Michigan Union Renovation

"RESTORING THE BUILDING’S HISTORIC CHARACTER"

DESCRIPTION: The Michigan Union Renovation project updates infrastructure and addresses contemporary programmatic needs for student spaces that enable collaboration and encourages involvement. The project maximizes social space, creates a setting for wellness and counseling, and enhances meeting and event spaces, while restoring the building’s historic character. Infrastructure upgrades include improvements in building accessibility, plumbing, wired and wireless networks, lighting, and increased fire protection throughout the building. The project restoration efforts include expanding the Willis Ward Lounge to its original size; restoring the third level east/west corridor and ballroom overlooks; the placement of the Campus Information Desk will be restored to its original location; and the masonry and windows on the iconic historical facade will be restored, repaired, or replaced.

Sustainability Facts

Michigan Union Renovation

Building Type: Student Life
Location: Ann Arbor, Michigan
Building Size: 426,939 square feet
Number of Occupants: 3,250

Energy Use:
- Total energy savings: $15,465/year
- Total electrical savings: $37,849/kW/year
- Total gas savings: $5,268/kW/year
- CO2 emissions avoided: 201.84 metric tons
- Total water savings: 29.7%

Insulation (R Value):
- Roof assembly: 19.2 R
- Roof assembly: Flat 19 R

Glaçage – Courtyard Skylight
- U-value**: 0.89 0.22
- Solar Heat Gain Coefficient (SHGC)**: 0.39 0.15
- Visible Light Transmission (VLT)**: 10%

Glaçage – Replacement Windows
- U-value**: 0.45 0.35
- Solar Heat Gain Coefficient (SHGC)**: 0.5 0.41

Project Team
- Owner: University of Michigan
- Architect: Integrated Design Solutions with Workshop and Hahman Cox
- Engineer: Integrated Design Solutions
- Contractor: Weidman
- Commissioning Authority: G&M

Window Replacement/Restoration
- Historic wood windows are refurbished, wood frames and glass are repaired, sealed and weather-stripping is replaced.
- Interior storm windows are added to all restored wood windows to improve the thermal performance while respecting the historic fabric.
- New replacement windows are installed in non-public spaces to provide superior thermal performance. The new windows are designed to match the historic wood windows in appearance, compete with colored glass and simulated lead camees.

Water Use Reduction
- Low-flow plumbing fixtures and automatic sensor faucets provide a 22% water use reduction when compared to the Michigan Plumbing Code.

Energy Savings
- The building’s design and systems include energy efficient features that provide an estimated 31% energy savings compared with a code compliant building per ASHRAE 90.1-2007 Appendix G.

Lighting Replacement
- LED lighting with occupancy sensors throughout the building, and daylight controls in the Courtyard, help reduce the building’s electrical energy usage.
- Main and second level’s lighting, along with the tower stair lighting, will feature historically recreated fixtures with LED globe lamps.
- 75% of existing fluorescent and incandescent fixtures will be replaced with new LED type fixtures and/or LED lamps.

COURTYARD DAYLIGHTING
- The skylight is made of low-E coated, insulated glass which allows the courtyard to stay cooler in the summer and warmer in the winter.
- Ceramic frit on skylights reduces summer solar heat gain while minimizing glare.
- Daylight sensors adjust lighting based on the amount of daylight in the space.
- Natural daylight improves occupant comfort by providing a connection to the outdoors.

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REGIONAL CHILLER PLANT
- Chilled water is provided from the South Quad Chilled Water Plant creating opportunities for:
  - Economies of scale, allowing for lower operating costs
  - Less equipment to service and maintain
- Chilled water is used at the Union for air handlers, fan coils and chilled beams.

31%