Click on the image above to view the Westwood Hills Nature Center Interpretive Center informational video.
Project Goals
2016 MASTER PLAN CONCEPT
OPERATIONAL GOALS
- Moving the building closer to the parking lot
- Classroom space that opens into a larger conference/rental room
- Separating exhibit space with classroom space
Site and Building Design Concepts: Project as a Teaching Tool
Existing Site and Building

Existing Interpretive Center

Existing Parking Area (35 stalls)

Gateway to WHNC

Minneapolis Golf Club

Westwood Lake

Westwood Hills Neighborhood

I394 W

WHNC boundary (160 acres)
Proposed Project

New Outdoor Classroom
New Building and Parking Area (69 stalls)
1. Main Entry
2. Group Entry
3. Bus Drop-Off
4. Service Entry
5. Paved Parking Lot (71)
6. Picnic & Play
7. Front Yard “Threshold” Landscape
8. Stormwater Basin
9. Back Yard “Threshold” Landscape
10. Primary Trail Connections
SECTION STUDIES: Passive Solar Heating + Occupant Thermal Comfort

thermally massive wall absorbs solar heat and slowly dissipates it through the space

shading blocks radiation from reaching the wall in summer

triple element glazing limits cold drafts next to windows

radiant floor slabs increase occupant comfort
SECTION STUDIES: Daylight Harvesting

angled roof allows for light to wash and reflect into space

highest sun angle (summer: 66 degrees)
average sun angle (equinox: 43 degrees)
lowest sun angle (winter: 19 degrees)

direct light is limited to corridor area

classrooms receive even, indirect north light
SECTION STUDIES: Renewable Energy

- Highest sun angle (summer: 66 degrees)
- Average sun angle (equinox: 43 degrees)
- Lowest sun angle (winter: 19 degrees)

South facing roof area: 15,194 sf
8 degree tilt

457 (350 watt panels)
40” x “79”

Energy Target: 40 EUI
66% roof usability factor
(amount of roof needed to use to achieve the system rating)

System rating: 160 kW
produces 182,876.3 kWh/year
Multipurpose Rooms are Connected to the Landscape
Harvesting solar energy through a thermally massive feature wall in the hallway
Energy Goals and Strategies
ZERO ENERGY IS AN ONGOING BALANCING ACT

1 – Reduce building energy use as much as possible in design
2 – The remaining energy needed is covered by renewable site resources
3 – Continue to fine tune the operation of the building over its life
ESTIMATED BUILDING ENERGY USE: HOW WE GET TO ZERO ENERGY

- Code Level Design
- Highest Performance Design
- Renewable (PV) Generation

Energy Use Intensity (kBtu/sf-yr)

- 65
- 47% reduction in energy use from code
- 31
- 37

Category
- Maximum PV Generation
- Base PV Generation
- Fans
- Cooling
- Heating
- Heat Lamps
- Interior Lighting
- Interior Equipment

- 47% reduction in energy use from code
Bird Safe Glass

What We See

What the Birds See
Interactive Beehive Display
Thank You!

Outdoor Terrace Gathering Space