

Information

for

**Facility Modification
Planning & Project Management**

at

**Physics Research Building
(PRB)**

Prepared by
Facility Engineering

Overview

This document provides information and guidance for department members who are planning projects or activities that may require a facility modification. Additionally, this document identifies certain statutory constraints which exist within the Ohio Revised Code and which may be applicable to the proposed modification. This document also identifies the services that are available within the Physics Department to support such facility modification activities.

General Principles

Groups who are planning any facility modification are advised that the Department recommends an appropriate context for planning of facility modifications is one that considers the following:

- The facility is owned by the State..... Owner
- The facility is controlled by the University Landlord
- The facility is assigned to an occupant Tenant
- The facility modification is a one-time effort with specific objectives..... Project

This view is useful in establishing a proper interface between the specific research need for the facility modification and the general university need to maintain proper controls and standards.

Role of Facility Operations and Development (FOD)

Groups who are planning a facility modification are advised that the University has assigned FOD responsibility for the long-term preservation of the physical assets of the University including the successful integration of existing and new facilities and/or facility-related items. This responsibility covers a broad range of projects from the very large and complex, such as the Thompson Library Renovation; down to the very small, such as adding a new electrical outlet in a lab space.

FOD is divided into the service areas of FOD Administration, Business Management, Environmental Health & Safety (EHS), Planning and Real Estate (PARE), Regional Integrated Operations (RIOps), Utilities/Energy Services & Sustainability (ESS), and Facility Design and Construction (FDC).

Role of Facility Design and Construction (FDC)

Groups who are planning any facility modification are advised that under [Ohio Revised Code Section 123](#), The Department of Administrative Services (DAS) is empowered, among other things, to have general supervision over the construction of any projects, improvements, or public buildings constructed for a state agency. Said supervision is assigned to the [State Architect's Office \(SAO\)](#), or in the case of some higher education institutions, to a DAS Institutional Designee. Ohio State University has such designee status with FDC acting in this capacity. All new facilities and facility renovation/modification projects are managed by FDC.

Role of Architect or Engineer (A/E)

Under [Ohio Revised Code Section 153](#), any project that alters a state building to such an extent that aggregate project cost is fifty-thousand dollars or more requires the services of an Architect or Engineer. Depending on the type and complexity of the alteration, projects below fifty-thousand may also require an Architect or Engineer or the direct involvement in the design by FDC staff. FDC will make such determinations on a case-by-case basis.

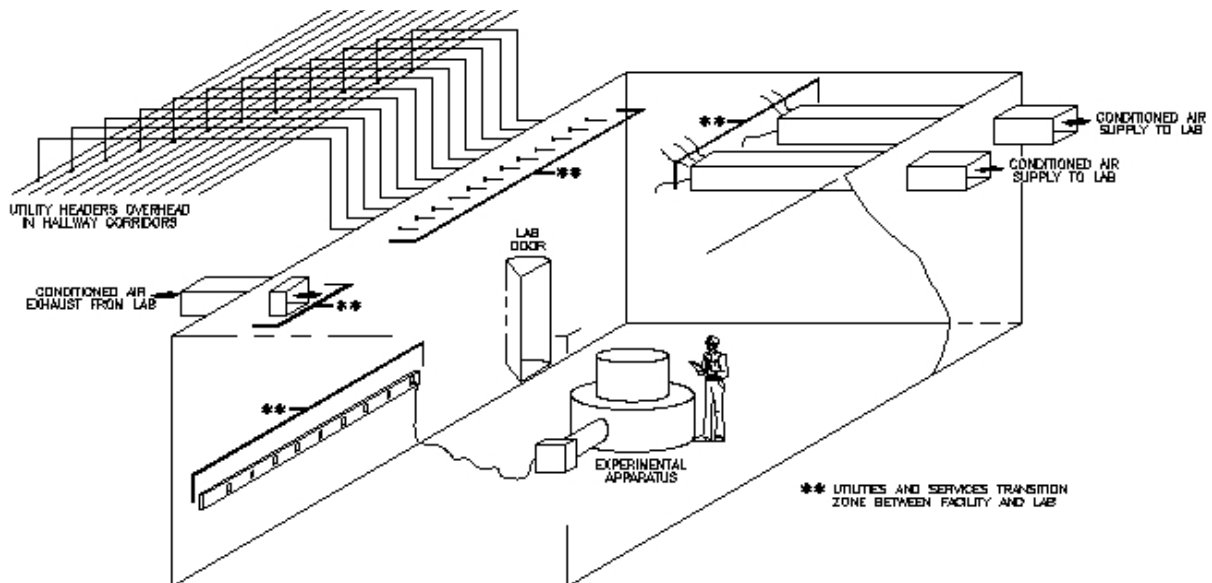
Project Delivery Scope Split

The Department acknowledges the role of FDC in the delivery of facility modifications up to and including the take-over point of utilities within a given lab space. However, due to the unique needs and time constraints of research programs, and/or due to the simplicity or delicacy of the work scope, and/or due to the unique skills and capabilities which exist within the department, some limited facility work can be done with skilled labor available within the departmental shops or with external contractors directly.

Facility modifications and utilities connections after the take-over point within a given lab space are commonly done without FDC involvement. The Department works with FDC to develop consensus regarding the suitability to undertake any such direct projects. It is further understood that no facility modifications will be made without, as a minimum, a consultation with FOD and/or FDC. From this framework three types of facility modification projects can be identified:

- Case 1: FOD/FDC Project Control
- Case 2: Physics Department Project Control
- Case 3: Hybrid Project Control

The sketch below shows where the take-over point / transition zone interface commonly occurs.



Project Management

Whether a facility modification is administered by FDC or internally, the chance for a successful project is increased when a single individual is clearly assigned to the role of Project Manager (PM). Consequently, groups should consider the work as a project and apply [basic project management principles](#) to the effort. A project can be any series of activities and tasks that:

- Have a specific objective to be completed within certain specifications
- Have defined start and end dates
- Have funding limits (if applicable)
- Consume resources (i.e. money, people, equipment, space)¹

The Department offers significant experience, capability, and assistance in developing project management strategies for facility modification efforts. Groups are strongly encouraged to share their plans as early as possible with Facility Engineering to optimize the impact of these resources

Planning Checklist

The following checklist is provided as a simple tool to help focus planning efforts done by groups who are considering a facility modification. Such a list can never be all-inclusive, but can serve as a catalyst for revealing a variety of other necessary details to consider for a given project.

Item	Description	<input checked="" type="checkbox"/>
1.0	Project Definition: Basic 5W/2H Analysis (sub-divided below)	<input checked="" type="checkbox"/>
1.1	Statement of Work: identifies <u>what</u> facility modification is required, <u>why</u> it is required, <u>where</u> and for <u>who</u> it is required.	<input type="checkbox"/>
1.2	Performance Spec: identifies <u>how</u> the facility should perform once the modification is completed (i.e. what is the goal?).	<input type="checkbox"/>
1.3	Schedule: identifies <u>when</u> the facility modification is needed and any other relevant timing issues like equipment del'y.	<input type="checkbox"/>
1.4	Budget/Funding: identifies <u>how much</u> the facility modification will cost and to which account it will be assigned.	<input type="checkbox"/>

In addition to the above basic list, project planners should consider who needs awareness of the project and when. Examples of this might include Adjacent Labs (above-below-beside), FOD/FDC, Facility Engineering/Shops, Front Desk, Contractors, Chair, Space Committee, Safety Committee, OSURF, Business Office, Traffic and Parking, Public Safety, Others? In general for any of these examples, too much information is better than not enough, and too soon receiving information is better than too late. Experience clearly shows that a well-developed project plan will add value throughout the project lifecycle and when properly done will not add any unnecessary burden.

Facility Modification Examples

The following photos and descriptions show examples of the three project types that have been done at the PRB. These examples help illustrate when work must be done with FDC and when work might be done directly and internally.

Case 1 FOD/FDC Project Control

Air Vent Valve (AVV) Replacement

This project was over \$200k in total costs but was determined by FDC to not require the services of an A/E because it was a "replacement in kind" with no fundamental design change to the system. The project was competitively bid with a formal posting by OSU purchasing and a subsequent award to the low bidder. The project replaced 766 individual AVV's building-wide.



View of Typical Installation and of AVV Assembly

Case 2 Physics Department Project Control

Student Shop Renovation

The student shop renovation was administered by the Department with no FDC involvement. The project was under \$50k in total costs and did not require the services of an A/E because it made modifications only to the lab infrastructure and not to the facility.. The project was not competitively bid but was awarded to 2 contractors one for paint/patch work and the other for electrical work.

Contracting directly for the electrical portion was questionable due to the connections that were required for the machine tools.

However, the lab has a bus-bar electrical distribution feature that allows for lab-specific modifications, the total number of circuits was small, the total amperage of each circuit was low, and it was done in Smith Lab where many direct projects had been previously done. Therefore, it was determined acceptable to do this project directly.



View of Student Shop

Case 3

Hybrid Project Control

CAP II Water System

The CAP II water system was administered by FDC, but in this case FDC "hired" the Physics EM Shop to perform a portion of the work. The project was under \$50k in total costs and did not require the services of an A/E because it made only very minor modifications to the facility infrastructure for which FDC determined no record drawings were required.

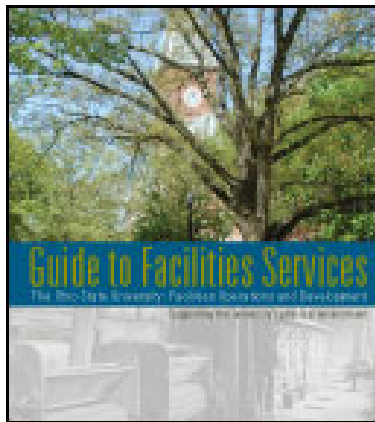
The project was not competitively bid and was awarded to multiple contractors for plumbing, electrical, equipment supply, and fabrication of mounting boards.



View of CAP II Water System

Additional Resources

Groups who seek additional detail regarding project delivery methods are encouraged to visit the FOD website where the following guidance documents are posted.



Guide to Facilities Services



Guidelines for Planning & Project Delivery

Link to these guides at <http://www.fod.osu.edu/services/index.htm>