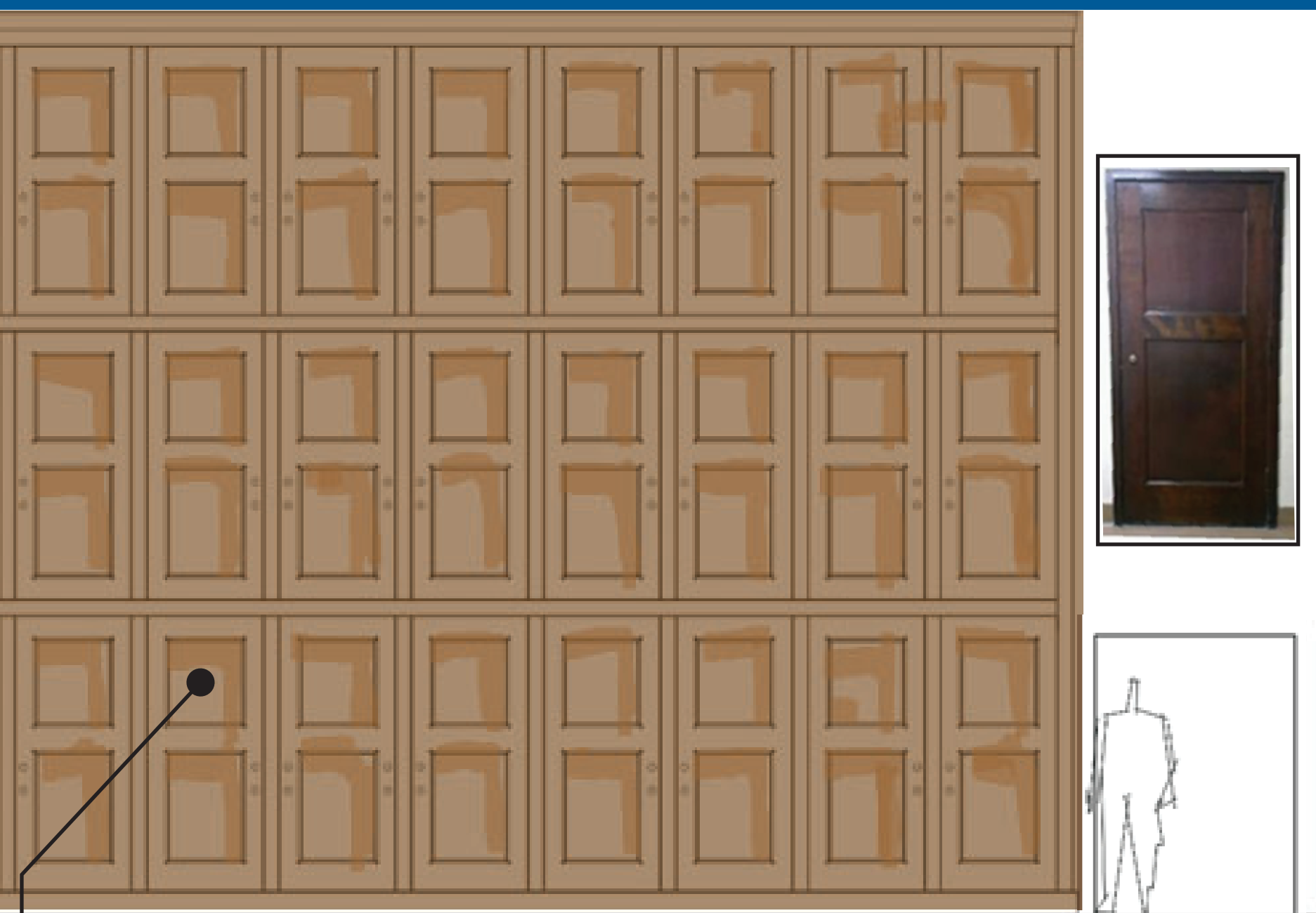




Project Description

The new Central Campus Classroom Building is approximately 100,000 gross square feet with floor-to-floor heights to accommodate new classrooms. The building features a 550-seat auditorium, a 200-seat classroom “in the round” and other active learning classrooms. Adjacent to this new building the Ruthven Building has been renovated and

repurposed to house administration and computational research space. The renovated building will also include a testing accommodation center in the lower level. The new classroom building and the Ruthven building are connected on the lower level.



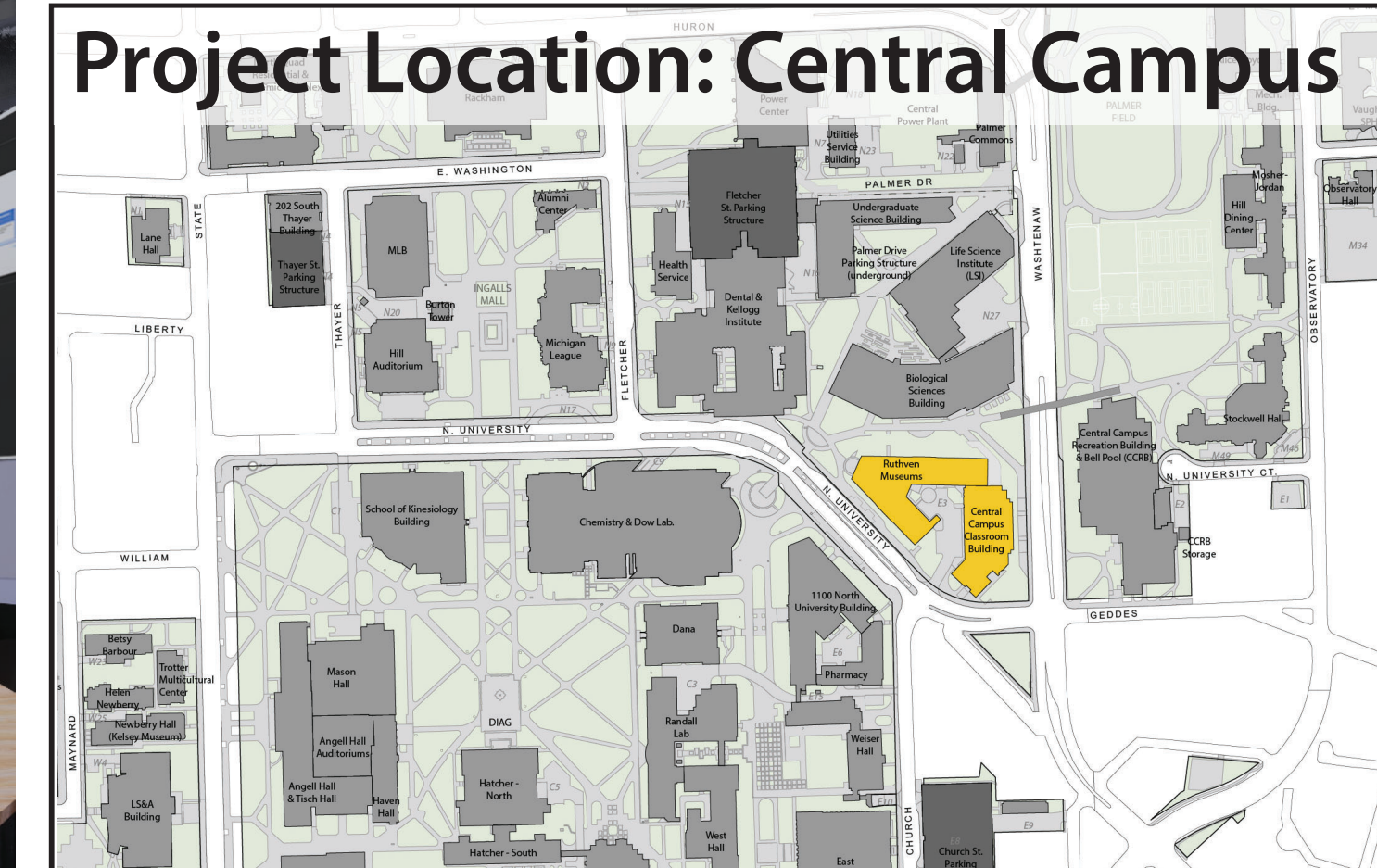
Rotunda

Lighting
LED lighting with occupancy sensors reduces electrical energy usage, while historical light fixtures were retrofitted to work with LED lamps



Social Equity & Inclusion

The classroom “in the round” provides more equal access to the presenter, while assisted listening accommodations and barrier-free seating promote equity and inclusion



Sustainability Facts

Central Campus Classroom Building and Ruthven Renovation
 Building Use Classroom/ Office
 Location Ann Arbor, Michigan
 Size 100,000 GSF (Classroom)/ 135,000 GSF (Addition)

LEED version	v4	
LEED certification level	Gold	
ASHRAE 90.1 version	2010	
Energy cost savings compared to ASHRAE baseline	26%	
Total energy savings	\$73,708 / year	
Total electrical savings	461,294 KWh / year	
Total gas savings	12,160 Therms / year	
CO2 emissions avoided	391 metric tons / year	
Water fixture baseline	2012 Michigan Plumbing Code	
Total water savings	38%	
Construction/Demolition waste diverted from landfill	86%	
Insulation (R-Value)*	Code	Project
Classroom Bldg metal panel assembly - above grade	15.6	25
Classroom Bldg limestone assembly - above grade	15.6	22.7
Classroom Bldg Wall assembly - below grade	3.9	3.9
Classroom Building Roof assembly	20.8	34.5
Ruthven masonry assembly - above grade	8	14.5
Ruthven Wall assembly - below grade	3.9	3.9
Ruthven Roof assembly	29.4	35.7
Glazing - Curtain wall system		
Classroom U-value**	0.45	0.33
Classroom Solar Heat Gain Coefficient (SHGC)**	0.4	0.34
Glazing - Fixed assembly		
Ruthven U-value**	0.6	0.33
Ruthven Solar Heat Gain Coefficient (SHGC)**	0.76	0.34
Glazing - ALL Visible Light Transmittance (VT)***	0.63	0.63

Project Team	
Owner	University of Michigan
Architect	SLAM/Harley Ellis Devereaux
Engineer	Harley Ellis Devereaux
Contractor	Barton Malow
Commissioning Authority	U-M AEC
Project Management	U-M AEC

Design Period: 10/2017 - 07/2019
 Construction Period: 12/2018 - 10/2021
 *The higher the R-value the better the insulating quality
 **The lower the U-value and SHGC the more energy efficient the window
 ***The higher the VT value the more daylight in the space. VT is measured between 0 and 1

Building Re-Use

- Reuse of the existing building envelope and structure greatly reduces adverse environmental factors associated with new construction
- Original **wood doors** have been repurposed as wall paneling in both the University Hall and Reception Area
- The existing **roof system** was removed down to the concrete deck to provide roof insulation
- Insulation added to the existing **exterior walls** increase the thermal performance of the building envelope
- Windows** were replaced with modern thermally broken frames and low-E insulated glazing, while maintaining the historic building’s character

Daylight and Views

- Curtain windows** provide occupants with views to the outside and a connection to the campus community, while natural daylight reduces lighting loads and electrical consumption
- Solar operated shades** in public spaces reduce glare and reflect or absorb heat from the sun

Open Stairwell

Stair use is encouraged promoting occupant health and well-being while reducing the electrical demands associated with elevator use



Ruthven Building - View from West



Central Campus Classroom Building - View from East

Reuse Restore Repurpose

The Alexander G. Ruthven Building renovation focused on preserving the historical character of the exterior while transforming the interior into a modern, energy efficient, high performing facility. Maintaining the building organization, which utilizes the rotunda as the hub of activity and circulation as the primary organizational element of the structure was one of the goals of this project. Improving the energy performance while providing modern upgrades related to comfort and convenience was another goal of this project.



Rotunda Restoration

The main entrance opens into the building's historic rotunda. The domed ceiling and ornate railings have been meticulously restored to their original beauty. Hanging from the rotunda ceiling is an original, refurbished light fixture refitted with energy efficient LED lamps.



Fireplace Repurpose

The original fireplace first installed in Alexander G. Ruthven's office in 1928 has been relocated to the Fourth Floor Commons to provide a connection to the building's storied past.



Repurposed Wood Doors

Regents now gather in the new, two story University Hall in which features a wall clad with refurbished, wood doors from throughout the original building.



Mail Box Repurpose

The original mailbox and mail chute were preserved, cleaned and relocated. Although no longer functional these antiques preserve the building's history.



Bronze Door Restoration

The historic bronze clad main entrance doors were restored. The new automatic door operator improves the function of each door 550 lbs door leaf.



Window Replication

Beyond repair, the historic exterior windows were replicated. The new windows maintain the classic aesthetic of the building but are outfitted with insulated glass units to improve the building's energy performance.

