CONSTRUCTION PLANNING AND PROGRESS MEETING

Brought to you by the Physical Plant Division

Thursday, November 8, 2012

Twitter hash tag #msuconstruction
NEW-AND-IMPROVED SURVEYS!

They are available on the table at the front of the room

• Please fill out your surveys and return them to the front table before you leave.

• We want your thoughts and suggestions about how you feel Construction Junction went, and what we could do to improve.

• Thank you in advance!
Today’s Agenda

• Board of Trustee updates

• New presentations
  • Anthony Hall – Energy Conservation Measures
  • Landon Hall – Dining and Building Renovation
  • Botany Greenhouse Demolition
  • Union Building – North Neighborhood Engagement Center

• Project updates
  • Armstrong/Bryan Renovations
  • Shaw Hall – New Dining Center
  • MSU Union – Renovations to First-Floor Lobby
  • Spartan Stadium Scoreboards – Virtual Tour
  • Eli and Edythe Broad Art Museum Grand Opening This Weekend
Step 1: Authorization to Plan
- Well House No. 32 – Construct Original Building
- Transportation Services – Self-Serve Fuel Station

Step 2: Authorization to Proceed
- Union Building – North Neighborhood Engagement Center
- Landon Hall – Dining and Building Renovation
- Steam Distribution and Road Reconstruction – West Circle Steam Loop 2013 (Phase 2 of 4)
- Parking – Lot 67 (Jenison) Reconstruction
- Anthony Hall – Energy Conservation Measures

Step 3: Bid and Contract Award
- Plant Biology – N Wing Lab Exhaust System
Step 1: Authorization to Plan
- Manly Miles – Replace Fan Coil Units and Upgrade
- Munn Ice Arena – HVAC Upgrades, Ice Making System

Step 2: Authorization to Proceed
- Clinical Center – C Wing HVAC Project

Step 3: Bid and Contract Award
- Butterfield Hall – Major Renovation
- Steam and Road Reconstruction – Bogue and Shaw Intersection
Anthony Hall – Energy Conservation Measures
MSU’s Showcase Project in the Better Buildings Challenge
The plan

• Implement energy conservation measures, improve the facility and address maintenance and repair items.

• These efforts will:
  • enhance safety
  • reduce waste
  • increase occupant comfort
  • reduce greenhouse gas emissions
  • improve operations
  • improve energy-efficiency
About Anthony

• Original construction 1955
• Major renovation 1997
• 317,176 square feet
• Building underwent retro-commissioning between November 2011 – May 2012
• ‘Showcase Building’ in the U.S. Department of Energy’s Better Buildings Challenge
Scope of work

• Install/repair insulation on steam, chilled water and hot water piping systems.
• Install variable frequency drives (VFD) on cooling tower fans and on heating and process condenser pumps.
• Install VFD on each lab exhaust fan for system static pressure control. Reduce exhaust stack discharge velocity if feasible (without modification to stacks).
• Replace existing terminal unit pneumatic controls with new digital controls.
• Provide occupancy sensors in each space to reset temperature control set points and turn off lights when spaces are unoccupied.
Scope of work (cont.)

- Provide airflow tracking for space pressurization control.
- Install demand-ventilation control for auditoriums.
- Install air-quality sensors in laboratories to reset the laboratory airflows based on air quality.
- Install occupancy sensor at each fume hood to reduce fume hood exhaust airflow when fume hoods are not being used.
- Replace existing Siemens MBC driven laboratory controls with latest Siemens laboratory room controllers.
- Replace existing Siemens digital control system field panels with latest version.
- Install energy recovery run-around loops.
- Upgrade Meat Lab.
Construction impacts

• Project will touch nearly every space in the building
• Duration of project: February – November 2013
• All efforts will be coordinated to minimize disruption to occupants:
  o Temporary system shutdowns
    (electrical, heating, cooling, ventilation)
  o Access limitations
  o Noise
  o Dust
  o Construction personnel throughout building
  o Equipment and materials storage (potential parking impacts)
• Meeting with Anthony Hall faculty next week
Long-term impacts

- Improve lab operations
- Enhance end-user training and safety
- Meet University’s energy goals
Schedule

- Board of Trustees Authorization to Proceed: December 2012
- Release for bidding: January 2013
- Start prep work for construction: February 2013
- Start construction in occupied spaces: May 2013
- Substantial completion: November 2013
### What it means for MSU

**MSU’s Energy Transition Plan**

<table>
<thead>
<tr>
<th></th>
<th>% Greenhouse Gas Emission Reduction</th>
<th>% Campus Renewable Energy</th>
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<tr>
<td>FY2030</td>
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**Key Considerations:**
- Reliability
- Capacity
- Environment
- Health
- Cost

Plan was adopted by MSU’s Board of Trustees in April 2012.
What it means for MSU
MSU’s Energy Transition Plan

Goal 1: Improve the Physical Environment
• Aggressive investment in energy conservation measures
• Implement more stringent energy-related building standards
• Connect energy and space costs/incentives to end users
• Promote behavior change for energy conservation
What it means for MSU
MSU’s Energy Transition Plan

Goal 2: Invest in Sustainable Energy Research and Development
• Campus as a laboratory for developing, evaluating and demonstrating new technologies

Goal 3: Become an Educational Leader in Sustainable Energy
• Educate stakeholders about MSU’s commitment to sustainable energy
What it means for MSU

Advancing Energy Efficiency at MSU
Showcase project: Anthony Hall

The goal of the Better Buildings Challenge is to improve the efficiency of American commercial, institutional and industrial buildings by 20% or more by 2020.

Organizations committing to the Better Buildings Challenge agree to:
• **Conduct** an energy efficiency assessment of their building portfolio and pledge an organization-wide energy savings goal.
• **Take action** by showcasing an energy efficiency project and implementing a plan to achieve lasting energy savings.
• **Report** results by sharing cost-effective approaches for saving energy and performance data that demonstrates the success.
Ways you can help

Energy Saving To-Do List for Faculty and Staff:

**Lighting**
- Turn off lights when leaving an empty room

**Computers and office equipment**
- Enable power management features when computers are not in use
- Turn off equipment at the end of each day

**Heating and cooling**
- Thermostats should be set at 70 degrees Fahrenheit in heating season and 76 degrees for cooling
- Wear clothing to customize your “thermal comfort”
- Too hot or too cold? Call Physical Plant at 3-1760

**Everyday actions**
- Think carefully about what you use and what you buy
- Reduce landfill, recycle more
Ways you can help

Energy Efficiency Tips for Labs:

**For all lab equipment**
- Regular maintenance and repair is critical to efficiency
- Think Energy Star! Buy the most efficient models available
- Turn off, unplug or decommission unused equipment

**Fume hoods**
- Shut that sash! - Lower fume hood sashes = lower energy use

**Refrigerators and freezers**
- Defrost and clean coils annually to maintain efficiency

**Washers, dryers and autoclaves**
- Consolidate items and run fuller loads.

**Windows and doors**
- Keep lab doors and windows closed to prevent ventilation problems
Anthony Hall – Energy Conservation Measures

In-Planning/Design
May 2012 - December 2012

Description: Anthony Hall is located on the corner of Farm Lane and South Shaw Lane. It has been chosen to be the showcase building under the Better Buildings Challenge initiative created by the U.S. Department of Energy. The project consists of 75-percent energy conservation measures and 60-percent facility improvement measures, and there will also be maintenance and repair improvements.

The project is to improve the laboratory ventilation control system. This will reduce airflow and improve air quality inside the laboratory.

Questions, comments, concerns?

Design Representative: Phuong Nguyen, pnnnguyen@pplant.msu.edu, 517-353-2291
Landon Hall – Dining and Building Renovation
November 2012
Landon Hall – Dining and Building Renovation
November 2012

Campus Context: Service
Site concept

- Chiller location
- Possible dumpster location
- Bike parking
- Possible grease bin location
- ADA ramp
Student room reconfiguration

GROUND LEVEL

LEVEL 1

EXISTING BEDS: 34
PROPOSED BEDS: 33
NET BED LOSS: 1

EXISTING BEDS: 43
PROPOSED BEDS: 28
NET BED LOSS: 15

ROOM GAINED
ROOM LOST
Landon Hall – Dining and Building Renovation
November 2012

Student room reconfiguration

LEVEL 2

EXISTING BEDS: 12
PROPOSED BEDS: 11
NET BED LOSS: 7

LEVEL 3

EXISTING BEDS: 12
PROPOSED BEDS: 11
NET BED LOSS: 10

TOTAL EXISTING BEDS: 319
TOTAL PROPOSED BEDS: 286
TOTAL BED LOSS: 33
Community bathrooms

New Student Room

Lounge / Study

Unisex Bathroom

New Community Bathroom
Landon Hall – Dining and Building Renovation
November 2012

First floor plan

ASSUMPTIONS
• Reduced footprint to reduce cost
• Provide ADA accessibility from the North
• Refurbish existing windows
• No substation

Total Existing Beds: 319
Total Proposed Beds: 286

Budget: $17.6M Total Project / $13.0M Construction
Inc. Fire Alarm and Fire Suppression
Inc. ADA accessibility
Ground floor plan

Total Existing Beds: 319
Total Proposed Beds: 286
Music practice rooms
Total Current Seats (without the Ivy Room): 336
Ivy Room (seat count is limited by code): 49
(Based on Initial Seating Layout)
Dining aerial perspective
Dining: Rendering of main dining area
Dining: Rendering of bay window/seating nook
Dining: Rendering of the servery
Dining: Rendering of the servery
Dining: Rendering of main dining looking west
Dining: Rendering of middle dining area
Landon Hall – Dining and Building Renovation
November 2012

Rendering of new dining area
Barrier-free upgrades:

• Ramp added to main entry lobby (northeast exit)

• Multiple ramps connect the multiple levels of the dining areas.

• Add elevators to building to provide barrier-free access to all floors.

• Add ADA compliant unisex bathrooms to the second and third floors.

• Restrooms are remodeled for ADA compliance.
Schedule

Michigan State University
Landon Hall Renovation

<table>
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<tr>
<th>Task Name</th>
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<tr>
<td>Schematic Design Complete</td>
<td>October 1, 2012</td>
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<td>Step 2 BOT Approval</td>
<td>December, 2012</td>
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<tr>
<td>Construction Documents Complete</td>
<td>March 1, 2013</td>
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<tr>
<td>Contracts Awarded</td>
<td>April 1, 2013</td>
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<tr>
<td>Construction Begins</td>
<td>May 6, 2013</td>
</tr>
<tr>
<td>Substantial Completion</td>
<td>July 1, 2014</td>
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Landon and Yakeley Halls - Dining and Building Renovation

In-Planning/Design
April 2012 - January 2013

Description: Landon and Yakeley Halls are located in the North Neighborhood on the northwestern side of Michigan State University’s campus. The goal is to consolidate dining for the residence halls in the North Neighborhood. This is project coordinated with Residential and Hospitality Services Dining Master Plan, which aims to align dining capacities with projected changes in housing capacity.

The project would include separate food service areas into one. The changes planned for the dining facilities may also impact the loading dock in the area.

Questions, comments, concerns?

Design Representative: Amr Abdel-Azim, amabelazim@pplanl.msu.edu, 517-432-0323
Botany Greenhouse Demolition

Map showing the location of the Botany Greenhouse.
Demo site includes greenhouses and head house
Botany Greenhouse Demolition
November 2012

Site plan
View of the Botany Greenhouse facing west
View of the Botany Greenhouse facing north
View of the Botany Greenhouse facing north
Botany Greenhouse Demolition
November 2012

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Botany Greenhouses - Demolition
In-Planning/Design
October 2012 - January 2013

Description: The Botany Greenhouses and Headhouse contained the plant science teaching collection. The collection is utilized primarily for undergraduate courses, providing a hands-on experience for students. The Greenhouses and Headhouse range in age from 81 to more than 100 years old. Through review and analysis of the structures it was determined that they are well beyond their useful life, present significant safety hazards, and are prohibitively costly to repair. Given the condition of the Greenhouses and Headhouse, it was necessary to relocate the teaching collection to existing greenhouse space in the central academic campus, and the Greenhouses and Headhouse are no longer in use.

The Botany Greenhouses and Headhouse are located East of Old Botany and next to Lot 7 in the north academic district. This project involves the demolition of existing structures with restoration of the site to include turf, storm drainage, and limited modifications to the parking. The primary user groups of these facilities, including faculty and staff from the (College of Natural Science), were closely involved in the condition assessment of the buildings and planning for relocation of the plant collections.

Timeline: Construction is planned to begin in October 2012, with substantial completion in July 2013, and final completion in December 2013.

Questions, comments, concerns? Design representative: Dennis Hansen, hansen@ppplant.msu.edu
Armstrong and Bryan Halls Renovations
November 2012

Armstrong Hall – New wall of windows
Bryan Hall – Work on wall of windows
Bryan Hall – Excavation in preparation for a barrier-free ramp at the main entrance
Armstrong and Bryan Halls Renovations
November 2012

Armstrong Hall – New architectural metal siding at the penthouse
Armstrong and Bryan Halls Renovations
November 2012

Armstrong Hall – Air-handling units in the penthouse
Armstrong Hall – New light fixtures and ceiling grid on fourth floor
Armstrong and Bryan Halls Renovations
November 2012

Armstrong Hall – Painting has begun on fourth floor
Armstrong Hall – Tile is being installed in fourth-floor bathrooms
Armstrong Hall – Typical resident room (under construction)
Armstrong Hall – Feature wall
Armstrong Hall – Second-floor gaming
• **Project status**: On schedule for completion May 2013
• **LEED current status**: 800 tons of debris removed (76% was recycled)

• **Project facts**:
  – Interior demolition is complete
  – Roof installation nearing completion
  – Basketball hoops will be installed next week
  – Found *Lansing State Journal* from 1954 buried in the wall
  – Old milk bottles and cartons discovered during demolition
  – Over 450 windows were removed and replaced in seven weeks
  – Total workers currently is 65/each building
Armstrong and Bryan Halls Renovations
November 2012

Detour Legend
- **CLOSED**
- **DETOUR**
- **BARRIER-FREE PARKING**

Closed to all traffic May 2012 to May 2013. Access will be maintained during student move-in and move-out.
Armstrong and Bryan Halls Renovations

In-Construction
May 2012 - May 2013

Description: Armstrong and Bryan halls, located on the west side of Brody Neighborhood, are the fourth and fifth residence halls to be renovated in the complex. Improvements to both buildings will include the addition of common spaces to both A and B wings, curtain wall features and artwork, interior project, meditation and fitness rooms, third-floor kitchen/dining areas and accessible entrances.

Additional features will include:
- Major mechanical, electrical and ventilation upgrades and replacements
- Addition of life-safety systems
- ADA code-required modifications
- Asbestos abatement
- Lighting upgrades
- Flooring and ceiling replacement
- Roofing and exterior repair
- Window replacement
- Reception desk modifications
- Improvements to student rooms and common areas
- Reconfiguration of community bathrooms
- Replacement of existing plumbing
- Heated walkways
Shaw Hall – New Dining Center
Shaw Hall Dining room
Bread Box
Main Street dining area
Garden Wok dining area
Shaw Hall Dining room

Platform
Shaw Hall dining room platform
West lobby elevator
Shaw Hall Dining room
West Lounge
Flex dining
Outside view of dining hall facing north east
Flex dining
New wall of windows
New wall of windows
Renovations to loading dock
Tray-veyor
Tray-veyor in kitchen
Dishwashers
Shaw Hall - New Dining Hall and Food Emporium

In Construction
May 2012 - December 2012

Description: Shaw Hall, located on Shaw Lane, is a residence hall in the Central Academic District. Due to Shaw’s central location on campus and the age of its facilities, it is a high-priority project for dining renovations. This project coordinates with the Residential and Hospitality Services Dining Master Plan, which aims to create an integrated approach to campus dining and align dining facilities with growing housing capacities.

The project will include:
- New state-of-the-art dining hall for Shaw Hall
- New elevator to connect to the terrace level
- New loading dock
- Improvements to the lobby and lounges on the first floor
- Removing the parking lot west of Shaw Lane and replacing it with grass
- Replacing the deteriorated water main piping south of the building

This project is using the Integrated Project Delivery (IPD) system which allows for more efficient collaboration between the architecture, engineering and construction teams.

Timeline: The project began construction in March 2012, and will be substantially complete in December 2012.

Impacts to building users, pedestrians, bikers, motorists: On Thursday, May 10, 2012, lane closures will begin on west bound Shaw Lane immediately south Shaw Hall, with completion on or before June 15, 2012. This is necessary to allow for the replacement of the water main that serves Shaw Hall and the Planetarium.

Questions, comments, concerns?
Design Representative: Amr Abdel-Azim, amabelazim@mplnt.msu.edu, 517-432-0323
Construction Representative: Chris Barnes, cbarnes@mplnt.msu.edu, 517-355-1628
MSU Union – Renovations to First Floor Lobby
Lower lounge looking south
Stage
Inside Sparty’s express
Enhancements to food venues
Enhancements to food venues
Enhancements to food venues
New welcome center
MSU Union – Renovations to First Floor Lobby

Description: The MSU Union, a campus landmark, is prominently located along Grand River Avenue, adjacent to a main entrance of Michigan State University. Additions to the building were completed in 1936, 1949, 1980 and 1997, resulting in a total current area of 186,000 square feet. While there have been numerous programmatic changes over the years, the core "college union" philosophy of providing a hub for student activity has been maintained. Residential and Hospitality Services' Strategic Plan envisions continued vitality for the Union, but the building does not currently meet the needs of the primary audience of students and visitors.

It will include renovation of the first floor concourse, main lounge, and reconfiguration and renovation of retail outlets including the coffee shop and Sparty's Convenience Store. An information desk will be created at the intersection of the pedestrian flow and a new connection to the lower lounge from the upper lobby will be built to increase accessibility. The lounge and lobby will receive new finishes including flooring, carpet, paint, and furnishings. The One Union Square Food Court will be updated and modified to increase food preparation and patron efficiency.

Construction will take place during the summer of 2012.

Question, comments, concerns?

Design representative: Jeff Kasdorf, kasdorf@ppplant.msu.edu, 517-353-5141
Construction Representative: Tony Rhodes, rhodes@ppplant.msu.edu, 517-432-7104
Spartan Stadium – Replace Existing Scoreboards and Install Sound System
August 2012
Spartan Stadium – Replace Existing Scoreboards and Install Sound System

Virtual Tour
Broad Art Museum at Michigan State University time-lapse video
Grand Opening: Saturday, Nov. 10
Stay connected via social media

For updates on all things Physical Plant follow @MSUPhysPlant on twitter and become a fan of our facebook page – MSU Physical Plant Division. Also, check out our YouTube page at youtube.com/physicalplantmsu for virtual tours of major projects on campus.
BEFORE YOU GO, VISIT THE CONSTRUCTION ‘SITE’:

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Key features:
• Construction Projects
  – Project info
  – Contact information
• Construction Detours
• Construction Junctions
• Construction Listserv
SECOND SURVEY ALERT!

Please fill one out before you leave if you did not do so already.

- We have recently revamped our surveys in an effort to better understand your experience at Construction Junction.
- Please fill out your surveys and return them to the front table before you leave.
- We want your thoughts and suggestions about how you feel Construction Junction went, and what we could do to improve.
- Thank you in advance!
Construction Junctions continue monthly

Meetings are at 8:30 a.m. the second Thursday of the month

- December 13 (TBD)
- January 10 (112 Brody Hall)
- February 14 (112 Brody Hall)

Please sign in and take a survey before you go!