Facilities Management Mission Statement

The mission of Facilities Management is to support the University by enhancing the quality of physical facilities. We do this through planning, designing, constructing, and maintaining in a responsive, service-oriented, effective, and environmentally conscious manner.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Initiation &amp; Categorization</td>
<td>7</td>
</tr>
<tr>
<td>Planning</td>
<td>13</td>
</tr>
<tr>
<td>Approvals</td>
<td>19</td>
</tr>
<tr>
<td>Architect Selection</td>
<td>25</td>
</tr>
<tr>
<td>Design Review</td>
<td>33</td>
</tr>
<tr>
<td>Construction Delivery</td>
<td>37</td>
</tr>
<tr>
<td>Project Administration</td>
<td>47</td>
</tr>
<tr>
<td>Technical Support</td>
<td>51</td>
</tr>
<tr>
<td>Scheduling</td>
<td>53</td>
</tr>
<tr>
<td>Permitting</td>
<td>55</td>
</tr>
<tr>
<td>Contract Administration Process</td>
<td>56</td>
</tr>
<tr>
<td>Summary</td>
<td>59</td>
</tr>
</tbody>
</table>
INTRODUCTION
INTRODUCTION

Brown’s building portfolio includes classrooms, dormitories, laboratories, libraries, athletic facilities, theaters, office space, and various types of support spaces. Most of the University’s buildings are within the boundaries of the national historic district, and several buildings are listed as single-site entries in the National Register of Historic Places. New buildings, as well as the renewal, modernization, and maintenance of existing facilities, are critical to the mission of the University.

The Project Delivery Process Guidelines (PDP Guidelines) have been developed by Facilities Management, in conjunction with the Corporation Committee on Facilities and Design, to serve as both a communication and working tool that aids in the planning, designing, and constructing of new buildings and renovations. The process and controls developed are based on industry standards combined with the professional experiences of Facilities Management staff that draw from backgrounds in planning, architecture, interior design, engineering, construction, and owner’s representation.

PURPOSE

The primary purpose of the PDP Guidelines is to provide for the best stewardship of the campus facilities. The PDP Guidelines will help to ensure that projects are aligned with the academic mission and stay on track with approved goals, budgets, and schedules.

The PDP Guidelines are designed to facilitate an understanding of the project process for both internal and external stakeholders and users as well as to serve as a tool that:

- Facilitates communication between the Corporation Committee on Facilities and Design and other entities of the University community who have a stake in the project delivery process.
- Facilitates communication between those stakeholders and external consultants and contractors the University may hire to assist in the project delivery process.
- Coordinates the efforts of all those involved in the various phases of project delivery, guiding them through those phases, and helping them to better understand how their roles contribute to the overall process.

Following the PDP Guidelines, for all project types, and providing the proper structure for the process and administration will result in a clearly defined delivery for projects and will result in lower risk and better quality of facilities delivered to the Brown campus.

UNIVERSITY ENTITIES

In the course of a project there are several University entities that initiate, provide input, recommend, and approve the various tasks. The project delivery process is structured around these entities and tasks. The following description of these entities will be helpful in understanding the PDP Guidelines.

Brown University Corporation

The Corporation, the governing body of Brown University, is responsible for establishing broad policies for the operation of the University, for selecting a President to carry out those
policies, for appointing administrative officers and faculty members, and for managing the funds and holding the real estate of the University.

**Corporation Committee on Budget and Finance**

This Corporation committee is responsible for the fiscal affairs of the University.

**Corporation Committee on Facilities and Design**

This Corporation committee is responsible for the physical resources, facilities, landscaping, campus planning, and aesthetic development of the University.

**Real Estate Subcommittee**

This committee is a subcommittee of the Corporation Committee on Facilities and Design and is responsible for making recommendations regarding acquisition and disposition of real estate.

**Public Art Committee**

This committee is a subcommittee of the Corporation Committee on Facilities and Design and is responsible for encouraging and approving the placement of public art on campus.

**Advising Architect**

The Advising Architect is a consultant to the Corporation Committee on Facilities and Design on matters related to planning and design of facilities and landscape.

**Senior Administration**

The Senior Administration consists of the President, Provost, Executive Vice President for Planning, and Executive Vice President for Finance and Administration. In their University capacity they are responsible for providing input, recommendations, and approvals in all phases of the project process.

**Campus Planning Advisory Board**

This board consists of faculty, staff, and students who provide input and feedback on matters pertaining to the physical campus.

**Planning and Design Committee**

This committee is a working committee comprised of representatives from the user group, Senior Administration, the architectural and construction firms, and Facilities Management. It is established for individual projects and is responsible for guiding the project through planning and design documentation.

**Construction Committee**

This committee is an oversight committee comprised of senior level representatives from Senior Administration, user group, architectural and construction firms, and Facilities Management. It is established for individual projects and is responsible for directing and resolving critical issues during the construction phase.

**Facilities Management**

The Department of Facilities Management is responsible for ensuring that the planning, design, construction, and operation and maintenance of all University facilities and grounds support the academic, research, and administrative functions of the University, while balancing financial and technical constraints with aesthetic and historical concerns.
USING THE PROJECT DELIVERY PROCESS GUIDELINES

The PDP Guidelines have been designed around the type of project, the phase of the project, and the role of each University entity. These major elements, their relationship to one another, and their sequence in the project process have been graphically depicted in the Project Delivery Process Chart (PDP Chart), portrayed on the left. The PDP Chart is a matrix illustrating the role of each University entity for the project tasks that constitute the project phases.

Project Phases

The project phase is shown along the top of the PDP Chart. Each phase has one or multiple tasks associated with it, is color-coded, and corresponds to separate sections of the PDP Guidelines as indicated along the edge of each page. Each phase has been elaborated upon in these separate sections. The project phases are as follows:

- Initiation & Categorization
- Planning
- Approvals
- Architect Selection
- Design Review
- Construction Delivery

Project Administration

The Project Administration bar, located at the bottom of the PDP Chart, is connected to each project phase. This is to indicate that this function is carried on throughout the entire project process from initiation to delivery. Project Administration is an area that has many elements and is explained in more detail in the last section of the PDP Guidelines.

Project Type

All projects are categorized into a specific type via the procedure described in the next section of the PDP Guidelines. In this procedure each project is designated to a particular category: Category I, Category II, or Category III. Category I projects represent significant impacts and/or major investments versus Category III projects that tend to have less impact on the campus.

Actions

Each box within the PDP Chart indicates the active role of the University entity. The active roles are shown as either:

- Prepares
- Provides Input
- Recommends
- Approves

The PDP Chart indicates the action of each respective University entity for the various phases of the project. The actions are also associated with the particular project type (Category I, Category II, or Category III). An empty box indicates that the University entity does not play a role in the phase and task.

A modified version of the flow chart is included at the beginning of each section, referencing the location in the process, to be used as a guide as you move through the manual. In addition to the flow chart, there are several other graphics incorporated into the document that further recognize the multitude of entities involved in each phase and clarify the project delivery process used by the University.
INITIATION & CATEGORIZATION
Initiation and Categorization represent the first phase of the Project Delivery Process. The PDP Chart on the left identifies the various committees and parties involved in this initial phase.

To ensure that the University’s resources are utilized in the most effective manner, all construction projects are initiated through a thoughtful and systematic process.

Most facilities projects are initiated through Senior Administration; however, any University entity can suggest a project. Individual departments can also initiate small department-funded projects by contacting Facilities Management directly. These requests are then reviewed by Senior Administration and, if approved, authorized to proceed. Facilities renewal projects are initiated by the Facilities Management Department directly.

Requests are evaluated based on their importance in supporting the Academic Enrichment Initiatives, space requirements, staffing requirements, potential impact on other programs, and funding sources. By addressing these issues prior to initiating a planning study, Facilities Management can minimize the amount of time it spends on projects that are unlikely to come to fruition. If the administration believes the project merits further investigation, Facilities Management will begin a planning study which will specifically identify the project objectives, scope, budget, and schedule requirements.

**PROJECT CATEGORIZATION**

Although every project is unique, the Advising Architect works with Facilities Management to categorize projects into one of three tracks, based on the impact the project will have and the level of investment it represents. The project category helps establish the expectations for design and the appropriate level of oversight. Category I projects represent significant investments and/or major impacts. Consequently, these projects receive a much higher level of oversight than the projects in Category III. The PDP Guidelines are designed to recognize the differences between the three categories in each phase of the process. All projects move through virtually the same phases. However, what happens during each of these steps varies depending on the assigned category. The following sections will highlight this.

See the chart on the following page for more specific criteria.
## Criteria for Categorizing Projects

<table>
<thead>
<tr>
<th>Category</th>
<th>Building Exteriors</th>
<th>Building Interiors</th>
<th>Landscape, Fields, Infrastructure</th>
<th>Public Art, Memorials, Site Furnishings</th>
<th>Real Estate</th>
<th>Planning Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category I</strong></td>
<td>• New buildings, exteriors, and demolitions</td>
<td>• New buildings, exteriors, and demolitions</td>
<td>• Renovations of interior space or public space determined to be historically or architecturally significant</td>
<td>• Major landscape projects</td>
<td>• New memorials&lt;br&gt;• Fountains&lt;br&gt;• Permanent public art</td>
<td>• Master planning studies&lt;br&gt;• Major landscape/streetscape studies&lt;br&gt;• Feasibility studies for anticipated Category I projects</td>
</tr>
<tr>
<td></td>
<td>• Upgrades of buildings determined to be historically or architecturally significant</td>
<td>• Upgrades of buildings determined to be historically or architecturally significant</td>
<td>• Major landscape projects&lt;br&gt;• New fields&lt;br&gt;• Major utility infrastructure projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Projects representing a significant monetary investment</td>
<td>• Projects representing a significant monetary investment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Category II</strong></td>
<td>• Minor additions and upgrades to building exteriors</td>
<td>• Minor additions and upgrades to building exteriors</td>
<td>• Renovations of existing landscaped areas in prominent locations or around important buildings</td>
<td>• Temporary public art</td>
<td>• Leased space and fit out for University programs &lt; 20,000 sf or &lt; 5 years</td>
<td>• Minor landscaping/streetscape plans&lt;br&gt;• Materials handling, utilities and other infrastructure studies&lt;br&gt;• Feasibility studies for anticipated Category II projects</td>
</tr>
<tr>
<td></td>
<td>• Renovations of building interiors that contain substantial scope or complexity and impact interior configuration of prominent buildings</td>
<td>• Renovations of building interiors that contain substantial scope or complexity and impact interior configuration of prominent buildings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Category III</strong></td>
<td>• Restoration, repairs and replacements of exterior building components</td>
<td>• Restoration, repairs and replacements of exterior building components</td>
<td>• Minor replanting of areas&lt;br&gt;• Street trees&lt;br&gt;• Utility infrastructure&lt;br&gt;• Campus infrastructure</td>
<td>• Plaques&lt;br&gt;• Signage&lt;br&gt;• Benches</td>
<td>• Disposition of non-strategic property&lt;br&gt;• Property outside of Providence, RI</td>
<td>• Space utilization studies&lt;br&gt;• Operation based studies&lt;br&gt;• Studies for anticipated Category III projects</td>
</tr>
</tbody>
</table>
### PROJECT DELIVERY PROCESS CHART

<table>
<thead>
<tr>
<th>PHASE</th>
<th>Initiation &amp; Categorization</th>
<th>Planning</th>
<th>Approvals</th>
<th>Architect Selection</th>
<th>Design Review</th>
<th>Construction Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporation Committee</td>
<td>Approves I, II, III</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
</tr>
<tr>
<td>Budget &amp; Finance</td>
<td>Approves I, II, III</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
</tr>
<tr>
<td>Facilities &amp; Design</td>
<td>Provides Input I, II, III</td>
<td>Provides Input I, II, III</td>
<td>Provides Input Real Estate</td>
<td>Provides Input Art Projects</td>
<td>Provides Input Art Projects</td>
<td>Provides Input</td>
</tr>
<tr>
<td>Real Estate</td>
<td>Provides Input I, II, III</td>
<td>Provides Input I, II, III</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
</tr>
<tr>
<td>Facilities &amp; Design Committee</td>
<td>Recommends I, II, III</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
</tr>
<tr>
<td>Public Art</td>
<td>Provides Input I, II, III</td>
<td>Provides Input I, II, III</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
</tr>
<tr>
<td>Advising Architect</td>
<td>Provides Input I, II, III</td>
<td>Provides Input I, II, III</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
</tr>
<tr>
<td>Administration</td>
<td>Recommends I, II, III</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
</tr>
<tr>
<td>Campus Planning Advisory Board</td>
<td>Provides Input I, II, III</td>
<td>Provides Input I, II, III</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
<td>Provides Input</td>
</tr>
<tr>
<td>Planning, Design &amp; Construction Oversight Committee</td>
<td>Recommends I, II, III</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
<td>Recommends I</td>
</tr>
</tbody>
</table>

**Project Administration**
After a project is initiated and categorized, an effective planning study is critical to ensure its successful implementation. During the planning process, expectations are synchronized and the project direction is established. As the PDP Chart on the left indicates, Facilities Management works with a broad constituency on two different levels of planning to establish this direction.

MASTER PLANNING

Master planning allows the University to establish a framework for more defined facilities projects. This master planning occurs on a variety of levels, from the broadest facility planning to fairly mundane operational studies, such as materials handling and sidewalk repairs. In each case the problem is approached by examining the issues on a campus-wide basis. This broad view allows the University to identify all interrelated issues and to develop solutions that can satisfy multiple problems. Master planning studies are initiated by Facilities Management and Senior Administration to respond to a pattern of related requests or problems and are categorized, like a project, as a Category I, II, or III. Typically, consultants are engaged to guide the University through these important studies as they set the course for future projects. These consultants are selected in accordance with the process outlined later in this document.

PROJECT PLANNING

When Senior Administration determines that an individual project request merits further investigation, Facilities Management begins an iterative planning process, which attempts to balance the project needs with the available resources. Throughout this process Facilities Management provides professional assistance to define the primary objective of the project, the specific needs of the client department, and the potential solutions. Working with Senior Administration, Facilities Management then analyzes the options in a campus-wide context and establishes target budgets. The best options are re-examined and re-analyzed until a viable solution can be found.

Facilities Management coordinates all physical planning efforts and often finds solutions that satisfy several seemingly disparate needs. The Strategic Framework for Physical Planning and other more specific master planning and design guidelines provide a structure within which individual planning efforts are coordinated. By identifying key relationships, such as adjacencies to public spaces, utility connections, historic context, neighborhood context, and potential future uses of the site, broad facility issues can be addressed one project at a time. Planning, in accordance with this framework, ensures that each project moves the University closer to its overall goals.
PLANNING

Category I

For significant projects Facilities Management will often contract outside consulting firms to work with Facilities to guide the client group through a process of defining the project goals, developing the space program, identifying and analyzing options, and budgeting. Throughout this process the consultant will frequently review the progress with the Advising Architect, Senior Administration, and the Corporation Committee on Facilities and Design. As the planning process progresses, the consultant or Facilities Management will also work to clearly define the project objective. This will guide the development of target budgets, energy and environmental performance goals, architect selection, and the design process. At the conclusion of the planning study, a formal report is prepared to document the project scope, budget, and schedule for approval by Senior Administration, the Corporation Committee on Budget and Finance, and the Corporation.

Category II & III

For Category II and III projects, the planning process is similar to Category I projects, except the process is not as complex and does not typically involve an outside consultant. Instead Facilities Management works closely with Senior Administration to lead the client group through an iterative process of space programming, budgeting, and scheduling. Options are developed and analyzed by the client group, Senior Administration, and the Advising Architect until a clear direction can be established. During this process, Facilities Management develops a clear statement of project objectives. This statement is incorporated into a final report along with the space program, schedule, and project budget for approval by Senior Administration and to serve as a guide throughout the design process.
APPROVALS
All projects move through an explicit approval process to ensure that the University’s resources are managed effectively. The parties involved in the approval process and the quantity of approvals varies depending on the project category, the size of the budget, and other considerations. The PDP Chart on the left outlines the parties involved in the project and their responsibilities for the various approvals based on the factors identified above.

CAPITAL FINANCING PLAN

Capital projects often involve the commitment of significant amounts of financial and human resources. As a consequence, there are a number of approvals that involve the Corporation Committee on Budget and Finance and the Corporation.

As projects are being planned, they are incorporated into a comprehensive capital plan, either as a specific line item or as a broad allowance (for academic space renovations, for example). As projects become more defined, capital and operating budget implications are included in the capital plan. The capital plan is developed within the framework of a long-term financial plan. The financial plan must incorporate the operating, financing, and programming costs for all capital projects that the University intends to proceed with (new construction, building renovations, and infrastructure). Both the capital plan and the financial plan are updated regularly to ensure that the future costs of any planned capital investments are accounted for in the long-term financial plan. As the capital plan and financial plans are updated, they are reviewed by the Corporation Committee on Budget and Finance and then approved by the Corporation.

PROJECT PLAN

Within the context of the Capital Financing Plan, all projects must be reviewed and approved individually. The planning studies prepared in the previous phase not only identify each project’s objective, scope, budget, and schedule, but they also include a Project Authorization Form with signature lines for each of the parties responsible for approval. When all signatures are received the project account is established and the architect selection process begins.

Category I

Because they typically represent substantial investments by the University, Category I projects are often listed individually in the Capital Financing Plan. The planning studies and the supporting financial plan for these projects are reviewed by Senior Administration, the Corporation Committee for Facilities and Design, and the Corporation Committee on Budget and Finance, who recommend approval to the full Corporation. When sources of funding for 50% of a project’s estimated total budget and incremental operating costs have been committed, the Corporation Committee on Budget and Finance may recommend that the Administration move the project into the design phase. The Corporation Committee on Budget and Finance will review the project again before construction begins to ensure that sources of funding for 100% of the project’s capital and incremental operating costs have been specifically identified in the financial plan. The Corporation Committee on Budget and Finance will recommend approval to the Corporation based on that review.
APPROVALS

Category II & III

The projects that are placed in Category II & III are typically only a part of a line item within the Capital Financing Plan. Therefore, Senior Administration will review the planning studies for these projects, in the context of the overall Capital Financing Plan, for approval. Again, when sources of funding for 50% of a project’s estimated total budget and incremental operating costs have been committed, Senior Administration can approve the project to move into the design phase. Senior Administration will review the project again before construction begins to ensure that sources of funding for 100% of the project’s capital and incremental operating costs have been specifically identified in the financial plan.

Real Estate

The administration is responsible for reviewing any proposals involving the purchase or sale of real estate, the leasing of more than 20,000 square feet of space, or a commitment of more than five years with the Real Estate Subcommittee. Any proposed purchase or lease will be incorporated into capital and financial plans for review by the Corporation Committee on Budget and Finance, who will review for recommendation for approval by the Corporation. The Advisory and Executive Committee of the Corporation must approve divestments of real estate.

Public Art

The Public Art Committee approves the display of public art, whether borrowed or purchased. This committee works to ensure that the University exhibits art that is appropriate and of the highest quality to ensure that a productive discourse continues on campus. The Committee’s responsibilities include the selection of artists for site-specific installations, the selection of specific pieces of art, and the placement of public art.
ARCHITECT SELECTION
## PROJECT DELIVERY PROCESS CHART

### PHASE
- **Initiation & Categorization**
- **Planning**
- **Approvals**
- **Architect Selection**
- **Design Review**
- **Construction Delivery**

### TASK
- **Project Category**
- **Capital Financing Plan**
- **Project Plan**
- **Selection of Architect**
- **Design Funding Authorization**
- **Schematic Design**
- **Site Selection Demolition**
- **Exterior Materials**
- **Delivery Method Selection**
- **Contractor Selection**
- **Construction Funding Authorization**

### ENTITY
- **Corporation Committee**
  - Corporation
  - Budget & Finance
  - Facilities & Design Committee
  - Facilities & Design
  - Real Estate
  - Public Art
  - Advising Architect
  - Senior Administration
  - Campus Planning Advisory Board
  - Planning, Design & Construction Oversight Committee
  - Facilities Management

### PROJECT DELIVERY PROCESS CHART

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation &amp; Categorization</td>
<td>Project Category</td>
<td>Corporation Committee</td>
<td>Approves I</td>
<td>Approves I</td>
<td>Approves I</td>
<td>Approves</td>
<td>Approves</td>
<td>Approves I</td>
<td>Approves I</td>
<td>Approves I</td>
<td>Approves I</td>
<td>Approves I</td>
<td>Approves I</td>
</tr>
</tbody>
</table>

**Project Administration**
SELECTION OF ARCHITECT

The Architect Selection Process represents one of the many significant phases in the project delivery process. Once the project category has been determined, one of three architect selection processes can be implemented. Facilities Management works closely with the various committees and departments to select firms that will contribute to, and build on, the larger goals of the University. The three processes are discussed in this section with flowcharts illustrating each.

The PDP chart on the left identifies the parties involved in the selection process and the level of input each party has based on the project categorization.

CATEGORY I ARCHITECT SELECTION

Architect selection, for new and major renovation projects, is a participatory process designed to ensure that the University's architectural features are shaped by imaginative yet practical decisions. The University's goal is to select architects whose work will add to the distinction of the Brown campus, while satisfying the programmatic needs of users and the University's operational and financial requirements. While the final selection of architects for major projects rests with the Corporation Committee on Facilities and Design, its decisions are responsive to the community it serves.

The architect selection process may draw on expertise from groups that are qualified in various ways to contribute. For all who participate, each architect selection process serves as an opportunity to refine and articulate their understanding of how architecture contributes to (or detracts from) the fabric of the University. The selection process also results in professional and collaborative relationships among architects, contractors, administrators, users, and trustees.
ARCHITECT SELECTION

Develop a Preliminary List of Architectural Firms

The Architect Evaluation Committee (AEC), which collectively represents Brown’s core constituencies, contributes to a preliminary list of potential architects. Project summary information, developed in the planning process, defines the general scope of each project and consequent criteria for architect selection. Project summary information is distributed to the AEC.

The AEC reviews all nominations and develops a final list of nominees. All architectural firms on the final nomination list will receive a Request for Qualification (RFQ) and/or a Request for Proposal (RFP).

Development of a Short List of Architectural Firms

The AEC assesses the following areas to evaluate qualifications submitted in response to the RFQ/RFP. In its response each firm must identify:

- Relevant, prior experience
- Reference contacts

Based on those assessments and criteria outlined in the project summary information, the AEC selects a short list of firms to receive an RFP.

An RFP is developed by Facilities Management and is distributed to those on the short list. The University then conducts a meeting and site tour for firms on the short list. In its response to the RFP each firm must identify:

- Project approach
- Relevant, prior experience
- Staffing
- Availability and licensing requirements
- Schedules
- Reference contacts
- Green Building Design

Final Selection Process

There is an interview process, perhaps preceded by an additional review of responses to the RFP, to refine the short list.

- The AEC conducts interviews with qualified firms. These interviews aim to thoroughly assess the proposals submitted and the relative merits of competing firms in order to prepare a final list of up to three fully qualified firms for selection by the Corporation Committee on Facilities and Design.

- The AEC prepares material that summarizes, in narrative and graphic form, and assesses the pertinent strengths and weaknesses of the firms invited.

- The AEC provides a recommendation to the Corporation Committee on Facilities and Design.

The Corporation Committee on Facilities and Design approves the firm to design the project. Interviews with the Committee are optional.

Following successful contract negotiation, by Facilities Management, the firm will be directed to proceed.
CATEGORY II ARCHITECT SELECTION

Develop a List of Architectural Firms

Facilities Management works with the Advising Architect to generate a list of architectural firms that will receive an RFP. The Advising Architect may also consult with the Corporation Committee on Facilities and Design for its recommendations and input during architect selection.

Selection Process

The AEC assesses the following areas to evaluate qualifications submitted in response to the RFP. In its response, each firm must identify:

- Project approach
- Relevant, prior experience
- Staffing
- Availability and licensing requirements
- Schedules
- Reference contacts

Facilities Management and the Advising Architect conduct interviews. Based on interviews and a complete review and analysis of proposals, Facilities Management makes the recommendation to the Advising Architect for final selection.

Following successful contract negotiation by Facilities Management, the firm will be directed to proceed.
ARCHITECT SELECTION

CATEGORY III ARCHITECT SELECTION

For the majority of renovation, maintenance, and repair projects, Facilities Management issues a standard RFP to several qualified architectural firms. Proposals are submitted to Facilities Management and reviewed based on several criteria including relevant experience with project scope and building type, experience at Brown or similar institutions, proposed fee, and proposed staffing.

The Project Manager and Director of Design and Construction develop the list of architects that receive the RFP. The list includes architectural firms that have worked at Brown successfully in the past and architectural firms that are new to Brown but have worked successfully at other institutions and are qualified to work at Brown.

In some cases, where appropriate, term architects are utilized. The University employs term architects: architectural firms that have been preselected to work on small renovation, maintenance, and repair projects. Three firms are selected for a two-year period. Engaging term architects enables Facilities Management to initiate small projects quickly and reduce project schedules, as well as maintain consistency of services.

DESIGN FUNDING AUTHORIZATION

Design funding authorization is required for all projects. For Category I projects, when sources of funding for 20 percent of a project’s estimated total budget and incremental operating costs have been committed, the Corporation Committee on Budget and Finance will recommend that the administration move the project into the design phase. For Category II and III projects, when sources of funding for 20 percent of a project’s estimated total budget and incremental operating costs have been committed, Senior Administration authorizes Facilities Management to move the project into the design phase.
DESIGN REVIEW
PROJECT DELIVERY PROCESS CHART

PHASE

Initiation & Categorization

Planning

Approvals

Architect Selection

Design Review

Construction Delivery

TASK

ENTITY

Project Category

Master Planning Study

Project Planning Study

Capital Financing Plan

Project Plan

Selection of Architect

Design Funding Authorization

Schematic Design

Site Selection/Demolition

Exterior Materials

PHASE

Approvals

Architect Selection

Design Review

Construction Delivery

Project Administration
The design of all projects at Brown receives a high level of scrutiny beginning at the earliest design stages and continuing through construction documents. The chart on the left identifies three specific milestones within this process (Schematic Design, Site Selection/Demolition, and Exterior Materials.)

As the diagram below suggests, the number of parties involved in the review process increases as the project category moves from Category III to Category I.

**Design Review Process Diagram**

For all projects, the Department of Facilities Management coordinates a detailed design review. (See Project Administration.) These reviews ensure that all programmatic and operational needs will be satisfied.

For Category I and II projects, the design is also reviewed by the Advising Architect. This “peer” review occurs at regular meetings with Facilities Management senior staff and helps to ensure a high design standard for all visible projects.

At the highest level (Category I), projects are reviewed by the Corporation Committee on Facilities and Design. For these reviews, the architect is typically invited to present the design to the committee for feedback. These reviews culminate with the specific approvals described below.

**SCHEMATIC DESIGN**

At the end of schematic design the University will specifically approve the massing, floor plans, site plans, sections, elevations, and MEP systems. Although the level of detail required for these approvals is higher than standard schematic design, the approval at this point recognizes that this is relatively early in the design process.

**SITE SELECTION/DEMOLITION**

For Category I projects, the full Corporation will vote to approve both the site selection and building demolitions that may be required for the project. After reviewing a thorough site selection study, the Corporation Committee on Facilities and Design will vote to recommend the site selection and/or demolition to the full Corporation.

**EXTERIOR MATERIALS**

Near the end of the design development process another design approval is required for all Category I projects that include new exterior construction. For these projects the exterior materials must be reviewed and approved by the Corporation Committee on Facilities and Design. Typically, this is done after preliminary screening of materials and the construction of a mock-up panel.
CONSTRUCTION DELIVERY
CONSTRUCTION DELIVERY

This section describes each of the three construction delivery methods that are used on campus; the various competitive processes that are employed when selecting construction managers, contractors, and subcontractors; and the administrative controls that are used for project oversight.

The PDP Chart on the left identifies three major tasks included within Construction Delivery (Delivery Method Selection, Contractor Selection, and Construction Funding Authorization) and entity involvement based on the task.

DELIVERY METHOD AND CONTRACTOR SELECTION

A construction delivery method is the process by which a project is managed from the initial design phase through completion of construction. Three alternative methods are commonly used in managing facilities projects at Brown: the linear method, the parallel method, and the design/build method. Each method offers the University different levels of control over the project duration, design, cost, and scope. The applicability of each method is weighed on a project-by-project basis prior to deciding which to employ. The project complexity, required time schedule, scope of work, costs, and risks are taken into account when determining the delivery method. Once the method is selected, the established operating procedures, to obtain the services needed to execute the project successfully, are followed. Within each of the descriptions the task of contractor selection is explained as it pertains to the specific delivery method. Unlike the majority of phases explained thus far in the PDP Guidelines, the method of construction delivery is not tied to the type of project (Category I, II or III). The delivery processes described herein can be applied to any type of project. Consequently, the understanding and selection of the method is critical to the success of the project.
CONSTRUCTION DELIVERY

The Linear Method

The linear method allows for better control over scope but takes the longest amount of time to complete. This delivery method is used on the majority of projects at Brown. It is used for essentially all projects that do not involve complex design work, existing conditions, or phasing.

This method allows the architect and consulting engineers time for the completion of full construction documents (drawings and specifications) prior to the project being competitively bid and awarded to general contractors. This method relies heavily on the thoroughness of the construction documents and sometimes can create an adversarial relationship between the architect, contractor, and Brown, due to change order issues or issues with the construction documents. Since the contractor is selected at the conclusion of design, the benefit of a builders’ perspective on constructability, material selection, and value analysis does not exist.

The process for selecting general contractors begins when the design phase of the project is complete. Facilities Management prepares a bid list of three to six general contractors. Inclusion of a contractor on the bid list is based on meeting the University’s pre-qualification requirements, the contractor’s recent performance on similar projects (particularly on Brown projects), review of any past issues, and current workload including other projects at Brown. Contractors with no previous experience at Brown may be included on the bid list if they have demonstrated experience that is specific for a particular project (an example would include a specialty contractor that has experience building high-performance clean rooms).

Brown’s bid process includes a pre-bid conference, an on-site project review, and responses to bidder questions with addenda clarifications. General contractors submit sealed bids to the Purchasing Office by a specific deadline. The Purchasing Office opens the bids and forwards the results to the Facilities Management Project Manager. The Project Manager and design team review the bids and conduct a scope review session(s) with the low bidder. The scope review session(s) involves the apparent low bidder, the design team, Brown’s Director of Design and Construction, and Project Manager. They review the construction documents, the bid, bid alternates (adds and deducts), allowances, value management, and schedule to verify that the general contractor thoroughly understands the project and to ensure that Brown qualifies the bid as complete. The Director of Design and Construction and the Project Manager recommend which bidder should receive the contract award, based on cost, quality of work, and all of the other factors that go into such a decision. An American Institute of Architects (AIA) contract, modified by Brown University, is prepared for the project and is then executed between the general contractor and the University.

In some cases, where appropriate due to schedule constraints, term contractors are utilized. The University employs term contractors: contractors that have been pre-selected to work on small renovation, maintenance, and repair projects. Three companies are selected for a two-year period. Engaging term contractors enables Facilities Management to complete small projects quickly and to reduce project schedules.
CONSTRUCTION DELIVERY

Linear Method General Contractor Selection

1. Develop bid list
2. Pre-bid meeting with contractors
3. Bids submitted by contractors
4. Review of bids
   - Recommendation to Award
5. Category I
   - final approval by
   - Senior Administration
6. Category II & III
   - final approval by
   - Facilities Management
7. Review by construction attorney
8. Contract negotiation & award
CONSTRUCTION DELIVERY

The Parallel Method

| Design | Pre-Construction | Bid | Build |

The parallel method allows the University to better balance the risks associated with project scope, time, and cost. This method is generally used on large and/or complex projects.

This method allows for the architect and engineers to design the project while a construction manager (CM) works in parallel performing pre-construction services. This method enables the designer, builder, and Brown to work collaboratively from the beginning of design. Brown and the design team receive the pre-construction services (i.e. input on constructability, feasibility studies, cost estimating, scheduling, and life cycle analysis) while the project is in the design phase. The ability to receive this input during design helps to ensure that the project goals are achieved. In addition, the ability to know the total cost of the project as the design progresses is a benefit instead of waiting until the design is 100 percent complete and the project is bid. By having this information, the design team and Brown are able to adjust the design to stay within budget as many forces, including market conditions, are changing.

Under this method, a Construction Management Selection Committee is established to select a construction management firm to provide both pre-construction and construction management services. The committee membership depends on the type, size, and complexity of the project.

Once the design and pre-construction services are completed, a contract amendment is executed that contains the Guaranteed Maximum Price (GMP) for the construction of the project. Arriving at the final GMP often entails a back-and-forth process of questions and clarifications, scope reviews, and cost reviews. The process provides Brown with further assurances that the CM understands and agrees to the scope of work and is offering a fair and reasonable GMP price, commensurate with the level of risk it is undertaking. Under the contract, the CM is required to competitively bid all trade subcontracts (to a minimum of three bidders approved by the University), perform scope reviews, and retain the lowest qualified bid on behalf of the University. During this process, Facilities Management and the design consultant participate in pre-bid conferences and scope review sessions to ensure that the correct scope, cost, and schedule are bought out. The CM can proceed only after Facilities Management approves the bids. As each subcontractor contract is bought out, the University signs an approval document called the Recommendation to Award (RTA). The RTA contains the entire bid, scope review, and contract information for the subcontractor award.

To help ensure that the CM is casting a wide net for trade subcontractors and thereby increasing competition, Brown often recommends subcontractors with whom Brown has worked and enjoyed good success. Brown’s CM contracts typically provide incentives based on achieving savings from the GMP. This creates a powerful incentive for the CM not to just go with high price subcontractors. It is important to note that at the end of the project the University pays the lower of either the GMP or the actual cost of the work. The type of contract that is employed in this method is fully auditable.
CONSTRUCTION DELIVERY

Parallel Method Construction Manager Selection

CMSC membership can be formed by representatives from the following groups:
- Senior Administration
- User group
- Facilities Management
- Architect (Non Voting)

1. **RFP to selected firms**
2. CMSC evaluates proposals
3. CMSC conducts interviews
4. CMSC conducts site visits (optional)
5. CMSC prepares recommendation report

- Category I Senior Administration
- Category II & III Facilities Management

- Reviewed by construction attorney
- Contract negotiation & award
- Pre-audit by University Auditor
- Preconstruction services
- Construction
- Audit

- GMP
- Review by construction attorney
- Contract negotiation & award
- Pre-audit by University Auditor
- Preconstruction services
- Construction
- Audit

Parallel Method Subcontractor Construction Phase

1. Construction Manager
2. Fee
3. General conditions
4. Bid subcontractor packages
5. Prepare bid and packages
6. Solicits a minimum of 3 bids
7. Within budget?
8. RTA to University
9. University approves RTA
10. Contract awarded

- Waiver from control budget
- Scope review sessions
- No
- Yes
CONSTRUCTION DELIVERY

Design/Build Method

<table>
<thead>
<tr>
<th>Design</th>
<th>Pre-Construction</th>
<th>Bid</th>
<th>Build</th>
</tr>
</thead>
</table>

The design/build (D/B) method is used for projects that have a clear programmatic and design scope. This method provides for the fastest project delivery. Although it allows for the shortest time, it potentially increases the risk of scope and cost.

To truly fast track a project the architect and builder have to work closely together from the very beginning of the project. By using this method, the construction work begins prior to the completion of the entire design. Under this method, initial phases, such as site and foundation work, are designed up front and then bid out to subcontractors and begun. This occurs at the same time that the remaining packages progress through the design phases.

The processes and criteria by which we select the design/build or construction management firm are the same as outlined for the parallel method. The firms propose a price for preconstruction services, general conditions, and fee or a guaranteed maximum price for the entire project including final design and construction if the documents are complete enough at the time of the RFP. The contract is awarded based on the CM Selection Committee (CMSC) format described on the preceding page. The committee membership depends on the type, size, and complexity of the project. A modified AIA contract is prepared for the project and is then executed between either the design/build entity or the construction manager and the University.

CONSTRUCTION FUNDING AUTHORIZATION

Construction Funding Authorization is required for all projects. For Category I projects the Corporation Committee on Budget and Finance will review the project again before construction begins to ensure that sources of funding for 100 percent of the project’s capital and incremental operating costs have been specifically identified in the financial plan. The Corporation Committee on Budget and Finance will recommend approval to the Corporation based on that review. For Category II and III projects Senior Administration will review the project before construction begins to ensure that sources of funding for 100 percent of the project’s capital and incremental operating costs have been specifically identified in the financial plan. Senior Administration authorizes Facilities Management to move the project into the construction phase.
D/BSC membership can be formed by representatives from the following groups:

- Senior Administration
- User group
- Facilities Management

Design/Build (D/B) Contractor Selection

D/B Selection Committee (D/BSC)

Prepare RFP package w/ defined scope of work

RFP to selected firms

D/BSC conducts interviews

D/BSC conducts site visits (optional)

D/BSC prepares recommendation report

Category I Senior Administration

Category II & III Facilities Management

Review by construction attorney

Contract negotiation & award

Pre-audit University Auditors (optional)

Schematic design

Schematic design approval F&D

GMP

Construction

Post audit

A
PROJECT ADMINISTRATION
Project Administration consists of the oversight mechanisms that we employ with every facility project to ensure that the project is successful. This section includes sub-sections pertaining to the project organization, technical support, scheduling, permitting, the contract administration process, and project closeout.

As the PDP Chart on the left illustrates, Project Administration is the common element that ties all the phases together. By providing oversight throughout the entire process, Facilities Management can ensure that projects are initiated, planned, developed, and built in the best interest of the University.

PROJECT ORGANIZATION

The organization chart on the following page represents the structure and oversight of those responsible for the successful completion of projects at Brown University. Two main committees are created to directly oversee the planning, design, and construction process are the Planning and Design Committee and the Construction Committee.

Planning and Design Committee

At the beginning of the design process a Planning and Design Committee is established. The Planning and Design Committee is responsible for guiding the project through the planning and design process and is comprised of representatives from the user group, Facilities Management, Senior Administration, the architect, and the construction manager if applicable. Facilities Management and other University departments are brought into the Planning and Design Committee meetings as required for the specific project. These meetings provide a forum for coordination of the various aspects of the project during the design process.

Construction Committee

Once construction begins, a Construction Committee is assembled to oversee the project and the contractor during the construction phase of the project. On major capital projects a higher level of construction oversight is required and for these major projects the committee is comprised of senior level representation from the University administration; senior level representation from the user group, i.e., department heads; principals representing the architectural firm; construction management company; and senior level representation from Facilities Management including the Vice President for Facilities Management, the Director of Design and Construction, and the Project Manager. These meetings provide a forum for project updates and discussion of critical project issues that need to be resolved at a higher level during the construction phase of the project.
PROJECT ADMINISTRATION

Special Consultants

Certain projects may require the services of special consultants during the design phase. Special consultants who work with the University's project team to provide appropriate levels of expertise include the following:

- Document Coordination Consultants
- Historic Interiors Consultants
- Exterior Envelope Consultants
- High Performance Building Consultants
- Code Review Consultants
- Independent Cost Estimators
- Environmental Consultants
- Lighting Consultants
- Landscape Master Planning Consultants
- Acoustical Consultants
- Commissioning Agent
TECHNICAL SUPPORT

The Engineering Office, within the Department of Facilities Management, coordinates the technical aspects of project planning, design, and construction in the following areas to ensure that the goals of the University and the campus Master Plan are met:

Standards

All projects are required to follow Brown University Facilities Design Guidelines, a document maintained by the Engineering Office and which can be accessed online at the Facilities Management website.

Utilities

The University-owned utilities (high temperature hot water, electric grids, and satellite chilled water plants) and public utilities are reviewed and coordinated for each project. All utility connections to the University-owned utility systems are made in accordance with the Site Utilities Master Plan.

Energy Rebate Programs

All projects are required to participate in the rebate programs offered by the local utility companies unless designers demonstrate that the project does not include work involving mechanical and electrical equipment. The Facilities Design Guidelines provides an overview of the various rebate programs available to be used on a project.

Environmentally Conscious Design

Projects are expected to commit to a high level of environmentally responsible design. Environmentally responsible design encourages the design team to incorporate the best elements of sustainable, high performance, and energy efficient design and construction practices. The goal is to reduce operating costs, improve the health and productivity of the occupants, and minimize negative environmental impacts over the life of the building. The team should use a whole-building, integrated design approach and include life-cycle cost analysis throughout the design process.

LEED (Leadership in Energy and Environmental Design) should be used as the primary guideline for design. Select projects will be registered and complete the full certification process under the appropriate LEED Rating System. The decision to register and the target level of certification will be determined according to the Project Delivery Process, and should be made by the end of the Planning Phase, prior to Architect Selection. The commitment to LEED certification should be made no later than the end of the Design Review phase.

Commissioning

Commissioning is a systematic process of quality control and assurance performed by an independent consultant. It provides documented confirmation that a facility fulfills the functional and performance requirements of the building owner, occupants, and operators. The commissioning process establishes and documents Brown’s criteria for
system function, performance, and maintainability and verifies and documents compliance with these criteria throughout design, construction, start-up, and the initial period of operation.

On new building construction projects, full mechanical and electrical commissioning is required; building envelope commissioning is typically performed. The University normally involves the commissioning agent at the beginning of project design.

Facilities Management Review

The Facilities Management Design Review is a formal review process that occurs at various stages of the project, depending on the complexity. Facilities’ Operations, Engineering, Planning, and Design and Construction, as well as the University’s offices of Environmental Health and Safety, Computing and Information Services (CIS), the University’s Resource Efficiency Manager, and the University’s insurance carrier review all projects. In addition to these internal reviews, various agencies may be involved in the project design review process including the Providence Preservation Society (PPS), the Providence Historic District Commission (PHDC), the State Historic Preservation Officer (SHPO), and local code enforcement officials. All review comments are transmitted to the project architect for response and inclusion in the construction document package.

Facilities Management design review is required at the following stages:

- Schematic documents for large projects, or design narratives on small renovation projects
- Design development documents for large projects, or 50 percent design documents on small renovation projects
- Various reviews of construction documents for large projects at different stages, or 95 percent documents on small renovation projects
- Submittals/products/shop drawings
- Operation & Maintenance (O&M) manuals
- Punch list walkthrough
- Training materials for O&M training
- Commissioning documents

The submittal review process is similar to the plan review but it specifically involves those individuals whose expertise is directly related to the material or components being reviewed, as well as involving the project architect and engineers. This review involves a formal sign-off on the submittal.

The punch list review occurs at the point of substantial completion of a project. It involves approval of actual work in place and is conducted by many of the same individuals who reviewed the plans and submittals during project design and construction. The punch list also requires a formal sign-off by Brown as well as by the project architect and engineers.
SCHEDULING

Overview

The master project schedule identifies project tasks and organizes them into a sequence of events; it is the cornerstone of any well-managed project. The process of building the schedule enables the Project Manager to identify its milestones, understand the proper linkage of events, assist in resource planning, and establish goals for the team and project.

The schedule is monitored and updated as the project moves through design, permitting, and construction. The Project Manager is responsible for compiling and maintaining this overall schedule.

The master project schedule does not replace the detailed project schedule, which is comprised of the master schedule and the design and construction contractor’s schedules. The Project Manager may designate a member of the project team to be responsible for maintaining the project schedule.

Milestones

The well-constructed schedule becomes the framework that organizes the project team to work toward common goals. It provides the Project Manager with a tool to manage to a desired outcome and with a means to measure the team’s performance. The schedule includes planned milestones that ensure the success rate of the project.

Sample Master Project Schedule

A sample master project schedule, typical of those used as starting points for all projects at Brown, is shown on the following page. It is structured for a typical Category III project using the linear (design, bid, build) project delivery method. To highlight the overall organization and logic of the schedule and specific milestones, specific design and construction tasks for each phase are not included. The durations listed are typical and depend on numerous variables that are unique to each project. The level of detail provided is representative of a typical project.
Sample Master Project Schedule - Category III
PERMITTING

The permitting process begins during a project’s schematic design phase, when the design team meets with local authorities to complete a preliminary review of the drawings for code compliance. Suggested changes are then incorporated into the Construction Drawings, which are formally submitted for review to the required agencies. Promptly acquiring the building permit and related approvals reduces uncertainty in both the project budget and schedule.

The Providence Fire Prevention and Fire Telecommunications offices must also review plans for code compliance, noting any deficiencies to be corrected, and send a letter of approval to the Department of Inspections and Standards before a building permit may be issued. Depending upon the location and scope of a project, additional approvals may be required from agencies such as the Historic District Commission and the Narragansett Bay Commission. Projects may involve work on existing structures with preexisting, nonconforming conditions that cannot be modified as part of the project to meet current building and fire code requirements. In such cases, variances are sought.

The permitting process typically takes several months and can vary greatly, depending on the workload of permitting agencies. Brown may engage the services of plan checkers or local code consultants in order to shorten the process of obtaining permits.

City and State Approvals

City of Providence

- Department of Inspections and Standards
- Building Board of Review
- Zoning Board of Appeals
- Fire Prevention
- Fire Telecommunications
- Fire Board of Appeals
- Department of Public Works
- Water Supply Board
- Providence Historic District Commission (PHDC)

State of Rhode Island

- State Fire Board
- Elevator Inspector
- Department of Health
- Department of Environmental Management (DEM)
- Rhode Island Historical Preservation & Heritage Commission (SHPO)
- Narragansett Bay Commission
PROJECT ADMINISTRATION

CONTRACT ADMINISTRATION PROCESS

This section documents the procedures utilized to help ensure that the costs the University incurs are fair and reasonable and that the risks associated with the scope, cost, and time of the project are managed properly. The contract administration process measures include the following:

Prequalification Requirements

Brown’s Purchasing Office and Facilities Management Department have a thorough prequalification process for contractors who desire to work on campus. This pre-qualification process ensures that all potential bidders have the proper experience, insurance, and financial strength to take on a project. This helps minimize the likelihood of delay or cost escalation later. It is important to note that very few of Brown’s projects end up in dispute resolution, which is partly attributable to the fact that Brown is diligent in pre-qualifying contractors. The Purchasing Office and Facilities Management Department continually evaluate existing and new firms to ensure that the University has a broad but well-qualified list of potential contractors.

Brown University selects contractors from a list of firms who have been pre-qualified for submission of construction bids and proposals. Interested firms are asked to provide a company biography; certificates of insurance commensurate with Brown standards; and proof of financial stability, usually AIA Document A305: Contractors Qualification Statement.

Bidding/Proposal Requirements

The University requires that the selection of firms for design and construction services be done through a competitive process - either a bid or a proposal process.

The PDP Guidelines sections on Architect Selection and Construction Delivery describe the selection process for architects, consultants, and contractors in detail. In addition to the process and requirements outlined in these two sections, the University has additional criteria that must be considered in the bidding and proposal process.

The requirements for projects that utilize general contractors or trade contractors working directly for the University vary based on project size.

Cost thresholds are generated by the Purchasing Office and fall in the following requirement categories:

• Facilities Management obtains a minimum of one written bid for the work if the construction cost is less than the established threshold. A University purchase order is required to execute the work.

• The Purchasing Office and Facilities Management obtain a minimum of three written bids when the construction cost is greater than the established threshold. A contract and purchase order, between the contractor and the University, are required to execute the work.
Exceptions to the minimum requirements can be granted by Senior Administration or the Purchasing Office if special circumstances warrant, for example emergency projects, market conditions, specialty contractors, or special project conditions.

Contracts
Facilities Management has worked closely with Brown's Office of the General Counsel and outside construction attorneys to develop a number of approved-to-form contractual agreements. There are a range of types of contracts that could be executed for design and construction projects. For construction, Brown usually enters into a lump sum contract, a guaranteed maximum price (GMP) contract, or a design/build contract. Contract requirements based on the project size are noted above.

Pre-Construction Audits
The University's Internal Audit Office and Facilities Management conduct construction pre-audits on selected major capital projects. When a Construction Manager (CM) is employed on a major capital project, the CM is asked to adhere to a pre-determined percentage of mark-up on all direct charges. The intent of requiring a pre-determined mark-up, on self-performed and direct-billed services, is to provide equity in the bidding process. The mark-up rate is based on an industry average and is re-examined during interim and post-construction audits and re-audited periodically.

Interim and Post-Construction Audits
At the conclusion of all major capital projects, an audit of the Construction Manager is conducted by an external auditor, selected in coordination with Brown's Internal Audit Department, to ensure that the University has paid for only work-in-place through the CM contract. On very large projects interim audits are conducted at the mid-point of construction. Following mutual review of the post-construction audit report, Brown and the Construction Manager agree upon a final amount that is to be refunded or charged to the project. Although post-construction audits are normally conducted only on major capital projects, Facilities Management reserves the right to request a post-audit on any CM contract, regardless of size.

Change Order Process
Change orders are required when the scope of work, duration of the project, or total cost is to be changed. All contracts specify how change orders are to be handled. Prior to commencing any additional work, the contractors or sub contractors must submit a change estimate to the Project Manager detailing proposed changes and estimating the costs. Facilities Management reviews and approves the Change Order requests, often with input from the Architect and independent cost consultant on larger projects. Change Order requests for a significant dollar amount, scope change, or completion date change must be approved by the appropriate level within the administration. All approved Change Orders result in a formal modification of the contract.
Invoices & Payment Applications

It is Facilities Management’s policy to pay all invoices within the terms of the contract. The financial coordinating staff, in the Office of Design and Construction, ensure that invoices and payment applications are processed in a timely manner. Invoices and applications for payment are reviewed by the Financial Coordinator and the Project Manager. The Project Manager also approves the invoice for payment after verifying completeness of work, services and material, and discussing any discrepancies with the vendor. An invoice or application may be approved in full or in part.

Project Closeout

The closeout phase represents the transition point from the project delivery process to the occupancy and turnover of the finished and fully commissioned project to the user group and Facilities Management’s Physical Plant Office.

The closeout process begins during the construction phase with the planning and preparation for the user group relocation and move coordination. As-built drawings are starting to be prepared; the collection of information, for preventative maintenance plans, is being organized; systems testing, certification, and commissioning is completed; and systems training, for maintenance staff, is conducted during the final stages of the construction project.

The closeout process continues during occupancy of the building and involves the completion of all remaining punch list items and the final submittals of the as-built drawings and Operations & Maintenance (O&M) manual. The project closeout manual contains all of the equipment data sheets for the various equipment and systems in the building, historical records of the building infrastructure, testing and certification documents, warranties, emergency contact information, and preventative maintenance requirements from the equipment manufacturer. This information enables the successful facility planning, maintenance, and implementation of preventative maintenance activities and the Component Renewal Program.

The warranty period for the project begins at substantial completion / occupancy (and usually lasts for one year). The remaining financial closeout of the project includes a post construction audit, reconciliation of the project account, legal releases of liens, and issuance of all final payments.
The PDP Guidelines serve as a communication tool that clarifies the project delivery process for all involved parties. These guidelines have been designed to describe various types of projects, the multiple phases of a project, and the role of the governing University entities. The major tasks, their relationship to one another, and their sequence in the project process have been explained in detail in each section and are graphically illustrated throughout the document.

Use of the PDP Guidelines will ensure that projects stay on track with approved goals for program, quality, budgets, and schedules. The guidelines will also help to ensure that projects are aligned with the academic mission of the University and provide for the best stewardship of Brown’s campus facilities well into the future.