Pray-Harrold Modernization

Eastern Michigan University
Ypsilanti, Michigan

Authorized by P.A. No. 278 of 2008
DMB file No. 332/09019.JAN

Approved by:
Eastern Michigan Board of Regents
Eastern Michigan University

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SHW Project No. 7109.001.00

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## Phase 200/300
### Program Statement and Schematic Design – Executive Summary

**Table of Contents**

1. Introduction  
2. Net and Gross Areas  
3. Project / Program Cost  
4. Design and Construction Schedule  
5. Annual Operating Budget
1.0 Introduction
**Project Description:**

Pray-Harrold is a seven-story structure, with a mechanical penthouse consisting of 235,791 gross square feet, including the penthouse. It is the largest and most heavily utilized instructional facility on the Eastern Michigan University (EMU) campus. Aside from some construction work done in 2000 (due to fire damage in the penthouse) the major building infrastructure and the overall environment is much the same today as it was the day the building opened in the late 1960’s. The increased level of usage, many years of wear-and-tear, and the rise of computer technology has severely taxed the existing systems of the facility, many of which are at or beyond their expected service life.

Initially proposed as a $57 Million project, the project total has been proportionally reduced to $42 Million. This is due primarily to a reduced State allocation ($31.5M in lieu of requested $42.7M). Considering the current economic climate in Michigan, and the significant investments EMU is placing in self-funding projects, such as $90 Million for the Mark Jefferson Science Complex, the University’s limited resources have been dedicated following the 25% traditional match for $10.5 Million which results in the total project cost of $42 Million. The addition proposed as part of the initial $57 Million Capital Outlay has been deleted from the proposed work scope and represents the approximate difference between the $57 Million initial proposal and the current $42 Million project. This project scale is reflected in the State Fiscal Agency’s published notes for September/October 2008.

There are critical needs in this 40 year old building which the University needs to address. Since this is the largest classroom building at EMU, and nearly every student at the university will have classes in this building at some point in their career, it is imperative that the learning environment be improved. The first priority of this modernization project is to replace and upgrade the mechanical, electrical, plumbing (MEP) systems, and technology infrastructure, to support continued use well into the 21st century. Since the building was constructed, building codes have evolved, and certain aspects of the building will be addressed per contemporary building code standards. Life Safety improvements include a fire suppression system, exit stair handrails and fire doors, along with barrier-free design accessibility (ADA compliance) will also be addressed. Improvements to these systems will maximize the efficiencies of the existing building without adding square footage. Better air quality and temperature controls, improved physical comfort, and augmented amenities will certainly improve the daily experience of all students and faculty. Ultimately, these improvements to critical systems will optimize the facility relative to the academic mission by providing a safer, more comfortable teaching and learning environment.

Beyond the infrastructure and building code requirements, this project will improve the appearance and functionality of the building. The interior finishes, while very durable, are also very institutional, unwelcoming and in need of improvement. With the deletion of the originally proposed addition, the challenge will be to find ways to enhance these aspects of the building within the current envelope without affecting capacity of instructional spaces or offices. Opportunities are proposed to make improvements to existing instructional and social spaces which will result in a far-reaching positive influence to the educational experience of thousands of students. Coupling the critical MEP needs with appearance and function, the project will create both a more physically comfortable learning environment, along with a better functioning, more visibly appealing instructional building.

Finally, the project will strengthen EMU’s agenda for sustainability in its modernization by following the US Green Buildings Council’s standards for LEED Silver rating. Since this is a detailed MEP infrastructure modernization, most of the sustainable design features will be found within the new engineering systems.
Statement of Justification for the Modernization and Instructional Goals

Pray-Harrold is the primary classroom facility at EMU and so heavily utilized that nearly every student at the university will have classes in the building at some point in their career. With such a far-reaching influence on the educational experience of so many students, it is imperative that the learning environment be as beneficial as possible. Improvements to the comfort of the occupants and to the capacity of the infrastructure are fundamental to achieving this goal. Qualitative improvements to the visual environment also will enhance the experience of all building occupants.

Detailed Project Work Scope

The following scope of work is currently planned to modernize, improve and enhance Pray-Harrold:

DoIT Data Center:

The renovation to the DoIT Data Center will accommodate critical MEP infrastructure needs. This work is to include: a new generator and UPS (uninterruptable power source) a new HVAC system (independent and redundant cooling), a new electrical distribution system, and updating the existing Halon fire-suppression system to current building code compliance.

Note: DiClemente Siegel Design Inc., Engineers – Architects – Planners, is the designer of record for the scope of work at the DoIT Data Center upgrade.

Mechanical Systems:

The mechanical systems include the plumbing, heating, ventilating, and air conditioning systems in the building. The intent is to modernize the equipment, increase efficiency, reduce the energy use, and significantly increase the comfort within the building. To do so, we currently plan to:

- Replace old/outdated Air Handling Units
- Replace undersized, outdated, or inefficient ductwork
- Upgrade refrigerant of the existing Chiller
- Replace plumbing fixtures (toilets, lavatories, drinking fountains, etc.) with ADA compliant and low water-use fixtures

Electrical Systems:

The electrical systems have been heavily taxed as technology use has increased during the past 40 years, and they are deficient by today’s standards. In order to meet the needs of current technology and future building use, the following electrical upgrades are planned:

- New primary 13.2 KV power will be brought to the building, replacing the existing 4.8 KV service
- New service entrance, switchgear, and power distribution system
- New floor by floor transformers and power distribution
- Improved lighting and service power, with priority given to locations with the most impact

Life Safety / Security:

- Install a fire-suppression system throughout the building
- New emergency lighting systems will be integrated into the light fixtures to comply with the latest life safety codes
• New Fire Alarm system compliant with strobes and a voice evacuation speaker system for Campus Mass Notification
• A security camera and card-access reader will be installed at the main entry to the facility
• A new lightning protection system will be installed

Architectural Systems:

Architecturally, the building is worn and somewhat inadequate by decades of heavy use. This is reflected not only in the “fit and finish” of the spaces, but also in complying with significant changes to the building code which have occurred over the past 40 years. To address these issues, we currently plan to:

• Replace the roofs at the auditorium levels (both west and east sides)
• Replace the windows, curtain wall systems and exterior entry doors throughout the building, to improve occupant comfort and increase energy efficiency
• Improve the egress stairwells with improved fire rated doors and building code compliant hand-railings and guards
• Improve handicap accessibility by installing new door handle hardware, improving restroom layouts, and removing the raised instructor platforms within the classrooms
• Abate asbestos-containing materials within the building
• Architectural modifications to floors, walls, and ceilings which are affected by the MEP system improvements (i.e. cutting open a wall to access piping or to re-route ductwork)
  o Ceiling removal and replacement
  o Enlarging duct shafts
  o Selective demolition and reconstruction for plumbing modifications
  o New enclosures for transformers
• Finish improvements in classrooms, corridors, and offices including:
  o Selective painting and wall finishes
  o Selective flooring (tile, carpet, etc.)
  o Selective ceiling systems (acoustic tile)
  o Selective furnishings (seating and work surfaces)

The work will be phased so that Pray-Harrold can remain as fully functional as possible during construction. It is a highly utilized facility and is critical to the mission of the University as a whole. The DoIT (Department of Information Technology) Data Center, located on the first floor, will not be shut down at all during construction. Also, construction phasing will take advantage of breaks in the academic year, capitalizing on periods of relatively low occupancy.

Selection of Architect

Eastern Michigan University enacted a very concise and deliberate process for selecting SHW Group as the design professional for the Pray-Harrold Modernization Project. EMU solicited Requests for Qualifications from design professionals, and shortlisted several qualified design teams. Those teams were required to submit written proposals and interview. The teams presented to a selection committee consisting of campus administrators, Physical Plant staff, and the College of Arts & Sciences Advisory Committee.

SHW Group was selected on the merits of the team and value of professional fee. Determining factors in selecting SHW Group included:
  o Individual team members with prior experience in the building and with the College of Arts & Sciences
  o Extensive college and university experience
  o Extensive Department of Management and Budget experience
  o Renovation experience
  o Professional Fee Proposal
2.0 Net & Gross Areas
Net and Gross Area / Volume

Subject: DMB File No.: 332/09019.JAN
Eastern Michigan University
Pray-Harrold Modernization
Ypsilanti, Michigan

Total Project

1. Gross Area  235,791 square feet
2. Net Assignable Area  129,824 square feet
3. Custodial Area  992 square feet
4. Circulation Area  58,781 square feet
5. Mechanical Area  26,548 square feet
6. Construction Area  19,646 square feet

Ratio of net assignable area in 2. above to gross area in 1. is 55 percent.

Volume: 2,843,411 cubic feet

This project is a modernization of an existing building. The net to gross ratios are established by the geometry of the original construction.
3.0 Project / Program Cost
PROJECT DATA SHEET

SUBJECT: DMB File No.: 332/09019.JAN
Eastern Michigan University
Pray-Harrold Modernization
Ypsilanti, Michigan

Schematics Prepared by: SHW Group

Project Total
Estimated Cost of:

1. The structure (general, mechanical, electrical fixed equipment, and contingencies) $33,848,000
   1-a. Telecommunications (incl. above) $412,000

2. Services from five feet outside of the structure (Sewer, water supply, etc.) $97,000

3. Site Improvements (Roads, walks, grading, etc.) $15,000

4. Architectural/Engineering fees, surveys, commissioning, site investigations, state $2,900,000

5. DMB Fee $500,000

Design and Construction cost per gross sq.ft. (1 thru 4/gross sq.ft.) $156

Furnishings (Furniture, moveable equipment, etc., not considered a part of the structure nor requiring fixed mechanical and/or electrical service $1,000,000

6. Other - Technology Equipment (IT-Cabling & Infrastructure) $1,000,000
   Asbestos Abatement $1,140,000
   Moving Cost $750,000
   Other Administrative Costs $750,000

7. Total estimated project cost, November 2009 $42,000,000

Total project cost per gross sq.ft. (8/gross sq.ft.) $178.12

Total net square feet 129824 sq.ft.
Total gross square feet 235791 sq.ft.
Building design efficiency (ratio of net to gross) 55%
Building occupancy design capacity 4071
Parking spaces provided 0*

*The facilities will utilize the existing parking lot
4.0 Design and Construction Schedule
Design and Construction Schedule

Subject: DMB File No.: 332/09019.JAN
Eastern Michigan University
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Programming January 2009

Schematic Design Phase February 2009

Review and Joint Capital Outlay Subcommittee/Department of Management and Budget Approval May 2009

Preliminary Design Phase May 2009 – June 2009

Review and Department of Management and Budget Approval and Legislative Review July 2009

Final Design and Construction Documents July 2009 – October 2009

Review and Department of Management and Budget Approval and Legislative Review October 2009

Bidding and Negotiation November 2009

Award Construction December 2009

Phased Construction January 2010 – December 2012

Final Phase Move-In December 2012
5.0 Annual Operating Cost
Annual Operating Cost

Subject: DMB File No.: 332/09019.JAN
Eastern Michigan University
Pray-Harrold Modernization
Ypsilanti, Michigan

Following is a summary of the projected annual operating budget based on $/year and 235,791 gross square feet for the Pray-Harrold Building

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<thead>
<tr>
<th>Service</th>
<th>$/Year</th>
<th>$/GsF</th>
<th>Total</th>
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<tbody>
<tr>
<td>Custodial, Buildings and Grounds</td>
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<td>Communications</td>
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</tbody>
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**Projected Operating Budget ($/year):** $1,600,492