. Procedure**

- a. The project team monitors the contract documents phase to ensure that no significant changes occur which adversely affect the program statement or the approved design development documents.
- b. PPD/PEMC representatives may be called on to provide the designers with additional information on the design and equipment specifications.
- c. E/user representatives are rarely involved during the contract documents phase because design changes are not-typically permitted at this stage.
- d. The project team shall review the completed contract documents and may reject the design if a significant portion of the design has been omitted or violated.
- e. FPDU shall lead any presentations about the design and/or project status to campus users or the BOT.
- f. The approved contract documents shall be used to reach a contract with a contractor for the construction of the project.

### **7. Responsibility**

FPDU is responsible for the management of construction projects and the design prior to construction.

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## **Section 14 – Permits**

**1. Subject:** Permits.

**2. References:** Contract Documents.

**3. Purpose**

To ensure all appropriate permits and approvals are obtained prior to initiating the project construction phase.

**4. Procedure**

- a. At the beginning of the schematic design phase, the project manager shall obtain from the A/E the list of documents required for permit processing.
- b. The project manager shall review the proposed list with the director of FPDU and shall begin seeking permit approvals from appropriate authorities.
- c. Since permit processing is usually time consuming, the project manager shall make sure that all documents are in accordance with relevant building codes.
- d. Prior to completion of the contract documents phase, all necessary permits are to be availed by the project manager.

**5. Responsibility**

The director of FPDU is responsible to ensure that all appropriate approvals have been received prior to the initiation of the bidding/negotiation phase.

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## **Section 15 - Bidding and Negotiations**

**1. Subject:** Bidding and Negotiations.

**2. References:** Contract Documents.

### **3. Purpose**

To ensure that the University gets the optimum combination of price, schedule, and quality from a contractor who will be awarded the construction contract.

### **4. Procedure**

1. No later than the beginning of the contract documents phase, the director of FPDU recommends to the VP Facilities whether the construction delivery method should be a Design-Bid-Build, Design-Build, Construction Manager at Risk, Construction Management Agency, Construction Manager with Guaranteed Maximum Price, or Multi-Prime, etc....
2. In addition to the delivery method, the director of FPDU recommends to the VP facilities whether the construction contract will be bid through a sealed-bid process or whether the contract will be negotiated.
3. The consulting A/E design team shall prepare the contract documents for the selected construction delivery and cost determination methods, in addition to the FPE of the works.
4. A list of qualified contractors for bidding shall be established by the project manager and submitted to the director of FPDU for approval.
5. Contract documents, in the form of a bid package, shall be delivered to the selected contractors, sometimes against a nominal fee, depending on the value of the project.
6. FPDU determines the time frame for the bidding process and sets the amount of tender guarantee, in accordance with the university policies in vigor.
7. During the bidding period, queries from contractors are answered and a pre-bid meeting is usually set for a brief presentation of project particulars. This meeting is followed by a visit to the site premises.
8. At the end of the bidding period, the contractors submit their sealed offers to the AUB Administrator of Bids and Tenders.
9. Bid opening takes place in the presence of the FPDU project manager, FPDU director, AUB administrator of bids and tenders, the E/user and the A/E.
10. The bid committee makes sure that the contractors' offers are in accordance with the contract documents, namely with respect to the submittal of tender guarantees.
11. The project manager, in coordination with the A/E representative, collects the bids for evaluation.
12. The tenders are evaluated by both, FPDU and the A/E, negotiations with the lowest bidders are conducted by FPDU with the aim of clarifying any outstanding issues and determining the best contract price offered.

13. At the end of this process, the project manager submits the recommendation for award.
14. If the project cost is determined by sealed bid, the project manager shall provide an abbreviated description of the project to the Procurement Office who will administer the bidding process.
15. If the project cost is determined through negotiations, the project manager will deliver sufficient copies of the contract documents for the director of FPDU and director of procurement to prepare for negotiations:
  - a. The directors of FPDU and procurement shall identify contractors to negotiate with.
  - b. The contractor names shall be prioritized via a method acceptable to both directors.
  - c. The directors shall provide a sufficient number of contract documents to the first contractor on the prioritized list so he may become familiar with the project.
  - d. The directors shall meet with the contractor to negotiate a price for construction of the project in accordance with the contract documents.
  - e. If the directors are able to reach a satisfactory price with the contractor then the contract documents will be signed in accordance with AUB levels of financial authority.
  - f. If it is not possible to reach a satisfactory price and there are other contractors on the prioritized list, then the next contractor will be provided with contract documents and negotiations will restart. This process will be repeated until a satisfactory price is reached.

## **5. Responsibility**

The director of FPDU is responsible to ensure that all the appropriate approvals have been received prior to the initiation of construction.

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## **Section 16 - Contractor Qualifications**

**1. Subject:** Contractor Qualifications.

### **2. Purpose**

Identify the system by which FPDU will obtain and evaluate contractor qualifications.

### **3. Procedure**

- a. The director of FPDU will identify an internal committee to develop qualification requirements for contractors on a bi-annual basis.
- b. At a minimum, the committee shall require:
  - i. Appropriate construction activity license.
  - ii. Level of insurance capacity.
  - iii. Level of bonding capacity.
  - iv. Financial solvency.
  - v. Experience in projects of similar nature.
  - vi. Reference.
  - vii. Claims record.
- c. The committee shall review the qualifications submitted including checking references, financial capacity, and experience.
- d. The committee shall evaluate the contractors, and if necessary, identify those criteria which shall be used to allow a contractor to be placed on the pre-qualified list.
- e. Contractors on the pre-qualified list shall not be prioritized beyond being approved.
- f. The committee shall present the director with a list of pre-qualified contractors which shall remain valid for a two-year period.
- g. Project managers may utilize contractors on the pre-qualified list consistent with the University's procurement policies.

### **4. Responsibility**

The director of FPDU shall ensure a sufficient number of contractors are on the pre-qualified list for the number of projects anticipated.

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## **Section 17 - Contract Administration**

**1. Subject:** Contract Administration.

**2. References:** Documents.

**3. Purpose**

To define a consistent set of procedures for the administration of construction contracts.

Contract administration is an integral part of FPDU's mission and drives the success of a project through the management of project, financial information, and project risk reporting. Contract provisions safe guard AUB from exposure to non-performance. Other contract safeguards include delivery of scope of work, compliance with AUB policies, qualification of consultants and contractors, payments, and timely processes.

**4. Procedures**

- a. Project manager responsible for maintaining contract documents.
- b. The project manager shall manage the contract:
  - i. Based on bid proposal form.
  - ii. Scope of work based on construction documents and addendums.
- c. Recommend application of liquidated damages after substantial completion date as stated in the contract in case of delays.
- d. Ensure that the insurance requirements aligned with risk management and bonding policies.
- e. Utilize supplemental terms and conditions.
- f. Ensure a certificate of insurance is in compliance with university requirements.
- g. The project manager shall process payment requests after:
  - i. Insuring payment request is in line with contracted total requirements and within overall budget.
  - ii. Verifying that all supporting documents are obtained and agree to payment request.
  - iii. Verifying accuracy of invoice by reviewing current invoice against prior invoices.
  - iv. Verifying legitimacy of reimbursable costs and insuring that they are directly related to the project.
  - v. Preparing a payment approval sheet which provides the approved budget data, contract data, and invoice information.
  - vi. Obtain approvals for payment per the signing authority.

vii. Confirm that all documents – warranties, notice of completion, operating manuals, etc., are received before releasing final payment.

## **5. Responsibility**

The director of FPDU shall review the department's policies periodically and recommend changes to the VP for Facilities.

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## **Section 18 - Coordination with the PPD/PEMC and EHSRM**

**1. Subject:** Coordination with the PPD/PEMC and EHSRM.

### **2. Purpose**

Identify FPDU responsibilities with respect to coordinating capital construction projects with three primary operating units.

### **3. Background**

Capital construction projects create long-lived facilities which will affect the University for decades. The PPD/PEMC together with EHSRM Department have on-going operating issues during planning, construction, and building occupancy that must be considered if the total life-cycle cost to the university is to be minimized.

### **4. Procedure**

- a. When the project programming phase is initiated, FPDU will ensure that PPD/PEMC and EHSRM are informed about the operating, health, safety, and risk management issues in the project program statement.
- b. During the schematic design phase of construction projects, FPDU shall inform PPD/PEMC about the proposed electro-mechanical systems and other general building services, and get their feedback regarding the operation and maintenance issues as per a specified time period.
- c. FPDU shall assess all PPD/PEMC feedback in line with MP guidelines and incorporate the final decisions in the project design while keeping PPD/PEMC informed about these final decisions.
- d. EHSRM shall provide FPDU with leadership on fire egress and all other safety issues for new construction projects and for renovation projects that will remain fully or partially occupied.
- e. EHSRM shall provide FPDU with a list of all regulatory requirements affecting the project. These shall include, but are not limited to:
  - i. Fire safety.
  - ii. Hazardous materials.
  - iii. Egress.
  - iv. Environmental concerns.
  - v. Sanitation.
- f. PPD/PEMC and EHSRM shall coordinate access to the construction site with the project manager to:
  - i. Observe the installation of building systems that will be concealed.
  - ii. Observe the condition of components prior to installation.
  - iii. Observe site safety.
  - iv. Monitor the use of hazardous materials.
  - v. Monitor the disposal of waste materials.
- g. FPDU shall forward agreed upon comments and concerns from PPD/PEMC and EHSRM to the appropriate party during the design and construction phases.

## **5. Responsibility**

The director of FPDU shall ensure coordination with PPD/PEMC and EHSRM in the capital construction process and recommend changes to this policy to improve involvement of PPD/PEMC and EHSRM to the VP for Facilities.

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## **Section 19 – Furniture**

- 1. Subject:** Furniture.
- 2. References:** Furniture Schedule.
- 3. Purpose**

Identify an appropriate complement of furnishings to be provided within a capital project.

- 4. Background**

Consistent furnishing provide for improved capital project coordination and planning.

- 5. Procedure**

There shall be a schedule for furnishing to be provided within new capital construction projects addressing the typical needs of faculty, staff, graduate students, department heads, deans, and other administrators. In addition, the schedule shall identify furnishing for classrooms, lecture halls, conference rooms, open office areas, and general purpose areas within a new capital project.

The capital construction project shall have sufficient funds identified so that the furnishing standards can be met.

FPDU shall provide the bid package for furniture, consisting of specifications, model number, bills of quantities, and all other relevant documentation to enable the E/users to process procurement thereof as per university purchasing procedures.

Deviations from the furnishing standards shall require the written approval of the Director of FPDU.

- 6. Responsibility**

The director of FPDU shall ensure that the furniture standards meet current university needs and the standards are met for all capital projects.

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## **Section 20 - Reception Committee**

**1. Subject:** Identification of Reception Committee Members.

### **2. References**

- a. Reception of Works.
- b. Final Reception of Works

### **3. Purpose**

To provide knowledgeable and diverse membership for a committee to perform the reception of works.

### **4. Procedure**

- a. When a capital project comes to an end, the project manager shall identify and recommend members of the reception committee for the approval of director of FPDU.
- b. Committee membership shall include at a minimum:
  - i. Representative engineer/manager of the PPD/PEMC.
  - ii. Representative engineer/manager of EHSRM.
  - iii. FPDU project manager.
  - iv. FPDU project team members.
  - v. A/E resident engineer (when applicable).
  - vi. Director of FPDU.
  - vii. Representative of the E/user (department/college/school/division).
  - viii. Others (as applicable, CNS, Security...).
- c. For projects with budgets exceeding one million dollars, the director of FPDU shall forward his recommendation to the VP for Facilities for approval at least two weeks prior to the anticipated reception of the capital project.

### **5. Responsibility**

The director of FPDU shall ensure a diverse and knowledgeable committee membership through the maintenance of this policy.

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## **Section 21 - Reception of Works**

**1. Subject:** Reception of Capital Project Works.

**2. References:** Reception Committee.

### **3. Purpose**

To provide a structure and description of the completion steps to uniformly close-out a capital construction project.

### **4. Procedure**

- a. Project reception procedures begin after the project manager and/or A/E issues an invitation to receive works to the director of FPDU.
- b. Invitation of the members of the reception committee shall be issued by the director of FPDU within the contractual time frame.
- c. The project manager shall ensure that a complete and accurate snag/punch list is created.
- d. The reception committee shall inspect the works and pronounce acceptance of substantial completion (i.e., the project could be occupied by the E/user with a snag list to be finalized by the contractor).
- e. The formal comments of a reception committee member shall be within its domain. All snag/punch lists shall be submitted within one week of the "Reception of Works" ceremony.
- f. Evaluation of the project schedule shall be performed and any liquidated damage calculations shall be computed.
- g. PPD/PEMC shall take over the project operation works after formally training their teams and receiving the project keys. PPD/PEMC shall then take over the project warranty and maintenance works upon receiving the warranty and O&M manuals as well as the as-built drawings of the project. PPD/PEMC shall handle all warrantee related issues with the contractor and suppliers.
- h. In case of conflicts between PPD/PEMC and the contractor, FPDU shall be consulted to clarify the related contractual conditions and take the necessary actions.
- i. The contractor shall remain liable for the project O&M works until the formal completion of all training sessions, O&M manuals, and As-Built drawings.

### **5. Responsibility**

The director of FPDU shall ensure a smooth process to determine if capital works should be received.

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## **Section 22 - Final Reception of Works**

**1. Subject:** Final Reception of Capital Project Works.

**2. References:** Reception.

### **3. Purpose**

To provide a structure and description of the completion steps to uniformly complete a capital construction project.

### **4. Background**

The University must receive several details about the capital project in order to maintain and protect its value in the future.

### **5. Procedure**

- a. Final reception procedures begin after the reception committee approves substantial reception of the works.
- b. The project manager shall ensure that the agreed upon committee comments have been addressed and the liquidated damages have been resolved.
- c. Contractor performance evaluation forms shall be created for every contractor and consultant on the project.
- d. Works orientation meetings shall be held for PPD/PEMC personnel, when needed, by the contractor as per the project manager's coordination.
- e. The project manager shall obtain all as-built drawings, operating manuals, and other manufacturer information and transmit to PPD/PEMC.
- f. The project manager shall request a final feedback from PPD/PEMC prior to contract close-out.
- g. When the punch/snag list and all warranty items have been addressed and completed, the project manager shall certify to the director of FPDU that the project is complete and final reception may be completed.
- h. When all of the above steps are satisfactorily accomplished, the final reception of the works may be pronounced and the contract might be closed-out by FPDU director.

### **6. Responsibility**

The director of FPDU shall ensure that the final reception process fulfills the University's needs to protect its long-term interests.

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## **Section 23 - Warranty Transfer to the PPD**

**1. Subject:** Warranty Transfer to the PPD/PEMC.

**2. References:** Reception Committee.

### **3. Purpose**

To provide a structure and description for the transmittal of all warranty information at the conclusion of a capital construction project.

### **4. Procedure**

- a. At the conclusion of the project reception process, the project manager shall collect all project warranties, labor, materials, and ensure they are assembled in a manual.
- b. The warranty manual shall include an index of warranties, a table of contents, and a schedule of all warranted components.
- c. In general, the warranty schedule shall identify for each component:
  - i. Component name.
  - ii. Tag number, if identified in advance, or a space.
  - iii. Manufacturer.
  - iv. Warranty commencement date.
  - v. Warranty duration.
  - vi. Warranty ending date.
  - vii. Contact (name, phone number, address) for warranty issues.
  - viii. Any other essential information specified by PPD/PEMC.
- d. The project manager shall transmit the warranty manual to the PPD/PEMC once completed.

### **5. Responsibility**

The director of FPDU shall ensure a smooth process of warranty transfer and identify improvements to this policy in recommendations to the VP for Facilities.

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## **Section 24 - As-Built and GIS Documents**

**1. Subject:** As-Built and GIS Documents.

**2. References:** Reception Committee.

### **3. Purpose**

To provide a guideline for the creation and assembly of essential record information for every capital construction project.

### **4. Procedure**

- a. At the beginning of the construction process, the project manager shall develop a list of all drawings, specifications, and GIS data that will be required at the reception phase of the project including the party responsible for providing the information.
- b. The project manager shall transmit list of as-built and GIS documents to the A/E and contractor prior to the first progress payment.
- c. At the date of substantial completion, the project manager shall receive the as-built and GIS documents.
- d. The project manager shall review the as-built and GIS documents for completeness.
- e. The project manager shall notify the supplying party of any missing items and notify the director of FPDU of the missing items and recommend withholding payment.
- f. When all as-built and GIS documents are received, the project manager shall notify the director of FPDU and recommend appropriate payment.
- g. The project manager shall transmit the as-built and GIS documents to the FPDU archivist and transmit a copy of the documents to other appropriate departments (PPD, EHSRM, and Security).

### **5. Responsibility**

The director of FPDU shall ensure that all as-built and GIS information is gathered prior to final reception of the project and recommends improvements to this policy to the VP for Facilities.

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## CHAPTER II - SPECIAL CASE PROJECTS

### Section 1 - Utility/Infrastructure Project Delivery

**1. Subject:** Utility/Infrastructure Project Delivery.

#### **2. Purpose**

Describe special project steps for capital construction projects affecting utilities and campus infrastructure.

Utility/Infrastructure projects require sensitivity to the wide ranging effects of utility systems and the essential nature of utilities and infrastructure for the entire campus/medical center. Utility/infrastructure projects have the added challenge of maintaining, to the extent possible, all utility services or minimizing interruptions to utilities.

The University has developed processes to ensure that utility/infrastructure projects are addressed, with particular awareness, to the needs of the campus.

#### **3. Procedures**

- a. The project program statement shall address the utility requirements of the project including number of buildings affected, additional utilities in the area, sensitive facilities in the area, any unusual or special environmental needs, and other elements.
- b. The A/E selection process shall incorporate requirements for utility/infrastructure project experience by all members of the design team.
- c. The technical advisors committee shall include additional members from the EHSRM to review all phases of the design process (schematic design, design development, and contract documents) and shall provide feedback to FPDU.
- d. EHSRM shall be consulted for issues related to life safety and other hazards.
- e. A highly detailed project schedule shall be developed, maintained, and updated at least monthly. The project manager shall carefully coordinate any service interruptions with operating units on campus.

#### **4. Responsibility**

The director of FPDU shall ensure that the project delivery for utility projects is consistent and thorough.

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## **Section 2 - AREC Project Delivery**

**1. Subject:** AREC Project Delivery.

### **2. Purpose**

To describe special project steps for capital construction projects affecting AREC.

AREC projects require sensitivity to the significance of animal and food handling operations of the farm. AREC projects have added the challenge of addressing protection and barriers between the animal portions of the farm and the project area.

The University has developed processes to ensure that AREC projects are addressed with deliberate awareness to the animals and food handling needs of the campus.

### **3. Procedures**

1. The project program statement shall address the animal-related requirements of the project including food handling and processing, animals, animal protection, the types of activities in the area of the project, any unusual or special environmental needs of animals, and other elements.
2. The A/E selection process shall incorporate requirements for animal/farm project experience by all members of the design team.
3. The technical advisors committee shall include additional members, with animal-handling knowledge and experience, to review all phases of the design process (schematic design, design development, and contract documents) and shall provide written approvals for each phase.
4. Execution of AREC projects and management thereof shall be conducted in the same manner as for campus/medical center projects.

### **4. Responsibility**

The director of FPDU shall ensure that the project delivery of AREC projects is consistent and thorough.

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## **Section 3 - Heritage Project Delivery**

**1. Subject:** Heritage Project Delivery.

**2. Purpose:**

To describe special project steps for capital construction projects affecting the heritage portion of the campus.

Heritage projects require sensitivity to the significance and beauty of the historic portion of the campus. Heritage projects have the added challenge of incorporating modern construction methods and expectations with historic materials and construction methods. Modern materials and construction can produce slow and significant damage to historic materials if designers and contractors are not aware of and sensitive to the special needs of historic structures.

In addition to the physical and material needs of historic projects, the visual and aesthetic preservation and protection is necessary. Many institutions of higher education are recognized and remembered by their historic structures. The American University of Beirut is no exception.

The university has developed processes to ensure that heritage projects are addressed with deliberate awareness to the visual, material, physical, and modernization needs of the campus.

**3. Procedures**

- a. The project program statement shall address the heritage features of the project including visual, material, and other elements.
- b. The A/E selection process shall incorporate requirements for campus heritage experience by all members of the design team.
- c. The Campus Master Plan Steering Committee shall be involved in all phases of the design process (schematic design, design development, and contract documents) and shall provide written approvals for each phase.
- d. The reception committee shall include special attention to the heritage elements in the project.

**4. Responsibility**

The director of FPDU shall ensure that the project delivery for heritage projects is consistent and thorough.

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## **Section 4 - Medical Project Delivery**

**1. Subject:** Medical Project Delivery.

**2. References:** Joint Commission.

### **3. Purpose**

To describe the special project steps for capital construction projects affecting the medical center.

### **4. Background**

Medical projects require sensitivity to the significance and complexity of an operating hospital and medical center. Medical projects have the added challenge of including protection and barriers between the function portions of the hospital and the project area.

The University has developed processes to ensure that medical projects are addressed with deliberate awareness to the material, physical, patient, and medical staff needs of the campus.

### **5. Procedures**

- a. The project program statement shall address the hospital operational requirements of the project including medical services, which must be maintained, the average number of people served, the types of activities in the area of the project, any unusual or special environmental limitations of medical equipment, and other elements.
- b. The A/E selection process shall incorporate requirements for medical project experience by all members of the design team.
- c. In addition to PEMC and EHSRM requirements, all projects related to the medical center shall incorporate the requirements of the Infection Control Committee.
- d. The technical advisors committee shall include additional members with medical building knowledge and experience to review all phases of the design process (schematic design, design development, and contract documents) and shall provide written approvals for each phase.
- e. For renovation projects, the reception committee shall be involved throughout the life of the project to review phased interruptions and openings of the project.

### **6. Responsibility**

The director of FPDU shall ensure that the project delivery of the medical projects is consistent and thorough.

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## CHAPTER III - OTHER DOCUMENTS

### Section 1 - Project Definition Consultation

**1. Subject:** Project Definition and Consultation for Capital Projects.

**2. Purpose**

To provide a uniform structure to plan, program, and design a capital project.

**3. Background**

Capital construction projects are costly and long-lived; therefore, careful and deliberate plans must be developed prior to undertaking a capital project.

**4. Policy**

Each capital project shall have an EDIS, which outlines how the project is consistent with the capital master plan, the district plan, any building assessments, academic priorities, and FPDU design and construction guidelines.

**5. Responsibility**

The director of FPDU is responsible to ensure the adherence of this policy.

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## **Section 2- User Involvement in Capital Projects**

**1. Subject:** User Involvement In Capital Construction Projects.

### **2. Purpose**

To provide a clear set of expectations for campus users, FPDU, and others regarding involvement of non-professionals in the capital construction process. The capital construction process is complex involving a large number of participants and decisions makers. At the same time, there is a clear structure to the process that provides for a reasonable involvement and input from campus users to ensure that their objectives are met.

### **3. Procedure**

- a. Campus, medical center, and AREC users shall contact their head of department, dean, or chairperson who will contact FPDU to initiate a capital construction project.
- b. The director of FPDU will identify the number of campus/departmental users who represent their group in the project through committee representation.
- c. FPDU planner or project manager shall be identified to work in the campus/departmental user representative(s) in the planning, design, construction, and reception phases.
- d. An orientation meeting shall be held to acquaint the campus/departmental representative(s) with the overall capital construction process and any project-specific procedures to be used.
- e. Departmental representative(s) shall represent their department or constituency in FPDU-led meetings and shall provide responses and decisions for the project.
- f. E/user responses and decisions shall be provided in a timely manner to ensure that no interruption to the project process is made.
- g. Representatives shall be provided with access to all project documentation, some of which may be confidential in nature. They are expected to maintain appropriate confidentiality and the integrity of the project process.
- h. Representatives shall openly share departmental and constituent information and concerns with FPDU.
- i. Representatives may participate in reviews of the works during the construction phase, but shall not enter the works without the FPDU project manager.
- j. Representatives may participate in the reception of works phase if selected by the dean/chairperson; otherwise, they must convey their comments through the project manager prior to the reception phase.

### **4. Responsibility**

The director of FPDU shall periodically review the procedures followed in different capital construction projects and review E/user comments about the process and recommend changes to the process to the VP for Facilities.

### **Section 3 - FPDU Responsibilities**

**1. Subject:** Responsibilities of FPDU.

**2. Purpose**

To identify FPDU responsibilities with respect to campus, medical center, and AREC, planning, capital development, design, construction, and affiliated administrative activities.

**3. Background**

The BOT of AUB are entrusted the management of the University and are responsible to ensure that all capital construction projects are executed to the highest level of quality, are economically constructed, and meet the needs of the campus community. The BOT has delegated this operational management of its responsibility to FPDU. FPDU is continually challenged to provide high level performance and quality service to the organization as it is entrusted the implementation of the Master Plan, campus planning, capital projects and construction. In order to discharge its responsibilities and duties in sustaining its mission, managing inherent risk in planning and budgeting, contract administration and project management, and creating a work place environment to foster communication and continuous improvement, FPDU has developed a system of policies and procedures. These policies and procedures provide for community involvement, at appropriate stages, in the capital construction process and assign clear duties to FPDU and non-FPDU employees involved in capital projects. The overall intent of these policies and procedures is to ensure that the Trustees' capital construction objectives for the university are met.

**4. Responsibility**

The director of FPDU shall review this policy and other capital project policies annually and recommend changes to the VP for Facilities.

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## **Section 4 - Financial Accounting**

**1. Subject:** Financial Accounting.

### **2. Purpose**

To identify FPDU responsibilities with respect to financial accounting for campus, medical center, and AREC planning, capital development, design, construction, and affiliated administrative activities.

### **3. Background**

FPDU will maintain current financial information of projects based on generally acceptable accounting practices and provide meaningful and timely financial information for informed decision making. Technology will be utilized to enhance sharing of information and retrieving information for reporting on a timely basis.

### **4. Procedures**

- a. FPDU will, through the Budget Office, open a cost center account for each approved capital project utilizing the accounting system:
  - i. The cost center will account for the budget and expenditures relating to a project's planning, design, and construction.
  - ii. Data entry will reflect approved expenditures in accordance with the delegation of authority per procurement and construction policies.
  - iii. Monthly journal entries will be submitted to accrue project cost.
  - iv. Estimates of depreciation will be entered as journal entries.
- b. Internal controls for payment requests:
  - i. All payment requests will originate with the consultant/contractor through a generally accepted invoice format indicating at minimum, period of services, contract reference, scope of work, percentage of completion, and amount of payment request.
  - ii. Reimbursable expenses will be supported by copy of receipts and must be directly related to the project.
  - iii. Payment request (invoice) will be reviewed and approved by the project manager, principal design firm (if A/E firm are part of the construction phase), and appropriate FPDU staff as delegated by the signing authority.
  - iv. FPDU contract administrator is responsible to ensure that the payment request is in accordance with the approved contract obligations and conditions and acceptable performance of services.
- c. Cash flow projections:
  - i. Preliminary cash flow is prepared by the project manager and director at the time the EDIS form is completed.

- ii. FPDU will determine, based on past experience and an acceptable industry project payment benchmark, a cash flow spending curve.
- iii. After the budget is approved, cash flow will be reined and entered into the accounting system for project guidance and monitoring.
- iv. The project manager and contract administrator perform monthly analysis to compare projected against actual expenditures.
- v. Any variance meeting specific thresholds established by the Budget Office will require an explanation by the project manager.
- vi. Accounting of project expenditures by contract administrator:
  - This function includes maintaining data in the accounting system in a reliable, accurate and complete manner.
  - Data maintenance includes project identification, project name, budget, budget revisions, commitments, and payments.
  - Monthly journal entries are made to accrue project costs based either on unpaid invoices or an estimated cost for work to be completed through a specific time period.
  - Annual journal entries are executed to close out project costs to fixed assets.
  - Journal entries are initiated to estimate depreciation.
  - Journal entries are reviewed to insure that the costs are properly coded to the correct general ledger accounts.

## **5. Responsibility**

The director of FPDU has been charged with the management of campus, medical center, and AREC development issues and creation of appropriate policies and procedures.

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## **Section 5 - Division Policies and Procedures**

### **1. Subject:** FPDU Policies and Procedures.

### **2. Purpose**

To identify FPDU responsibilities with respect to campus planning, capital development, design, construction, and associated administrative activities.

### **3. Background**

While FPDU is guided by AUB policies and procedures, internal organization processes are important to maximize efficiency within best practice guidelines, internal controls, and acceptable benchmarks.

- a. FPDU utilizes “best practice” processes and guidelines by establishing acceptable, relevant, and appropriate benchmarks to manage operational and performance risk.
- b. FPDU will utilize an inclusive and advisory decision-making process to effectively communicate issues and ensure that multiple viewpoints are incorporated into the best option.
- c. FPDU will comply with all aspects of the procurement policy:
  - i. All purchase of goods and services will be initiated through university procurement standards.
  - ii. Purchase of goods and services will be subject to availability of funds.
  - iii. All purchases shall be approved consistent with university procurement standards.
  - iv. Appropriate documentation showing receipt of goods or services shall be provided prior to payment of invoices.
  - v. Approval of payments is subject to delegation of authority as per the procurement policy.

In addition to the construction policy, FPDU will be guided by the following:

- d. Perform appropriate due diligence to required entitlements, site conditions, barriers, variances, codes, and other access requirements.
- e. Exercise due care, responsible operational and project management and construction follow up decisions, project reporting, and awarding contracts to consultants and contractors.
- f. Construction documents will be complete and approved by the project manager prior to bidding stage.
- g. Notice to proceed will be given after a signed contract or approval is obtained.
- h. Project costing will be in alignment with industry benchmarks and previous projects' benchmarks obtained through competitive bidding.



- i. Evaluating the performance of consultants and contractors prior to final payments and utilizing such evaluation in considering future engagements.
- j. Contracts will include provision of 10 percent retention of progress payments.
- k. Large contracts may include a provision for the early release of retention amounts based on acceptable completion of the work phase.
- l. Contracts may include provisions for partial releases of liens as a prerequisite to progress payments.
- m. Progress payments should be verified against percentage of project completion.
- n. For contracts that do not require legal review, FPDU will perform the following due diligence and checklist:
  - Risk management insurance and bonding requirements.
  - Completion date is specified with appropriate liquidated damages.
  - Scope of services.
  - Appropriate licensing.
  - Special conditions.
  - Contract documents are used.
- o. Project budget will be based on full costing and include the following cost elements:
  - Planning and design.
  - Construction, construction administration, and management.
  - Specialty consultants.
  - Special Inspection.
  - Testing.
  - Furniture, furnishings, and equipment.
  - Technology requirements.
  - Contingency.
- p. Significant or complex consultant services shall be obtained through:
  - A request for proposal.
  - Committee evaluation of proposals.
  - Appropriate licensing, experience, personnel, schedule, and cost structure.
- q. All projects shall be contracted through means consistent with university policy.
- r. Receipt of bids will be through the Internal Audit Office.
- s. Project documents will be centrally filed.
- t. Payment for construction related services:
  - Construction related services will be acquired through a contract per construction policy.
  - Payments on contracts will be subject to verification by the project manager.
  - Payments will be processed using appropriate forms.
  - Changes to contracts will be initiated via a Field Proposal Request.

- u. Changes to contracts should normally be limited to unforeseen circumstances.
- v. Code requirements, scope changes, or contractor/designer oversight must be fully justified based on impact to project or program, and benefit to the university.

#### **4. Responsibility**

The director of FPDU has been charged with the management of campus, medical center, and AREC development issues and creation of appropriate policies and procedures.

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## **Section 6 – Communication**

### **1. Subject:** Communication.

### **2. Purpose**

To identify FPDU responsibilities with respect to communication for capital development, design, construction, and affiliated activities.

### **3. Background**

Clear communication systems are essential for the successful management and completion of a complex capital project.

### **4. Procedure**

It is FPDU's goal to continually improve on its ability to effectively communicate at all levels within and external to the organization.

- a. FPDU will incorporate inclusive advisory decision making into its processes in addressing issues.
- b. Project communication within FPDU:
  - Meeting minutes are maintained.
  - Project managers submit daily reports.
  - Project managers submit weekly report.
- c. Project communication between FPDU and the contractor:
  - Transmittals to contractors shall be made.
  - Submittals for material approval are submitted to FPDU.
- d. Notices during the project:
  - Request for inspection shall be made.
  - Request for testing shall be made.
- e. FPDU shall produce an annual report on capital works to the vice president for facilities at the end of the fiscal year.

### **5. Responsibility**

The director of FPDU shall administer appropriate forms, methods, and procedures for communication between parties during the design and construction process.

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## Section 7 - Campus Master Plan and Standards Review Schedule

**1. Subject:** Campus Master Plan and Standards Review Schedule.

### 2. Purpose

To provide a clear schedule for the review of the Campus Master Plan, design standards, and other campus-wide plans affecting physical development and FPDU.

### 3. Background

Plans and standards are only as good as the organization's ability to keep them current and consistent with best practices.

### 4. Policy

FPDU shall ensure that the campus master plan, design standards, physical strategic plans, and other plans affecting campus facilities are reviewed regularly following a schedule and shall facilitate appropriate updates to support campus development.

### 5. Procedures

The director or designee shall review the status of the campus master plan against the University's strategic plan and recommend review or update to the plan if significant differences exist between the plans.

Other plans or standards shall be reviewed periodically.

A report of the reviews shall be made to the vice president for facilities in the annual departmental report.

### 6. Responsibilities

<b>Plan/Standard</b>	<b>Review Cycle</b>	<b>Review Month</b>	<b>Reviewer/Responsible</b>
Campus Master Plan	5 years		FPDU Director
Design & Construction Standards	2 years		FPDU Director
University Strategic Plan	5 years		University Administration

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# APPENDIX I PROGRAMMING CHECKLIST

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #:</b> FPDU -
<b>Project Manager:</b>	<b>Date:</b>

## Task List

### 1. Kick-off Meeting

	Task	Remarks
<input type="checkbox"/>	Identify client organization, E/user groups, participants	
<input type="checkbox"/>	Outline process and assign responsibilities	
<input type="checkbox"/>	Develop a schedule with milestones for programming	
<input type="checkbox"/>	Identify site/location/parking/etc., with FPDU	
<input type="checkbox"/>	Outline E/user group vision, goals, and priorities	
<input type="checkbox"/>	Staffing plan	

### 2. Confirm planning, Architectural, and Landscape Goals

	Task	Remarks
<input type="checkbox"/>	Reference Campus Master Plan	
<input type="checkbox"/>	Signed EDIS	
<input type="checkbox"/>	Environmental impact assessment	

### 3. Conduct User Interviews

	Task	Remarks
<input type="checkbox"/>	Determine architectural goals from master plan standards	
<input type="checkbox"/>	Identify facility goals	
<input type="checkbox"/>	Identify academic/ medical goals	
<input type="checkbox"/>	Develop schedule, budget, and funding goals	
<input type="checkbox"/>	Determine space needs	
<input type="checkbox"/>	Identify equipment requirements	
<input type="checkbox"/>	Establish program concepts and flow diagrams	
<input type="checkbox"/>	Determine environmental and sustainability considerations	
<input type="checkbox"/>	Determine engineering criteria	

### 4. Establish and Evaluate Space Data

	Task	Remarks
<input type="checkbox"/>	Determine occupancy and construction type	
<input type="checkbox"/>	Identify square meter requirements	
<input type="checkbox"/>	Determine current headcount	
<input type="checkbox"/>	Determine future headcount	
<input type="checkbox"/>	Determine height limits and number of allowable stories (massing)	
<input type="checkbox"/>	Establish noise and vibration criteria	

<input type="checkbox"/>	Review code and technical criteria for:	
	○ Site Utilities	
	○ Civil	
	○ Structural type and loading	
	○ Exterior cladding systems	
	○ Architectural	
	○ Parking and landscape	
	○ Mechanical and plumbing	
	○ Electrical	
	○ Process piping	
	○ Telecommunications/fiber optic requirements	
	○ Security systems	
	○ Accessibility requirements	

#### 5. Develop Project Schedule and Cost Model

Task		Remarks
<input type="checkbox"/>	Project Gant chart schedule with major milestones	
<input type="checkbox"/>	Cost/sm targets and estimates in benchmark format	
<input type="checkbox"/>	Check AUB cost items and include as required	

#### 6. Complete Programming Report

Task		Remarks
<input type="checkbox"/>	Draft Program Report - distribute for comment	
<input type="checkbox"/>	Collect and include comments for Final Draft	
<input type="checkbox"/>	Signed EDIS	

#### Deliverables

##### 1. Programming Report that Includes at Least:

Task		Remarks
<input type="checkbox"/>	<b>Introduction and Project Analysis</b>	
	○ Scope	
	○ Process	
	○ Background	
	○ Organizational diagrams	
	○ Participants/credits	
<input type="checkbox"/>	<b>Goals and Objectives</b>	
	○ Definition of objectives	
	○ Goal statement	
<input type="checkbox"/>	<b>User Space and Functional Requirements</b>	
	○ Definition/space normative	
	○ Space needs summary	
	○ Detailed space program and adjacencies	
	○ Design concepts, functional relationships, and traffic/flow diagrams	
<input type="checkbox"/>	<b>Design Criteria</b>	
	○ Landscaping requirements	
	○ Connective elements	
	○ Building materials	
	○ Exterior walls and cladding	
	○ Fenestration (walls and doors)	

	○ Roof	
	○ Gutters and downspouts	
	○ Exhaust stack heights	
	○ Penthouse requirements	
	○ Fencing and screening	
<input type="checkbox"/>	<b>Technical Criteria</b>	
	○ Site and design guidelines	
	○ Site utilities	
	○ Civil engineering and site survey	
	○ Structural engineering	
	○ Mechanical engineering and controls with benchmarks	
	○ Electrical engineering	
	○ Soils	
	○ Chemical Inventory and description	
	○ Code analysis	
<input type="checkbox"/>	<b>Systems Design Criteria</b>	
	○ Identify fire code requirements for automatic sprinklers and fire rated walls, floors, and ceilings	
	○ Define type of research to be performed to determine system loads	
	○ Establish noise and vibration criteria	

**2. Board of Trustees Report that Includes:**

Task		Remarks
<input type="checkbox"/>	<b>Updated Benchmark Budget</b>	
	○ Design costs	
	○ AUB costs	
	○ Construction	
	○ Other construction	
	○ Entitlements and agencies	
	○ Furniture, fixtures, and equipment	
	○ Contingency and allowances	
<input type="checkbox"/>	<b>Schedule</b>	
	○ Project schedule with design and construction durations	
	○ Define activation period	
	○ Define surge and relocation requirements	
<input type="checkbox"/>	<b>Funding Plan</b>	
	<b>For New Construction or Site Remodels:</b>	
	○ Site plan	
	○ Site guidelines	

**Approvals**

Person		Remarks
<input type="checkbox"/>	Facility coordinator	
<input type="checkbox"/>	Dean/department head	
<input type="checkbox"/>	Director, FPDU	
<input type="checkbox"/>	VP for facilities	

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## APPENDIX II A/E RFP RESPONSE EVALUATION FORM

(To download this appendix in Word format, click [here](#))

<b>Project:</b>				
<b>Design Team:</b>				
<b>Response is Complete (Y/N):</b>				
			<b>Comments</b>	<b>Score</b>
<b>Staff Numbers</b>	<b>Licensed/ Professional</b>			
	<b>Staff - Total</b>	<b>Other (list)</b>		
		<b>Architect</b>		
		<b>Interior Designer</b>		
		<b>Landscape Architect</b>		
		<b>Structural Engineer</b>		
		<b>Electrical Engineer</b>		
		<b>Mechanical Engineer</b>		
		<b>Civil Engineer</b>		
		<b>Surveyor</b>		
		<b>Other (list)</b>		
		<b>Other (list)</b>		
		<b>Other (list)</b>		
		<b>Other (list)</b>		
	<b>Other (list)</b>			
<b>Distance from AUB</b>	km			
<b>Previous Experience, # of Projects</b>				
<b>References</b>	<b>Campus</b>	<b>Name (Contact)</b>	<b>Phone/e-mail</b>	<b>Comments</b>

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## APPENDIX III SCHEMATIC DESIGN CHECKLIST

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #:</b> FPDU -
<b>Project Manager:</b>	<b>Date:</b>

### Task List

#### 1. Identify and Confirm the Project Team

Task	Firm or Lead Person	Remarks
<input type="checkbox"/> Architect of record		
<input type="checkbox"/> Design architect		
<input type="checkbox"/> Structural engineer		
<input type="checkbox"/> Structural peer #1		
<input type="checkbox"/> Geotechnical soils		
<input type="checkbox"/> Environmental soils		
<input type="checkbox"/> Materials testing		
<input type="checkbox"/> Special inspections		
<input type="checkbox"/> Mechanical		
<input type="checkbox"/> Electrical		
<input type="checkbox"/> Plumbing		
<input type="checkbox"/> Process piping		
<input type="checkbox"/> Fire protection		
<input type="checkbox"/> Civil and surveying		
<input type="checkbox"/> Cost estimating		
<input type="checkbox"/> Contractor/CM		
<input type="checkbox"/> Interiors		
<input type="checkbox"/> Landscaping		
<input type="checkbox"/> Move management		
<input type="checkbox"/> Acoustical		
<input type="checkbox"/> Audio visual		
<input type="checkbox"/> Vibration analysis		
<input type="checkbox"/> Traffic analysis		
<input type="checkbox"/> Laboratory design		
<input type="checkbox"/> AUB PPD		
<input type="checkbox"/> AUB parking and transportation		
<input type="checkbox"/> AUB utilities		
<input type="checkbox"/> AUB EHSRM		
<input type="checkbox"/> AUB Medical School		
<input type="checkbox"/> AUB Registrar		
<input type="checkbox"/> AUB Safety and Security		
<input type="checkbox"/> AUB facility coordinator		

#### 2. Hold Structural Peer Review Meeting

Task	Remarks
<input type="checkbox"/> Determine peer report content and format	
<input type="checkbox"/> Identify peer group leader	
<input type="checkbox"/> Determine peer report schedule	

### 3. Determine the Project Schedule

Task		Remarks
<input type="checkbox"/>	Confirm design durations	
<input type="checkbox"/>	Confirm construction durations with contractor (if known)	
<input type="checkbox"/>	Identify permits needed	
<input type="checkbox"/>	Confirm project phasing requirements	
<input type="checkbox"/>	Identify utilities and PPD review periods	
<input type="checkbox"/>	Identify user group review periods	
<input type="checkbox"/>	Allow contingency time (1-4 months) to re-design to align the budget and scope if needed	

### 4. Determine the Site Design

Task		Remarks
<input type="checkbox"/>	Vehicular access	
<input type="checkbox"/>	Bicycle and pedestrian circulation	
<input type="checkbox"/>	Connective elements	
<input type="checkbox"/>	Fire apparatus access	
<input type="checkbox"/>	Landscape plan	
<input type="checkbox"/>	Hard cape plan	
<input type="checkbox"/>	Grading plan	
<input type="checkbox"/>	Utility loads	
<input type="checkbox"/>	Utility connection points and invert elevations	
<input type="checkbox"/>	Project boundaries	
<input type="checkbox"/>	Loading dock location and access	
<input type="checkbox"/>	Refuse collection	

### 5. Determine the Building Design

Task		Remarks
<input type="checkbox"/>	<b>Determine Construction Systems</b>	
	○ Exterior skin materials and colors	
	○ Cladding	
	○ Roof shape and materials	
	○ Fenestration	
	○ Gutters and downspouts	
	○ Mechanical penthouse	
<input type="checkbox"/>	<b>Develop Life Safety Plans</b>	
	○ Fire apparatus access	
	○ Egress and exiting	
	○ Fire alarm panel location	
	○ Accessibility paths and areas of refuge	
	○ Fire rated walls	
	○ Hazardous chemical control zones	
<input type="checkbox"/>	Confirm hazardous materials inventory	
<input type="checkbox"/>	<b>Develop Floor Plans</b>	
	○ Wall ratings and types	
	○ Confirm areas	
	○ Hazardous chemical zones	
	○ Room names and numbers	
	○ Doors and windows	
	○ Overall dimensions	

<input type="checkbox"/>	Locate and size mechanical and electrical rooms	
<input type="checkbox"/>	Coordinate structural system with floor plans	
<input type="checkbox"/>	<b>Develop Roof Plan</b>	
	○ Locate mechanical equipment	
	○ Determine equipment size and weight	
	○ Confirm screening and sightlines	
	○ Locate exhaust stacks	
<input type="checkbox"/>	Develop landscape plans	
<input type="checkbox"/>	Color renderings for design approval	

#### 6. Determine the MEP/FP Systems Design

Task		Remarks
<input type="checkbox"/>	Provide calculated loads for MEP/FP	
<input type="checkbox"/>	Confirm code requirements for sprinklers	
<input type="checkbox"/>	Coordinate MEP/FP systems with wall ratings	
<input type="checkbox"/>	Develop single line drawings for security, telecommunications/data, and audio visual	
<input type="checkbox"/>	Confirm vibration/acoustic criteria	
<input type="checkbox"/>	Determine cable tray location	
<input type="checkbox"/>	Develop/refine equipment and room data sheets	

#### 7. Establish and Evaluate Space Data

Task		Remarks
<input type="checkbox"/>	Develop a budget based on 100% SD drawings	
<input type="checkbox"/>	Check budget against approved budget	
<input type="checkbox"/>	List exclusions	
<input type="checkbox"/>	Identify exposures	
<input type="checkbox"/>	<b>AUB Costs</b>	
	○ AUB infrastructure	
	○ Internal AUB charges	
	○ Temporary utilities	
	○ Design competition	
	○ Historic Renovation	
	○ Central plant specifications	
	○ Disruption minimization	
	○ Campus model	
	○ Construction financing	
	○ Large scale mock-ups	
	○ Advanced documents	
	○ Reimbursable	
	○ Decommissioning of vacated spaces	
<input type="checkbox"/>	<b>AUB Performed Work</b>	
	○ PPD	
	○ Utilities	
	○ EHSRM	
	○ Communications	
<input type="checkbox"/>	Escalation	
<input type="checkbox"/>	Acceleration	
<input type="checkbox"/>	Furniture, fixtures, and Equipment (FFE)	
<input type="checkbox"/>	Agency fees	
<input type="checkbox"/>	<b>Contingencies</b>	

<input type="checkbox"/>	Design	
<input type="checkbox"/>	Construction	
<input type="checkbox"/>	Project	
<input type="checkbox"/>	Program	
<input type="checkbox"/>	Haz Mat Abatement	
<input type="checkbox"/>	Lab fit-up	
<input type="checkbox"/>	Move management	
<input type="checkbox"/>	Movers	
<input type="checkbox"/>	<b>Insurance</b>	
<input type="checkbox"/>	Builder's risk	
<input type="checkbox"/>	Contractor liability	
<input type="checkbox"/>	E&O for design/build projects	
<input type="checkbox"/>	Performance/payment bonds	
<input type="checkbox"/>	Closeout cost	
<input type="checkbox"/>	Environmental clean-up	
<input type="checkbox"/>	Temporary services	
<input type="checkbox"/>	Signage and way-finding criteria	

**8. Reconcile Budget with Scope/Program**

Task		Remarks
<input type="checkbox"/>	Confirm scope and budget from programming-scoping phase	
<input type="checkbox"/>	Identify out of scope and proposed Value Engineering (VE) items	
<input type="checkbox"/>	Conform funding for added scope (if any)	
<input type="checkbox"/>	Complete value-engineering	

**9. Hold a Schematic Design presentation to the E/user and Technical Groups**

Task		Remarks
<input type="checkbox"/>	Complete design group presentation to E/user and technical group	
<input type="checkbox"/>	Receive E/user group sign-off on program and project design	

**10. Draft Site Logistics Plan**

Task		Remarks
<input type="checkbox"/>	Site access and materials delivery	
<input type="checkbox"/>	Lay down Area	
<input type="checkbox"/>	Crane location(s)	
<input type="checkbox"/>	Security/safety requirements	
<input type="checkbox"/>	Site preservation	
<input type="checkbox"/>	Traffic re-routing (vehicular and pedestrian)	
<input type="checkbox"/>	Temporary services	
<input type="checkbox"/>	Site boundaries	
<input type="checkbox"/>	Delivery access	
<input type="checkbox"/>	Emergency vehicle access	
<input type="checkbox"/>	Pedestrian access and flow	
<input type="checkbox"/>	Campus parking	
<input type="checkbox"/>	Construction parking	
<input type="checkbox"/>	Fencing location	
<input type="checkbox"/>	Trailer location(s)	

## Deliverables

### 1. 100% Schematic Design drawings

Task		Remarks
<input type="checkbox"/>	Confirm drawing and rendering requirements	
<input type="checkbox"/>	Confirm review duration schedule	
<input type="checkbox"/>	Confirm required fees	

### 2. Approvals

Person		Remarks
<input type="checkbox"/>	Facility coordinator	
<input type="checkbox"/>	Dean/department head	
<input type="checkbox"/>	Director, FPDU	
<input type="checkbox"/>	VP for facilities	

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**APPENDIX IV**  
**SCHEMATIC DESIGN DRAWING CHECKLIST**  
 (To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #: FPDU -</b>
<b>Project Manager:</b>	<b>Date:</b>

**General Information**

- Life safety plan with egress routes and accessibility
- Occupant loads
- Fire apparatus access

**Site**

- Site plan
- Parking stall types and locations
- Landscaping
- Grading permit plans

**Plans**

- 1:100 Floor plans with overall dimensions
- 1:100 Roof plan
- Existing utilities survey
- Utility main locations
- Utility entrance locations
- Mechanical single line distribution plan
- Mechanical, electrical, and telecommunications room layouts
- Structural plan with column spacing and shear wall locations
- Preliminary furniture plan
- Preliminary lab equipment plan
- Preliminary kitchen and specialty equipment plan
- Reflected ceiling plan of major spaces
- Casework location
- Occupancy separations and rated wall locations
- Door locations
- Vertical circulation locations and sizes

**Sections**

- Building sections showing floor-to-floor heights, space relationships, and mechanical plenums
- Preliminary exterior wall systems

**Details**

- Preliminary significant exterior wall details
- Significant structural details
- Preliminary mechanical equipment schedules
- Specialty walls (blast walls, dust barriers, visual barriers, etc.)

**Project Manual**

- Outline specifications MEP's basis of design
- Narratives with load requirements and distribution plan (including controls)
- Cable tray requirements
- Interior finish narrative
- Fume hood and lab equipment inventory
- Signage/way finding narrative
- Soils report
- Acoustical requirements
- Lighting level requirements
- Traffic study
- Narrative for specialty items, AV, card readers, CCTV, and security

**Elevations**

- Exterior elevators indicating location of fixed and operable windows, doors, overall dimensions and floor-to-floor heights
- Exterior finish materials
- Exterior cladding systems
- Exterior lighting locations
- Roof profile and finish material
- Interior elevations of major/complicated spaces

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## APPENDIX V DESIGN DEVELOPMENT CHECKLIST

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #:</b> FPDU -
<b>Project Manager:</b>	<b>Date:</b>

### Task List

#### 1. Confirm Life Safety Requirements

Task		Remarks
<input type="checkbox"/>	Meet with EHSRM and other authorities to review egress, occupancy, and accessibility assumptions	
<input type="checkbox"/>	Obtain ICP requirements	( For AUBMC projects )

#### 2. Refine Site Design

Task		Remarks
<input type="checkbox"/>	Landscape plan with new and existing plants	
<input type="checkbox"/>	Include soil and geotechnical information on drawings as required	
<input type="checkbox"/>	Confirm site slopes and drains	
<input type="checkbox"/>	Confirm pavement dimensions	
<input type="checkbox"/>	Confirm utility locations and invert elevations	
<input type="checkbox"/>	Confirm site lighting and fixtures	

#### 3. Refine Building Design

Task		Remarks
<input type="checkbox"/>	Floor plans with room dimensions and identifications	
<input type="checkbox"/>	Enlarged vertical circulation plans	
<input type="checkbox"/>	Walls and partition types with material indications	
<input type="checkbox"/>	Roof plan with overhangs, pads, slopes, crickets, maintenance access, and coil pulls	
<input type="checkbox"/>	Confirm utility room layouts and mechanical space requirements	
<input type="checkbox"/>	Fire extinguisher and pull station locations	
<input type="checkbox"/>	Door and window types with heights and rough opening dimensions	
<input type="checkbox"/>	Finish schedule with color samples	
<input type="checkbox"/>	Exterior wall sections	
<input type="checkbox"/>	Details of major architectural or system features	
<input type="checkbox"/>	Design and construct mock-ups as required	

#### 4. Refine System Design

Task		Remarks
<input type="checkbox"/>	Confirm building program (functional, occupancy, and spatial requirements)	
<input type="checkbox"/>	Confirm building equipment (equipment matrix)	
<input type="checkbox"/>	Confirm building fixtures (mechanical, plumbing, electrical, and lighting)	
<input type="checkbox"/>	Hold coordination meetings with consultants	
<input type="checkbox"/>	Perform life cycle cost analyses	

**5. 100 Percent Design Development E/user and Technical Group Review**

Task		Remarks
<input type="checkbox"/>	E/user Group/facility coordinator	
<input type="checkbox"/>	PPD/PEMC shops	
<input type="checkbox"/>	Utilities	
<input type="checkbox"/>	CNS	
<input type="checkbox"/>	FPDU	
<input type="checkbox"/>	EHSRM	

**6. Refine Schedule**

Task		Remarks
<input type="checkbox"/>	Determine construction phasing with contractor	
<input type="checkbox"/>	Determine long lead items	
<input type="checkbox"/>	Determine procurement strategy with procurement for long lead items	

**7. Outline Permitting Strategy**

Task		Remarks
<input type="checkbox"/>	Meet with permitting authorities to confirm submittal requirements	
<input type="checkbox"/>	Coordinate submittal with other AUB submittals	
<input type="checkbox"/>	Confirm the number of permit packages	

**8. Develop DD Estimate to Include the Following**

Task		Remarks
<input type="checkbox"/>	Basic construction costs (including acceleration premiums, builders risk, contractor bond, etc.)	
	<ul style="list-style-type: none"> <li>• Building</li> <li>• Equipment in contract</li> <li>• Site work</li> <li>• Construction escalation</li> </ul>	
<input type="checkbox"/>	Other construction costs	
<input type="checkbox"/>	Fixtures, furniture, and equipment (NIC)	
<input type="checkbox"/>	Professional fees and services	
<input type="checkbox"/>	AUB costs	
<input type="checkbox"/>	Activation costs	
<input type="checkbox"/>	Contingencies (in addition to construction contingencies)	
<input type="checkbox"/>	<b>Other Project Costs Such As:</b>	
	<ul style="list-style-type: none"> <li>• Construction financing</li> <li>• Potential mitigation costs</li> </ul>	

**9. Complete Internal Reviews**

Task		Remarks
<input type="checkbox"/>	Director FPDU	
<input type="checkbox"/>	Confirm funding assumptions with director	
<input type="checkbox"/>	Dean	
<input type="checkbox"/>	VP for facilities	



## Deliverables

### 100 Percent Design Development Drawings with Project Manual (Specs)

Task		Remarks
<input type="checkbox"/>	Reference DD drawing checklist for required drawings an project manual content	
<input type="checkbox"/>	Submit deliverables to FPDU for internal reviews	Review time frame to be defined and adhered to.

## Approvals

Person		Remarks
<input type="checkbox"/>	E/user group sign-off	
<input type="checkbox"/>	PPD/FPDU sign-off	
<input type="checkbox"/>	Facility coordinator	
<input type="checkbox"/>	Dean/department head	
<input type="checkbox"/>	Director, FPDU	
<input type="checkbox"/>	VP for facilities	

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**APPENDIX VI**  
**DESIGN DEVELOPMENT DRAWING CHECKLIST**  
(To download this appendix in Word format, Click [here](#))

<b>Project:</b>	<b>Project #: FPDU</b>
<b>Project Manager:</b>	<b>Date:</b>

**General Information**

- Life safety plan with egress routes and accessibility
- Occupant loads
- Fire apparatus access

**Site**

- Site plan
- Parking stall types and locations
- Landscaping
- Site furnishings
- Irrigation plan
- Exterior equipment/storage such as trash enclosures, tanks, etc.

**Plans**

- 1:100 Floor plans with dimensions
- Occupancy separations and fire rated walls
- 1:50 Enlarged plans
- 1:50 Enlarged stair and elevator plans
- 1:100 Roof plan with roof pads, drains, equipment screens, and fall protection
- Utility main locations
- Utility entrance locations
- Cable tray/J-hook locations
- Mechanical single line distribution plan
- Mechanical, electrical, and telecom room layouts
- Electrical power plans
- Electrical lighting plans
- Structural plan with column spacing and shear wall locations
- Furniture plans
- Interior finish plans
  
- Lab equipment plan
- Kitchen and specialty equipment plan
- Reflected ceiling plan
  
- Casework location
- Way finding
  
- Artwork/lighting program
- Door locations and handing
- Vertical circulation locations and sizes
- Specialty locations (whiteboards, screens)
- Audio visual equipment locations
- Security/CCTV locations
- Card reader locations
- Fire alarm
- Fire fighting
- BMS Building Management Systems

**Elevations**

- Exterior elevations indicating location of fixed and operable windows, doors, overall dimensions and floor-to-floor heights
- Casework elevations
- Exterior finish material
- Exterior cladding systems
- Exterior lighting locations
- Roof profile and finish material
- Interior elevations of major/complicated spaces

**Sections**

- Exterior wall sections
- Building sections showing floor-to-floor heights, space relationships, and mechanical plenums
- Stair, elevator, and shaft sections

**Details**

- Exterior wall details
- Wall types
- Interior details
  
- Significant structural details
- Window types
- Door and door frame types
- Door and window schedule
- Mechanical equipment schedules
- Electric panel schedules
- Specialty walls (blast walls, dust barriers)

**Project Manual**

- Preliminary construction specifications
- Basis of design narratives with load requirements and distribution plan
- Cable tray/J-hook requirements
- Fume hood and lab equipment inventory
- Vibration analysis
- Signage narrative
- Soils report
- Lighting level requirements
- Acoustical requirements
- Elevators

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# APPENDIX VII CONSTRUCTION DOCUMENT CHECKLIST

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #: FPDU -</b>
<b>Project Manager:</b>	<b>Date:</b>

## Task List

### 1. Finalize Coordination of Systems Design

	Task	Remarks
<input type="checkbox"/>	<b>Site Utilities</b>	
	• Steam	
	• Sanitary sewer	
	• Storm sewer	
	• Site electrical	
	• Medium voltage	
	• Domestic water	
	• Irrigation/brackish water	
<input type="checkbox"/>	HVAC systems	
<input type="checkbox"/>	Plumbing systems	
<input type="checkbox"/>	Site lighting	
<input type="checkbox"/>	Electrical power	
<input type="checkbox"/>	Electrical lighting	
<input type="checkbox"/>	Fire sprinklers	
<input type="checkbox"/>	Fire alarm	
<input type="checkbox"/>	Telecommunications (voice/data/network/ audio visual)	
<input type="checkbox"/>	Mechanical systems (softener/booster pump/BMS, etc... )	

### 2. Finalize Coordination of Drawings

	Task	Remarks
<input type="checkbox"/>	Architectural with all systems	
<input type="checkbox"/>	<b>Architectural with Site Utilities:</b>	
	• Steam	
	• Sanitary sewer	
	• Storm sewer	
	• Site electrical	
	• Medium voltage	
	• Domestic water	
	• Fire water	
	• Irrigation/brackish water	
<input type="checkbox"/>	Architectural with civil, landscaping, and site utilities	
<input type="checkbox"/>	Architectural with interior finishes	
<input type="checkbox"/>	Architectural with furniture plans	

### 3. Finalize Selections of Finishes and Materials

	Task	Remarks
<input type="checkbox"/>	Select exterior palettes with university architect:	
	• Walls	
	• Bases	
	• Window and door frames	

	• Doors	
	• Curtain wall	
	• Glazing	
	• Eaves	
	• Gutters	
	• Roofing	
	• Walks	
	• Lighting	
	• Signage and way-finding	
	• Other exterior connection elements	
<input type="checkbox"/>	Confirm interior palettes with FPDU for major public spaces	
<input type="checkbox"/>	If housing project, the finishes are selected by Housing Department	
<input type="checkbox"/>	Select materials with recycled content	
<input type="checkbox"/>	Hardware schedule	

**4. Finalize Construction Details**

Task		Remarks
<input type="checkbox"/>	Site utilities	
<input type="checkbox"/>	Medium voltage	
<input type="checkbox"/>	Civil	
<input type="checkbox"/>	Landscape	
<input type="checkbox"/>	Architectural	
<input type="checkbox"/>	Interiors	
<input type="checkbox"/>	Mechanical	
<input type="checkbox"/>	Plumbing	
<input type="checkbox"/>	Electrical power	
<input type="checkbox"/>	Electrical lighting	
<input type="checkbox"/>	Telecommunications	
<input type="checkbox"/>	Fire sprinklers	
<input type="checkbox"/>	Fire alarm	
<input type="checkbox"/>	Elevators	

**5. Finalize Site Logistics Plan (Same as Construction Coordination Plan)**

Task		Remarks
<input type="checkbox"/>	Site access and materials delivery	
<input type="checkbox"/>	Lay down area	
<input type="checkbox"/>	Crane location(s)	
<input type="checkbox"/>	Security/safety requirements	
<input type="checkbox"/>	Site preservation	
<input type="checkbox"/>	Traffic re-routing (vehicular and pedestrian)	
<input type="checkbox"/>	Temporary services	
<input type="checkbox"/>	Mitigations of environmental pollution, dust, noise, etc.	
<input type="checkbox"/>	Site boundaries	
<input type="checkbox"/>	Delivery access	
<input type="checkbox"/>	Emergency vehicle access	
<input type="checkbox"/>	Pedestrian access and flow	
<input type="checkbox"/>	Campus parking	
<input type="checkbox"/>	Construction parking	
<input type="checkbox"/>	Fencing location	
<input type="checkbox"/>	Trailer location(s)	

**6. Complete 50% Technical Group Constructability Review**

Task		Remarks
<input type="checkbox"/>	<b>PPD/PEMC Review with Maintenance Shop</b>	
	• HVAC shop	
	• Plumbing shop	
	• Electrical shop	
	• Lock shop	
	• Grounds	
<input type="checkbox"/>	<b>Site Utilities</b>	
	• Medium voltage	
	• Water	
	• Chilled water	
	• Steam	
	• Storm water	
<input type="checkbox"/>	<b>Environmental Health and Safety</b>	
	• Exiting and occupant loads	
	• Fire sprinklers	
	• Fire alarm	
<input type="checkbox"/>	<b>Communications Services</b>	
	• Telephone	
	• Data	
	• Networking	
	• Audio visual	
<input type="checkbox"/>	<b>Security</b>	
	• Card readers	
	• CCTV	
	• Site lighting	
<input type="checkbox"/>	Parking and transportation	
<input type="checkbox"/>	Public safety/security	
<input type="checkbox"/>	Accessibility	
<input type="checkbox"/>	FPDU director	
<input type="checkbox"/>	EHSRM director	
<input type="checkbox"/>	Review coordination of sustainability components to ensure the design intent is satisfied	

**7. Complete 95 Percent Technical Group Review**

Task		Remarks
<input type="checkbox"/>	<b>PPD/PEMC Review with Maintenance Shop</b>	
	• HVAC shop	
	• Plumbing shop	
	• Electrical shop	
	• Lock shop	
	• Grounds	
	• Site utilities	
	• Medium voltage	
	• Water	
	• Chilled water	
	• Steam	
	• Storm water	
<input type="checkbox"/>	<b>Environmental Health and Safety</b>	

	• Exiting and occupant loads	
	• Fire sprinklers	
	• Fire alarm	
<input type="checkbox"/>	<b>Communications Services</b>	
	• Telephone	
	• Data	
	• Networking	
	• Audio visual	
	• Elevators	
<input type="checkbox"/>	<b>Security</b>	
	• Card readers	
	• CCTV	
	• Site lighting	
<input type="checkbox"/>	Parking and transportation	
<input type="checkbox"/>	Public safety/security	
<input type="checkbox"/>	Accessibility	
<input type="checkbox"/>	FPDU director	
<input type="checkbox"/>	EHSRM director	
<input type="checkbox"/>	Review coordination of sustainability components to ensure the design intent is satisfied	

### 8. Detail Sustainability Components

	Task	Remarks
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		

### 9. Finalize Specifications

	Task	Remarks
<input type="checkbox"/>	CSI Format Sections 1 - 50 (new format)	
<input type="checkbox"/>	Commissioning plan	
<input type="checkbox"/>	Instructions to bidders	
<input type="checkbox"/>	Soils report	
<input type="checkbox"/>	Vibration/acoustic analysis	
<input type="checkbox"/>	Audio visual/web casting	
<input type="checkbox"/>	Site logistics plan	

### 10. Finalize Commissioning Plan (If Required)

	Task	Remarks
<input type="checkbox"/>	<b>Identify Systems to be Commissioned</b>	
	• Mechanical	
	• Electrical	
	• Plumbing	
	• Controls	
	• Fire protection/life safety	
	• Sprinklers	
	• Audio/visual equipment	
	• Telecommunications	
<input type="checkbox"/>	Determine lines of communications between each group	
<input type="checkbox"/>	Evaluate the operating condition of the system at the completion of functional testing	
<input type="checkbox"/>	Identify uncorrected deficiencies that are accepted by the University	
<input type="checkbox"/>	Report on field activities and testing procedures	

**11. Finalize Budget for GC Contract (DBB, CM, CM/GMP, etc.)**

Task		Remarks
<input type="checkbox"/>	Finalize contractors	
<input type="checkbox"/>	Hard costs	
<input type="checkbox"/>	Allowances	
<input type="checkbox"/>	Construction contingency	
<input type="checkbox"/>	Bond cost	
<input type="checkbox"/>	Insurance cost	
<input type="checkbox"/>	Contractor fee	
<input type="checkbox"/>	Itemized general conditions	
<input type="checkbox"/>	Review controls section of CMP	
<input type="checkbox"/>	Confirm financing costs with Budget Office/Comptroller	

**12. Submit to Authorities for Plan Check**

Task		Remarks
<input type="checkbox"/>	Determine fees from rate schedule	
<input type="checkbox"/>	Complete application	
<input type="checkbox"/>	Determine required number of sets of CDs	

**13. Revise Project Schedule**

Task		Remarks
<input type="checkbox"/>	Confirm status of long-lead items	
<input type="checkbox"/>	Include detailed contractor schedule in master project schedule	

**14. Sign-Off on Mock-Ups (If Any)**

Task		Remarks
<input type="checkbox"/>	Exterior wall construction	
<input type="checkbox"/>	Roofing details	
<input type="checkbox"/>	Hard cape	

**Deliverables**

**1. Complete Set of Construction Documents and Project Manual (specs)**

Task		Remarks
<input type="checkbox"/>	Coordinated drawings	
<input type="checkbox"/>	Project manual	
<input type="checkbox"/>	Specifications for all trades	
<input type="checkbox"/>	Bills of quantities	

**2. Budget and Schedule**

Task		Remarks
<input type="checkbox"/>	General contractor's construction schedule with detailed tasks and milestones	

**3. Construction Management Plan**

Task		Remarks
<input type="checkbox"/>	Use CMP template. Revise for project specific information as necessary	
<input type="checkbox"/>	Submit draft CMP	
<input type="checkbox"/>	Submit final CMP at end of CDs	

## Approvals

Person		Remarks
<input type="checkbox"/>	PPD/FPDU sign-off	
<input type="checkbox"/>	Facility coordinator	
<input type="checkbox"/>	Dean/department head	
<input type="checkbox"/>	Director, FPDU	
<input type="checkbox"/>	VP for facilities	

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**APPENDIX VIII**  
**CONSTRUCTION DOCUMENTS DRAWING CHECKLIST**  
(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #: FPDU -</b>
<b>Project Manager:</b>	<b>Date:</b>

**General Information**

- Life safety plan with egress routes and accessibility
- Occupant loads
- Fire apparatus access

**Site**

- Site plan
- Parking stall types and locations
- Landscaping
- Bicycle rack locations
- Site furnishings
- Irrigation plan and details

**Plans**

- 1:100 Floor plans with dimensions
- 1:50 Enlarged plans
- 1:50 Enlarged stair and elevator plans
- 1:100 Roof plan with roof pads, drains, equipment screens, and fall protection
- Utility main locations
- Utility entrance locations
- Mechanical single line distribution plan
- Mechanical, electrical, and telecom room layouts
- Electrical power plans
- Electrical lighting plans
- Structural plan with column spacing and shear wall locations
- Furniture plans
- Interior finish plans
- Lab equipment plan
- Kitchen and specialty equipment plan
- Reflected ceiling plan with dimensions and heights above finished floor
- Casework location
- Rated wall locations
- Door locations and handing
- Vertical circulation locations and sizes
- Specialty locations (whiteboards, screens)
- Audio visual equipment locations
- Security/CCTV locations
- Card reader locations
- Fire alarm and sprinkler shop drawings
- Elevators

**Elevations**

- Exterior elevations indicating location of fixed and operable windows, doors, overall dimensions and floor-to-floor heights
- Casework elevations
- Exterior finish materials
- Exterior lighting locations
- Roof profile and finish material
- Interior elevations of major/complicated spaces

**Sections**

- Exterior wall sections
- Building sections showing floor-to-floor heights, space relationships, and mechanical plenums
- Stair, elevator, and shaft sections

**Details**

- Exterior wall details
- Roof details
- Floor details
- Wall types
- Casework details
- Ceiling details
- Interior details
- Significant structural details
- Window types
- Door and door frame types
- Door and window schedule
- Hardware schedule
- Mechanical equipment schedule
- Mechanical details
- Electric panel schedules
- Electrical details
- Plumbing riser diagrams
- Plumbing details
- Accessibility details
- Specialty walls (blast walls, dust barriers, etc.)

**Project Manual**

- Construction specifications
- Cable tray/J-hook requirements
- Basis of design narratives with load requirements and distribution plan
- Fume hood and lab equipment inventory
- Signage narrative
- Soils report
- Acoustical requirements
- Lighting level requirements
- Hardware schedule with types
- General requirements with bidding instructions
- Bills of Quantities

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# APPENDIX IX CONSTRUCTION CHECKLIST

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #: FPDU -</b>
<b>Project Manager:</b>	<b>Date:</b>

## Task List

### 1. Verify General Contractor's Contract and Insurance; Verify Bond

Task	Remarks
<input type="checkbox"/> Verify executed contract with the GC	
<input type="checkbox"/> Verify the contractor has the correct type of insurance	
<input type="checkbox"/> Verify bonding is in place	

### 2. Contractor Pre-Construction Meeting with the Design and Technical Group

Task	Remarks
<input type="checkbox"/> Review project schedule	
<input type="checkbox"/> Outline submittal review process	
<input type="checkbox"/> Outline field Information Request	
<input type="checkbox"/> Outline field work order	
<input type="checkbox"/> Outline request for Inspection	
<input type="checkbox"/> Review the shut down/shut off procedures	
<input type="checkbox"/> Review the site logistics plan and fencing requirements	
<input type="checkbox"/> Review field observation requirements	
<input type="checkbox"/> Confirm contractor parking locations and shuttle procedure (as required)	
<input type="checkbox"/> Confirm tree monitoring and preservation process	
<input type="checkbox"/> Confirm meeting times, attendees, and agenda	

### 3. Obtain and Review Contractor's Safety Program

Task	Remarks
<input type="checkbox"/> Contractor's training and lost time protocols	
<input type="checkbox"/> Sign locations and text	
<input type="checkbox"/> Hazardous materials protocols	
<input type="checkbox"/> Material safety data sheet locations	
<input type="checkbox"/> Fencing location	
<input type="checkbox"/> Crane requirements	
<input type="checkbox"/> Hardhat locations	
<input type="checkbox"/> Hot work and open flame protocols	
<input type="checkbox"/> Tie-off procedure	
<input type="checkbox"/> Emergency assembly point	
<input type="checkbox"/> Reporting procedures and requirements	
<input type="checkbox"/> Safety coordinator	
<input type="checkbox"/> Emergency shutdowns and contact List	
<input type="checkbox"/> Limits to site and delivery path	
<input type="checkbox"/> Site firefighting equipment	

**4. Outline Site Notification Procedure with Contractor and Neighbors**

Task		Remarks
<input type="checkbox"/>	Identify contacts	
<input type="checkbox"/>	Determine procedure for emergency notification to and from neighbors	
<input type="checkbox"/>	Determine procedure and frequency for regular notifications.	
<input type="checkbox"/>	Outline procedure for impact mitigation	

**5. Conduct Periodic Owner, Architect, and Contractor (OAC) Meetings**

Task		Remarks
<input type="checkbox"/>	Identify regular time and location for this contractor run meeting	
<input type="checkbox"/>	Review construction progress, schedule, and safety	
<input type="checkbox"/>	Review payment applications	
<input type="checkbox"/>	Review field work order log	
<input type="checkbox"/>	Review issues (new and outstanding) and determine responsible party and course of action.	

**6. Schedule Coordination Meetings and Site Walks with Technical and E/user Groups**

Task		Remarks
<input type="checkbox"/>	Civil and landscaping	
<input type="checkbox"/>	Architectural	
<input type="checkbox"/>	Mechanical	
<input type="checkbox"/>	Electrical	
<input type="checkbox"/>	Plumbing and process piping	
<input type="checkbox"/>	Structural	
<input type="checkbox"/>	Outline procedure for impact mitigation	
<input type="checkbox"/>	E/users with FPDU and PPD	
	• Telecommunications and furniture	
	• Any not-in-contract (NIC) equipment	
	• Locks and keys	
	• Safety	
	• Security	
	• Transportation	

**7. Review Mock-Ups, Submittals, and Change Request Logs**

Task		Remarks
<input type="checkbox"/>	Identify appropriate review personnel for mock-up sign-off	
<input type="checkbox"/>	Update log status	
<input type="checkbox"/>	Update action List	

**8. Conduct Inspections**

Task		Remarks
<input type="checkbox"/>	AUB internal technical group	
	• EHSRM	
	• PPD/PEMC	
	• FPDU	
<input type="checkbox"/>	Regulatory/jurisdictional	
<input type="checkbox"/>	Special materials, testing, and inspection, or systems	
<input type="checkbox"/>	Concrete	
<input type="checkbox"/>	Steel fabrication (if required)	

## 9. Monthly Financial Review and Reports

Task		Remarks
<input type="checkbox"/>	Internal FPDU review with support group	
<input type="checkbox"/>	Distribute reports	

### Deliverables

Task		Remarks
<input type="checkbox"/>	Contractor's rolling schedules (with monthly pay progress)	
<input type="checkbox"/>	Contractor's FRI, submittal and change request logs	
<input type="checkbox"/>	A/E site visit logs	
<input type="checkbox"/>	Daily work report	
<input type="checkbox"/>	Weekly work report	
<input type="checkbox"/>	Architect's change order status log	
<input type="checkbox"/>	Schedule of values	
<input type="checkbox"/>	Approved submittals	
<input type="checkbox"/>	Punch lists	
<input type="checkbox"/>	Certificate of substantial completion	
<input type="checkbox"/>	Signed-off permits (final inspection)	

### Approvals

Person		Remarks
<input type="checkbox"/>	Project manager	
<input type="checkbox"/>	Jurisdictional authority	

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## APPENDIX X FURNITURE CHECKLIST

(To download this appendix in word format, click [here](#))

Furniture Type								
Office Type	Desk	Desk Chair	Work Surface	File Cabinet	Shelves	Side Chairs	Chalk/Marker Board	Other
Dean	A	A	A	A	A	A	A	
Director	A	A	B	A	A	A	A	
Department Head	A	A	C	B	A	B	A	
Professor/Post								
Doctor	B	B	D	B	B	C	A	
Secretary/Clerk	C	B	-	C	C	D	-	
Graduate Student	D	C	-	D	C	-	B	
Other								

Specifications			
<b>Desk</b>	A	1 x 2 with matching credenza	<b>Shelves</b> A
	B	.75 x 1.5	B
	C	.75 x 1.5 with return	C
	D	.75 x 1	
<b>Desk Chair</b>	A		<b>Side Chairs</b> A
	B		B
	C		C
	D		D
<b>Work Surface</b>	A		<b>Board</b> A
	B		B
	C		
	D		
<b>File Cabinet</b>	A		
	B		
	C		
	D		

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**APPENDIX XI  
CONTRACTOR EVALUATION FORM**

(To download this appendix in Word format, click [here](#))

**Project Component:**

**Firm Name:**

**Foundation/Structure:**

*Comments for Any Item with (N) or  
(Poor) Rating*

<b>Communications</b> Rate as Y/N or (excellent, good, fair, poor)		
<b>Product Quality</b>		
<b>Overall contractor evaluation</b>		

**AUB FPDU Representative:** \_\_\_\_\_

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## APPENDIX XII END-USER EVALUATION FORM

(To download this appendix in Word format, click [here](#))

**Project Name:**

**Department Rep'd:**

**Team/Group:**

*Comments for Any Item with (N) or (Poor)  
Rating*

<b>Communications</b> Rate as Y/N or (excellent, good, fair, poor)		
<b>Meetings</b>		
<b>Quality of Work</b>		
<b>Overall Evaluation</b>		

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# APPENDIX XIII GENERIC EVALUATION FORM

(To download this appendix in Word format, click [here](#))

**Project Phase:**

**Firm Name:**

*Comments for Any Item with (N) or  
(Poor) Rating*

<b>Schematic Design</b>		
<b>Communications</b> Rate as Y/N or (excellent, good, fair, poor)		
<b>Graphics</b>		
<b>Specifications</b>		
<b>Overall Phase Evaluation</b>		

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## APPENDIX XIV RECEPTION (CLOSEOUT) CHECKLIST

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #: FPDU -</b>
<b>Project Manager:</b>	<b>Date:</b>

### Task List

#### 1. Compile and Complete Punch List Items

	Task	Remarks
<input type="checkbox"/>	Develop agreement among Acceptance Committee as to what punch list items can be addressed after occupancy	
<input type="checkbox"/>	Track additional scope requests from punch items separately	
<input type="checkbox"/>	Verify with Architect and design consultants that all essential items have been identified and completed	
<input type="checkbox"/>	Track and complete any deferred Commissioning items (i.e., deferred testing)	
<input type="checkbox"/>	Verify with Architect and design consultants that all items have been identified and completed	

#### 2. Complete Tool/Equipment Fit-Up Matrix

	Task	Remarks
<input type="checkbox"/>	Identification number	
<input type="checkbox"/>	Room number or building location	
<input type="checkbox"/>	Start up procedures	

#### 3. Complete Training Programs

	Task	Remarks
<input type="checkbox"/>	Mechanical	
<input type="checkbox"/>	Electrical	
<input type="checkbox"/>	Plumbing	
<input type="checkbox"/>	Process piping	
<input type="checkbox"/>	<b>Controls</b>	
	○ Lighting	
	○ Mechanical	
<input type="checkbox"/>	Fire protection and life safety	
<input type="checkbox"/>	Sprinklers	
<input type="checkbox"/>	Audio visual equipment	
<input type="checkbox"/>	Telecommunications	
<input type="checkbox"/>	Furniture	
<input type="checkbox"/>	Special equipment	
<input type="checkbox"/>	Site utilities	
<input type="checkbox"/>	Ensure PPD/PEMC zone and shop staff are properly trained	

#### 4. Assist with E/user Move-In

	Task	Remarks
<input type="checkbox"/>	Confirm movers have been scheduled	
<input type="checkbox"/>	Confirm specialty items requiring special handling have been addressed	
<input type="checkbox"/>	Confirm key/locks	

<input type="checkbox"/>	Confirm phone activation properly scheduled	
<input type="checkbox"/>	Confirm AV equipment installation	

**5. Decommission Vacated Space (If Appropriate)**

Task		Remarks
<input type="checkbox"/>	<b>Decommission Vacated AUB Space</b>	
	○ Engage EHSRM to decontaminate space and remove any unidentified substances	
	○ Obtain clearance letter from EHSRM	
	○ Schedule maintenance to secure space, new keys turned over to PPD/PEMC	

**6. Complete Reception of Works, Reconcile Accounting, and Close Plant Account**

Task		Remarks
<input type="checkbox"/>	Complete the evaluation of delays	
<input type="checkbox"/>	Verify approved extra time	
<input type="checkbox"/>	Identify imputable delays to the University	
<input type="checkbox"/>	Calculate liquidated damages.	
<input type="checkbox"/>	Obtain Acceptance Committee decision.	

**7. Complete Post Occupancy Review and Identify Lessons Learned**

Task		Remarks
<input type="checkbox"/>	One month after move-in, conduct a post occupancy review	
<input type="checkbox"/>	Determine with Acceptance Committee if project goals and expectations were met	

**8. Conduct Warranty Review(s)**

Task		Remarks
<input type="checkbox"/>	Landscape	
	○ Notify maintenance group prior to 3 month Landscaping review	
<input type="checkbox"/>	Project: 11 months after Substantial Completion	
	○ Notify PPD that project equipment warranties expire in one month	
	○ Coordinate a warranty equipment review with PPD/PEMC, architect, MEP consultant, any specialty designers	

**9. Archive Documents/Drawings (Paper and Electronic)**

Task		Remarks
<input type="checkbox"/>	Refer to Document and Drawing Deliverable Matrix - address documents not delivered in the closeout occupancy phase	
<input type="checkbox"/>	Refer to Electronic Closeout Form - complete form and return to FPDU systems support team who will store requested files on CD-ROM and send to archive.	
<input type="checkbox"/>	Retire project from tracking system	

**Deliverables**

Task		Remarks
<input type="checkbox"/>	Completed punch list delivered to project manager and PPD/PEMC	
<input type="checkbox"/>	One-year warranty report copied to project manager and PPD/PEMC	

<input type="checkbox"/>	Final report to vice president for facilities	
<input type="checkbox"/>	Architectural plans to archives. Archives are responsible for updating the campus space inventory. Initiate facility depreciation at agreed time	
<input type="checkbox"/>	Keys and keying plan delivered to project manager	
<input type="checkbox"/>	Surplus materials and contract specified overstock materials delivered to PPD/PEMC	
<input type="checkbox"/>	O&M manuals delivered to PPD/PEMC	

**Approvals**

<b>Person</b>		<b>Remarks</b>
<input type="checkbox"/>	Project manager	
<input type="checkbox"/>	PPD	
<input type="checkbox"/>	FPDU	
<input type="checkbox"/>	Dean	
<input type="checkbox"/>	VP for facilities	

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## APPENDIX XV PHASE REVIEWS AND APPROVALS IDENTIFICATION FORM

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #: FPDU -</b>
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### Phase Approvals

#### Programming

Y/N	Approver	Remarks
	End user (name)	
	Director FPDU	
	Director PPD	
	Director EHSRM	
	Director Security	
	Campus Master Plan Steering Committee	
	Campus Planning Committee	
	Project manager	
	Department head	
	Dean	
	VP for facilities	
	Provost	
	President	
	BOT	

#### A/E Selection

Y/N	Approver	Remarks
	E/user (name)	
	Director FPDU	
	Director PPD	
	Director EHSRM	
	Director Security	
	Campus Master Plan Steering Committee	
	Campus Planning Committee	
	Project manager	
	Department head	
	Dean	
	VP for facilities	
	Provost	
	President	
	BOT	

#### Schematic Design

Y/N	Approver	Remarks
	E/user (name)	
	Director FPDU	
	Director PPD	
	Director EHSRM	
	Director Security	
	Campus Master Plan Steering Committee	
	Campus Planning Committee	
	Project manager	

	Department head	
	Dean	
	VP for facilities	
	Provost	
	President	
	BOT	

**Design Development**

<b>Y/N</b>	<b>Approver</b>	<b>Remarks</b>
	E/user (name)	
	Director FPDU	
	Director PPD	
	Director EHSRM	
	Director Security	
	Campus Master Plan Steering Committee	
	Campus Planning Committee	
	Project manager	
	Department head	
	Dean	
	VP for facilities	
	Provost	
	President	
	BOT	

**Contract Documents**

<b>Y/N</b>	<b>Approver</b>	<b>Remarks</b>
	E/user (name)	
	Director FPDU	
	Director PPD	
	Director EHSRM	
	Director Security	
	Campus Master Plan Steering Committee	
	Campus Planning Committee	
	Asst. Director and Head of Planning and Design	
	Project manager	
	Department head	
	Dean	
	VP for facilities	
	Provost	
	President	
	BOT	

**Reception**

<b>Y/N</b>	<b>Approver</b>	<b>Remarks</b>
	E/user (name)	
	Director FPDU	
	Director PPD	
	Director EHSRM	
	Director Security	
	Campus Master Plan Steering Committee	
	Campus Planning Committee	
	Project manager	
	Department head	

	Dean	
	VP for facilities	
	Provost	
	President	
	BOT	

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## APPENDIX XVI DOCUMENT AND DRAWING DELIVERABLE MATRIX

(To download this appendix in Word format, click [here](#))

<b>Project:</b>	<b>Project #:</b> FPDU -
<b>Project Manager:</b>	<b>Date:</b>

### Action By

### Approved Item

O = Owner/Project Manager	1 = Submit to Owner/PM
S = Subcontractor	2 = Submit to Architect
A = Architect of Record	3 = Submit to Contractor
I = Interior Designer	4 = Submit to Engineer
E = Engineer of Record	5 = Submit to Other
U = User Group	6 = Submit to PPD
C = Contractor	

Certificate of Substantial Completion		3			1				Central Project Files
Certificate of Final Completion		3			1				Central Project Files
Certificate of Occupancy					1				Central Project Files
Temporary Certificates of Occupancy					1				Central Project Files
Unconditional Lien Releases		3			1				Central Project Files
Punch list Report	6	1			2				Central Project Files
Turnover Letter to the User Group	5								PPD
HVAC O&M Manual	6				1				Central Project Files
Plumbing O&M Manual	6				1	3			PPD
Electrical O&M Manual	6				1	3			PPD
Telecom O&M Manual	6				1	3			PPD
Warranties	6				1	3			PPD
Equipment Validation	6		1		1	3			PPD
Final Payment Application/Retention	3				1	3,4			Central Project Files
Design Standards		1	1	1					Central Project Files
Furniture Specifications			1	1					PPD
Interior Finish Samples				1					PPD
Programming Documents		1	1	1					PPD
100% Schematic Design Documents		1	1	1					Central Project Files
100% Design Development Documents		1	1	1					FPDU Archives

100% Construction Documents		1	1	1					FPDU Archives
Permit Documents					1				FPDU Archives
As-Built/Record Documents	6	3	3	3	1	3			FPDU Archives
Change Order Logs					1				PPD
Submittal Logs					1				Central Project Files
RFI Logs					1				Central Project Files
Keys and Locks									Lock Shop
Finance Closeout	5				5				Central Project Files

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**Sign-Off:**

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**Project Manager:**

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**Date:**

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