Transforming Dana

Historic Renovation – The Ultimate Recycling

The Dana Building was constructed in 1903 for the School of Medicine, anchoring a corner of Michigan's historic central campus "Diag". Recycling Dana preserves both the material fabric of the building, a "contributing structure", and the cultural landscape of Michigan's Central Campus, a designated historic district.

Staying in Place/Expanding In Place

SNRE kept its prime location at the heart of the campus by expanding Dana by more than 25% - an "umbrella" of steel framing was erected in the central courtyard, providing additional space on four existing floors and adding a partial fifth floor suspended over the existing building.

Transforming Daylight: Courtyard into Atrium

The open courtyard was converted into an enclosed Atrium with skylight - lab and computer spaces needing reduced glare are clustered around the Atrium where appropriate indirect-daylight filters in.

"The Greenest Building is One That is Already Built"

Conserving Material & Cultural Resources

Harvesting Material Resources

The deconstruction of portions of the original building yielded valuable material for re-use: harvested roof framing yielded 11,000 board-feet of old-growth pine used for furniture and architectural features like the Atrium balcony railing.

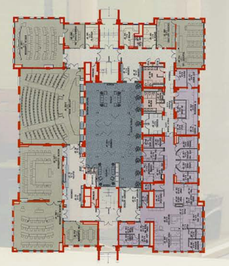
Capturing Embodied Energy

Conserving 100% of existing masonry walls captured the equivalent of 135 tanker trucks of embodied energy - more than 60 times the annual energy savings calculated in the whole building energy simulation which modeled the performance of high-efficiency energy-consuming systems engineered into the Dana Building renovation.

Sustainability Facts

Dana Building	
Building Use	Educational
Location	Ann Arbor, MI
Size	107,603 SF
Cost	Confidential
LEED-NC Rating out of	**69**
Total Score	**40**
Sustainable Sites	7
Water Efficiency	5
Energy & Atmosphere	8
Materials & Resources	8
Indoor Environmental Quality	8
Innovation & Design Process	4
Certification Level	**Gold**
Energy Savings (kWh/yr, $/yr)	NA, $59,600/yr*
Carbon Emissions Avoided (tons)	NA
Water Savings (gallons/yr, $/yr)	201,100 gallons/yr, NA*
Operations & Maintenance Savings ($/yr)	NA
Productivity Enhancements ($/yr)	NA
Natural Habitat Restored (acres)	0.3 acres
Project Team Profile	
Owner	University of Michigan
Architect	Quinn Evans Architects w/ William McDonough + Partners
Engineers	Ove Arup & Partners
Contractor	J.M. Olson Corporation
Landscape Architect	University of Michigan
Commissioning Agent	Aramark Facilities Services

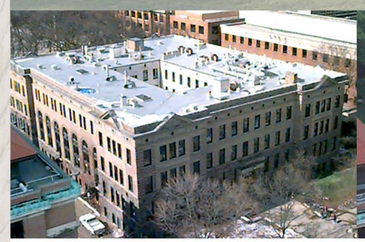
*est., estimated by energy model or EB, verified by first year operation data; includes natural gas use in kWh/yr.
NA= "Not Applicable" or "Not Available"



Existing Walls Conserved (in red)

Embodied Energy Conserved by Renovation

Annual Energy Conserved by high-efficiency HVAC system

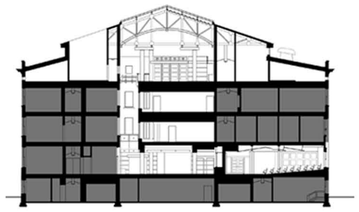


University of Michigan

Greening of Dana

School of Natural Resources & Environment

QUINN EVANS | ARCHITECTS
in association with
William McDonough + Partners
University of Michigan



LEED-NC GOLD 2005 U.S. GREEN BUILDING COUNCIL LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

Green Technologies as Preservation Strategies

Radiant Panel Cooling
Designed to leverage the physical properties of water, Dana is cooled using ceiling panels that "radiate" cooling - most spaces do not require suspended ceilings, restoring Dana's high ceilings and tall windows.

Green Materials
Industrial ecology is a focus of study at SNRE. Dana is a laboratory for green materials - incorporating materials that are salvaged, recycled, contain recycled content, natural, rapidly renewable, certified sustainable wood, from local sources or that contain low or no VOCs.

Photovoltaic Panels
On roof areas that are not visible from the protected views of the historic campus setting, two arrays of photovoltaic panels demonstrate renewable energy technologies.
The PVs generate a maximum output of 33 kilowatts.

Water Efficiency
Dana is a laboratory for water-conserving technologies: water efficient landscaping requires no irrigation, low-flow fixtures, proximity sensors on faucets, waterless urinals and composting toilets.