

LEED™ Case Study

Jeff T. Blau Hall and Kresge Hall

PROJECT HIGHLIGHTS

Location: Ann Arbor, MI

Owner: University of Michigan, Stephen M. Ross School of Business

Project Team

Architect: Kohn Pedersen Fox Associates PC

Engineer: Affiliated Engineers Inc.

Contractor: Walbridge

Commissioning Authority: Fishbeck Thompson Carr & Huber Inc.

Project Management: U-M Architecture, Engineering and Construction (AEC)

LEED rating system: LEED-NC 2009



75%

Demolition/construction waste diverted from landfills*

30%

Estimated energy savings over an ASHRAE 90.1-2007 compliant building

41%

Less water than required under Energy Policy Act of 1992



LIGHTING

- Effective use of task lighting and high-efficiency light fixtures reduce electrical use.
- Occupancy sensors turn off lights and limit heating/cooling in unoccupied spaces.



DAYLIGHT

- “Frit” (ceramic particle) glass walls and interior shades make full use of daylight while controlling glare and limiting summer heat.



BUILDING MATERIALS

- Low-VOC flooring, adhesives, and sealants.
- Use of recycled, renewable, and/or regional building materials when possible.



HEATING & COOLING

- Innovative heating/cooling strategies such as chilled beams in Kresge Hall.
- Heat recovery wheel system reduces heating and cooling energy for ventilation.



STORMWATER RETENTION*

- New stormwater retention basins underneath Monroe Mall (the walkway on the north side of the Ross complex) and the interior courtyard.



GREEN ROOF*

- Renewal of the Kresge Building’s green roof—a flat roof planted with vegetation that absorbs rainwater, creates natural insulation, and provides wildlife habitat.

* anticipated

The project to build Jeff T. Blau Hall and completely renovate the adjoining Kresge Hall was conceived as a way to maximize the efficiency of an underused site. A dated, undersized building was demolished to make way for the project, which includes 105,800 square feet of new construction and 76,800 square feet of renovations. The completed project—which opened in August 2016—includes classrooms, collaboration and group study space, and administrative offices.

The Blau/Kresge project is seeking LEED certification and incorporates many features:



SUSTAINABLE SITES

- City setting: Project is located in a densely populated urban setting within walking distance of basic amenities such as retail stores, restaurants, and banks.
- Transit access: Project is within walking distance to multiple U-M Commuter and Ann Arbor Area Transportation Authority (AAATA) bus stops with services that provide hundreds of daily transit rides.
- Stormwater quantity and quality control measures:
 - 86 percent reduction in site runoff - New stormwater retention basins installed underneath Monroe Mall and the interior courtyard reduce site runoff.
 - 90 percent of total suspended solids (TSS) removed from stormwater runoff - Below ground, Continuous Deflective Separation (CDS) system uses swirl concentration and indirect screening to separate and trap debris, sediment, and hydrocarbons from stormwater runoff.



WATER EFFICIENCY

- 56 percent reduction in potable water used for irrigation:
 - Centrally controlled irrigation management system monitors weather and flow rates.
 - Temperature, humidity, wind direction and speed, and rainfall are monitored to ensure that the landscape is watered only when needed.
- Real-time monitoring of flow rates detects breaks in system piping or valve malfunctions.
- Water use reduction: Project is designed to reduce water consumption by 41 percent when compared to Energy Policy Act of 1992 baseline fixture and flow rates. Accomplished through use of low-flow toilets, urinals, and sinks.



ENERGY & ATMOSPHERE

- Decreased energy use: In support of the University of Michigan climate action goal to reduce greenhouse gas emissions by 25 percent below 2006 levels, this project has been designed to reduce energy consumption by 30 percent when compared to an ASHRAE 90.1-2007 baseline building.
- Lighting power use is reduced through the use of task lighting, efficient light fixtures, occupancy sensors, and the integration of natural daylighting.
- Chilled beam system provides improved temperature uniformity and low energy consumption.
- Energy recovery system reduces energy use for heating and cooling ventilation air.