

# DANA BUILDING

School of Natural Resources and Environment (SNRE)

University of Michigan, Ann Arbor



**Building type:** Higher education, urban campus setting

**Project scope:** 5-story building built in 1903  
108,000 sq. feet (10,000 sq. meters)  
Classroom (36%), Office (31%),  
Laboratory (18%),  
Public assembly (11%), Restrooms (4%)

**Renovations:** 1961 & 2003  
25% new construction;  
75% historic renovation

**Cost:** \$25 million

**Occupancy:** 105 people, 40 hours per person per week  
550 visitors, 20 hours per visitor per week

Pictures/drawings courtesy of:

**Quinn Evans  
Architects**

**Bethany Johnson**  
Eco-Preservation [Falsetto]  
Spring 2009  
University of Oregon

**LEED Rating:**  
NC, v.2/v.2.1 Gold (40 points)



## Project Goals:

- Create a comfortable place to learn and work
- Demonstrate state-of-the-art green design

## ecological design



**Materials reuse** - Timbers from the attic were re-milled for trim and furniture; Old doors were refinished; bricks and pavers were cleaned and re-used to fill existing holes; casework and furniture were refinished; chalkboards and whiteboards were salvaged and re-used in classrooms; 3,000 pounds of building materials were salvaged, diverted from landfills and donated, to local non-profit Re-Use Center for resale.

**Recycled 'new' materials** - flooring made from recycled rubber, ceiling panels made from rapidly renewable materials, bathroom tiles made from recycled glass, and toilet partitions and furniture upholstery made from recycled plastic bottles.

**Daylighting** - Skylight covers old courtyard, 4,000 square foot atrium skylight.

**Increased insulation** - exterior masonry walls were built out with steel studs and then insulated on the interior saving energy on heating and cooling.

**Systems Control** - All mechanical and electrical systems can be tailored to meet the needs of individual work spaces through Direct Digital Control.

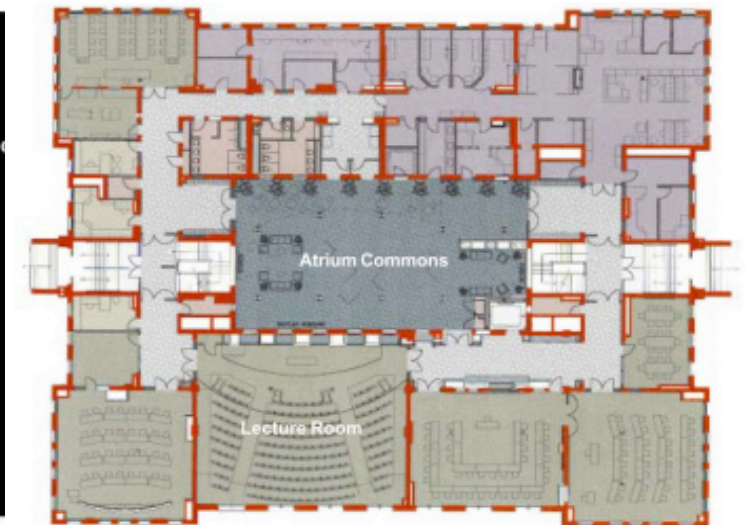
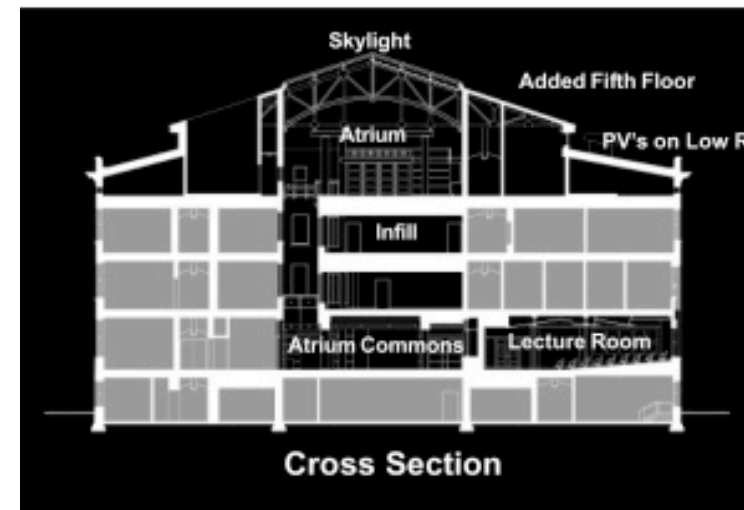
**Ceiling-mounted radiant cooling system** - cold water acts as a heat sink for the warm air in the room

**High-efficiency lighting** - Fluorescent light fixtures, sensor-activated Photovoltaic thin-film and multicrystalline solar panels

**Water use reduction** - sensor and Low-flow plumbing fixtures; composting toilets; waterless urinals; native, drought-resistant plants

Dana is **GREEN** ...  
but is it **eco-preservation**?

## historic preservation



### Character Defining Features:

- rusticated-stone (1st and 2nd floors)
- slightly projecting corner/end pavilions
- classical double-pediments on pavilions
- regularized fenestration
- classical cornice and entablature
- defined central recessed formal entry

- 1:1 double-hung windows
- central light and ventilation courtyard design
- roofline and building height

### Eco-Preservation +

- continued use as classroom/lab/office

### Eco-Preservation -

- removal of double-hung windows
- infill of courtyard design
- fifth story addition
- removal of courtyard windows

### LEED SCORE CARD:

- Sustainable Sites = 7 of 14 points
- Water Efficiency = 5 of 5 points
- Energy & Atmosphere = 7 of 17 points
- Materials & Resources = 9 of 13 points
- Indoor Env. Quality = 10 of 15 points
- Innovation & Design Process = 3 of 5 points

### LEED Points & Building Reuse:

- Site Selection (1 pt)
- Urban Redevelopment (1 pt)
- Alternative Transportation (2 pt)
- Reduce Site-Disturbance (1 pt)
- Building Reuse (3 pts)
- Daylighting and Views (1 pt)
- Preserving Cultural Heritage (1pt ?)