

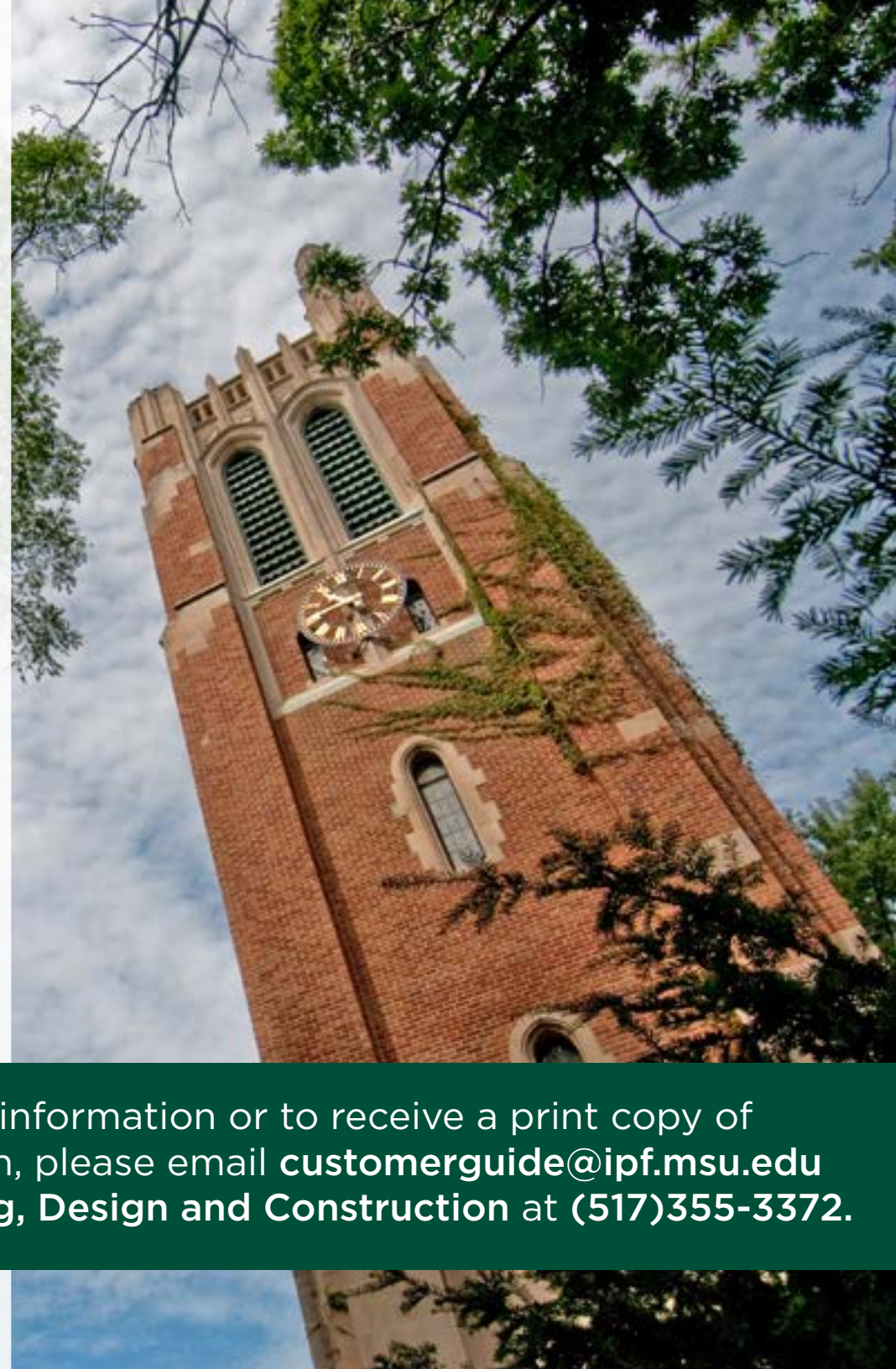
**MICHIGAN STATE**  
UNIVERSITY

Infrastructure  
Planning and Facilities

# CAPITAL PROJECT DELIVERY GUIDE



For additional information or to receive a print copy of this publication, please email [customerguide@ipf.msu.edu](mailto:customerguide@ipf.msu.edu) or call **Planning, Design and Construction** at **(517)355-3372**.



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*Welcome* to the Customer Guide to **Capital Project Delivery** at Michigan State University. This guide describes the planning, design and construction phases for new and renovated campus facilities.

This guide will help you better understand the processes involved as we partner with you to progress from initial planning through occupancy of the completed space.

As the project progresses, whether it involves only a cost assessment for budgeting or complete design and construction services, there will be continuous communication with you, the customer. This will include site visits, meetings, e-mail and other types of communication throughout the duration of the project.

### OUR COMMITMENT TO BUILDING CUSTOMER RELATIONSHIPS

- At Infrastructure Planning and Facilities (IPF), our goal is to be the most high-performing, innovative, leading-edge facilities organization in the nation, with a focus on quality, customer satisfaction and value in all we do.

# PLANNING

## Getting Started

To begin a capital project, you, the customer, need to first obtain departmental leadership and/or other committee approval. Obtaining approval will depend on your department's specific requirements.

Project requests submitted for academic space projects are subject to approval by **Facilities Planning and Space Management** in the Office of Planning and Budgets. Service requests for non-academic projects only require departmental approval. Once you have project approval, the next step is to submit an online **Service Request** to IPF. This document triggers a **preliminary cost assessment (PCA)** for a project.

The PCA is a conceptual cost evaluation without the benefit of drawings or detailed investigation. It helps MSU administrators make initial plans, but it's not intended to be used as a final budget.

If more information is required before moving to the design phase or seeking approval from the Board of Trustees, IPF and the customer may arrange for a more detailed study. The PCA is provided at no cost to you. However, if a further detailed study is required, the customer is responsible for those additional costs.

## CUSTOMER REQUEST

Prior to requesting new construction or renovation services from Infrastructure Planning and Facilities, refer to **Facilities Planning & Space Management Policies and Procedures** in the **Manual of Business Procedures**, to determine what steps you need to take within your department. There will be two required budget-related items.

**No. 1 - Estimate (Yes/No):** The first is to indicate if you are requesting a cost estimate for the service. If you select "Yes", then a Preliminary Cost Assessment will be provided prior to any services.

**No. 2 - Account Number:** The other item is an account number. If you indicated you wish to receive an estimate, there will not be any charges applied to your account number until you give authorization.

## PROJECT FUNDING:

- A plant fund account is established by IPF for any project having a budget of \$250,000 or above, as mandated by the university policy.
- Once the plant fund account is established, a transfer of funds from the funding source(s) is initiated by IPF Support Services, which then monitors and reconciles the account monthly for the duration of the project.
- Some potential funding sources include federal, grant, donor, unit departmental, just-in-time maintenance, joint capital outlay committee and energy funds.
- Actual project expenditures to the billing account may be viewed by customers in Enterprise Business Systems (EBS) as well as on the monthly **IPF customer statement**.
- When the project is completed, any excess funds are returned to the funding sources. Once the transfer is complete, the plant fund account is closed.



## PLANNING & PROJECT FUNDING

The programmatic needs of the project drive the PCA. These may include functional requirements, space characteristics, room lists, square-footage needs, building-efficiency data, adjacency requirements and occupancy projections.

- The PCA will include a review of non-programmatic costs. These costs may include impact from applicable building codes, safety, barrier-free access, security and fire protection.
- Energy planning and conservation goals; sustainability measures. These include items such as recycling and water conservation, environmental impacts on zoning, infrastructure capacity, just-in-time maintenance needs, hazardous-material remediation, site and landscape needs.
- Impacts on traffic and parking. All projects will be examined to comply with the university's master planning principles and infrastructure strategy.

Developing the PCA requires investigating the existing facility. This includes review of the just-in-time maintenance list as well as minor demolition for inspections.

The PCA also includes identification of work coordination opportunities that may benefit the university long term. The office of the executive vice president for Administrative Services will be consulted to provide guidance.

The PCA is expressed as an "order of magnitude" range and is based on anticipated costs at the time the project is planned.



## WHAT YOU CAN EXPECT

- We promptly respond when we receive your request.
- We thoroughly research existing conditions affecting the scope of your project.
- We bring proven expertise in applicable codes and university policies affecting the scope of your project.
- We provide good faith advice and guidance to help you achieve your facility objectives.

## WHAT IPF EXPECTS

- You initiate a PCA using the online Service Request form.
- You provide sufficient information to clearly explain needs.
- You collaborate with us on potential solutions and options.
- You obtain required authorization should project proceed.

# THE TEAM



# DESIGN & BIDDING

The design phase begins when IPF receives authorization to plan for a renovation or new construction project.

This phase of a major capital project (\$1 million and above) includes four distinct milestones: program development, schematic design, design development, and construction documents.

## 1. Program development/verification (feasibility)

This is a written description of the requirement for the project, developed by the project team in collaboration with you, the customer. This document includes project objectives and detailed information regarding all affected spaces, including size, relationships and technical aspects. The following approvals are required to move the project forward:

**Executive Stakeholder Review:** The Campus Infrastructure Planning Work Group (CIPWG) reviews major projects for consistency with the Campus Master Plan. CIPWG also advises senior leadership on the project and recommendations are shared with MSU Board of Trustees (BOT).

**Project Approval:** BOT (step 1) authorizes planning, which generally results in continuing development of project design allowing design consultant and construction managing firms to be hired to assist in the development of the project.

## 2. Schematic design

The schematic design determines the project's general scope and design features, including floor plans, adjacencies, materials, building massing, character, site and relationship to its surroundings.



## 3. Design development

This milestone defines the project to a greater level of detail, resulting in a clear, coordinated description of all the aspects, including systems and materials. The following approvals are required:

**Review:** Construction Junction: Open meeting to inform campus community about the project and gather feedback.

**Review:** CIPWG (step 2) reviews program development, schematic design, makes recommendation to proceed to BOT.

**Project Approval:** BOT (step 2) gives authorization to proceed, commits to a scope, schedule and budget.

## 4. Construction documents

This step finalizes drawings and specifications for all project components. The objectives are to produce bid documents, solicit bids from construction contractors and obtain all necessary permits. The following is required for general contractor approval:

**Project Approval:** If a project is delivered as design bid build (General Contractor), the BOT (step 3) approves the contractor after bids.

## MSU ADMINISTRATION

MSU's Board of Trustees (BOT) has general supervision over the university and its funds. For projects having a budget of \$1 million and above, and projects of lesser value that involve a footprint change. BOT approvals are required at several points during the project's delivery.

Prior to approval by the BOT, projects are reviewed by key MSU leadership. This often requires a formal presentation. All funding plans are approved by the Office of Planning and Budgets, the Vice President for Finance, and the Executive Vice President for Administrative Services.

# DESIGN & BIDDING

## PROCURING CONSTRUCTION CONTRACTORS (BIDDING)

The construction documents are used to solicit competitive bids from qualified contractors. The means of advertising the project for bidding will vary depending on the delivery method. For construction manager (CM) projects, the CM will obtain bids from trade specific subcontractors. For general contractor (GC) projects, IPF will obtain bids from the general contractor.

### WHAT YOU CAN EXPECT

- We work with you to develop well-defined project requirements in the construction plans and specifications.
- We provide clear and regular communication regarding the budget and schedule throughout the design phase.
- We meet agreed-upon schedule for completing design phase.
- We provide periodic reviews of potential risks that may affect budget and schedule.
- We thoroughly review the design, schedule and budget prior to issuing the project documents for bidding.
- We establish final budget prior to bidding process.

### WHAT IPF EXPECTS

- You provide a clear vision of your goals and expectations for the project.
- You will have a clear decision-making hierarchy.
- You approve project program and requirements prior to the start of schematic design.
- You secure necessary funding for the project.
- You give signed approval of construction documents prior to bidding.

## Final Budget components

- Construction by outside contractors
- Construction and services by MSU
- Movable furnishings and equipment, including information technology
- Project development, including site investigation, state mandated fees and campus art (university policy)
- Design, inspection, records and contract administration services

# CONSTRUCTION

The budget at the start of construction is based on bids received on work to be performed by outside contractors, along with all other services required to deliver a complete project.

The construction phase begins with a pre-construction kick-off meeting, scheduled by the project manager upon receipt of a signed contract.

This meeting includes discussions of project requirements and the roles and responsibilities of all team members.

Throughout the construction phase, project meetings will occur to review progress and potential project impacts and to make decisions. The contractor typically leads and documents these meetings.

## CONTINGENCY DURING CONSTRUCTION

The budget includes a line item for contingencies; potential changes to the work scope that may become evident during construction.

The construction contingency is a percentage of the project budget, typically 10 percent of the total project budget, encumbered to offset the cost associated with change management items. The amount varies, primarily based on the complexity and associated risks of each project. Occasionally a project may carry a more significant amount of risk, which may require more than a 10 percent contingency. This percentage will be carried until the risk is mitigated.

## SAMPLES OF CHANGE MANAGEMENT ITEMS

- Allowance adjustments
- Code compliance
- Constructability
- Environmental issues
- Poor soils
- Hidden conditions



## WHAT YOU CAN EXPECT

- Coordinate scheduled pre-construction kick-off and regularly scheduled progress meetings.
- Regularly communicate project construction status to customer apart from scheduled progress meetings.
- Provide continuous project management.
- Minimize the impact of construction to the occupants.
- Ensure a clean and safe work site.
- Regularly inspect for quality assurance.
- Coordinate university and vendor provided services.
- Coordinate utility and other power-related shut-downs.
- Coordinate owner training of new equipment and systems.
- Transition to the close-out phase.

## WHAT IPF EXPECTS

- You attend construction progress meetings.
- You quickly communicate perceived issues or problems during construction.
- You have a clear decision-making hierarchy.
- You update your department (and dean, as appropriate)
- You participate in owner training.



# CLOSEOUT & TRANSITION

Closeout and transition are the final phases in capital project delivery. They begin once substantial completion is achieved.

Assessments, evaluations and lessons learned are facilitated by MSU's Infrastructure Planning and Facilities (IPF) Project Team during this phase.

This provides the customer with an opportunity to provide feedback and suggest improvements in the Planning and Delivery process.

## CLOSEOUT & TRANSITION STEPS

- Complete any outstanding work
- Project transition to customer and IPF maintenance operations.
- Coordinate training programs for new equipment and systems
- Customer move-in
- Final payments are made
- Project assessments and lessons learned
- Final financial reconciliation

## DELIVERABLES

- Certificate of Occupancy (Temporary Certificate, Final Occupancy, 100 % Final Reports) if required.
- Final drawings that reflect any changes (record drawings) and operating and maintenance manuals to client.
- Building turn over to customer and IPF maintenance operations.

## WHAT YOU CAN EXPECT

- We provide ongoing communication of project status.
- We manage project closeout activities; they are not linear and often overlap moving from construction to closeout/transition.
- Ensure all closeout tasks and contractually procured activities are completed.
- All expenditures are finalized and reconciled with MSU's financial system. Any unspent funds will be returned to the funding source.

## WHAT IPF EXPECTS

- You attend customer training meetings, if new equipment is installed on the project.
- You participate in walk throughs (at 3 months and 6 months) to ensure that the punch list, warranty and operational issues are understood and addressed.
- You participate in a walk-through ten months after substantial completion, to identify any outstanding items that need to be addressed prior to closing of one-year warranty.



## PROJECT PLANNING PARTNERS LIST

The Project Planning Partners List is a resource for communicating with various individuals on and off campus involved in a capital project.

### [Campus Infrastructure Planning Work Group \(CIPWG\)](#)

In compliance with the Campus Master Plan, reviews projects that modify the campus landscape character, affect campus infrastructure or require a zoning variance prior to Board of Trustee actions.

### [Environmental Health and Safety \(EHS\)](#)

Reviews projects involving hazardous-materials compliance, laboratory equipment, ventilation systems, and environmental waste management.

### [Infrastructure Planning and Facilities \(IPF\)](#)

Various departments at IPF may provide input and review, including maintenance services, project services, commissioning, telecommunications, energy and environment, landscape services, custodial, power and water, sustainability and communications.



### [IT Services](#)

This department reviews projects involving teaching and learning facilities (audio/visual) and infrastructure (networking, Wi-Fi).

### [MSU Police](#)

This department reviews projects affecting fire/life safety, parking, roads, traffic design and building security systems.

### [Off-Campus Partners](#)

Various off-campus partners may provide input and review involving roads, or soil erosion and sedimentation, including the City of East Lansing, the City of Lansing, the State of Michigan and Ingham County.

### [Residential and Hospitality Services \(RHS\)](#)

Various departments in RHS may provide input and review, including the planning and projects office, the space coordination and review committee, information services (IT), and culinary services.

### [Resource Center for Persons with Disabilities \(RCPD\)](#)

Reviews projects affecting accessibility to maximize the ability and opportunity for full participation by persons with disabilities.

### [University Physician's Office \(UPO\)](#)

Reviews projects involving food service and swimming pool facilities.

