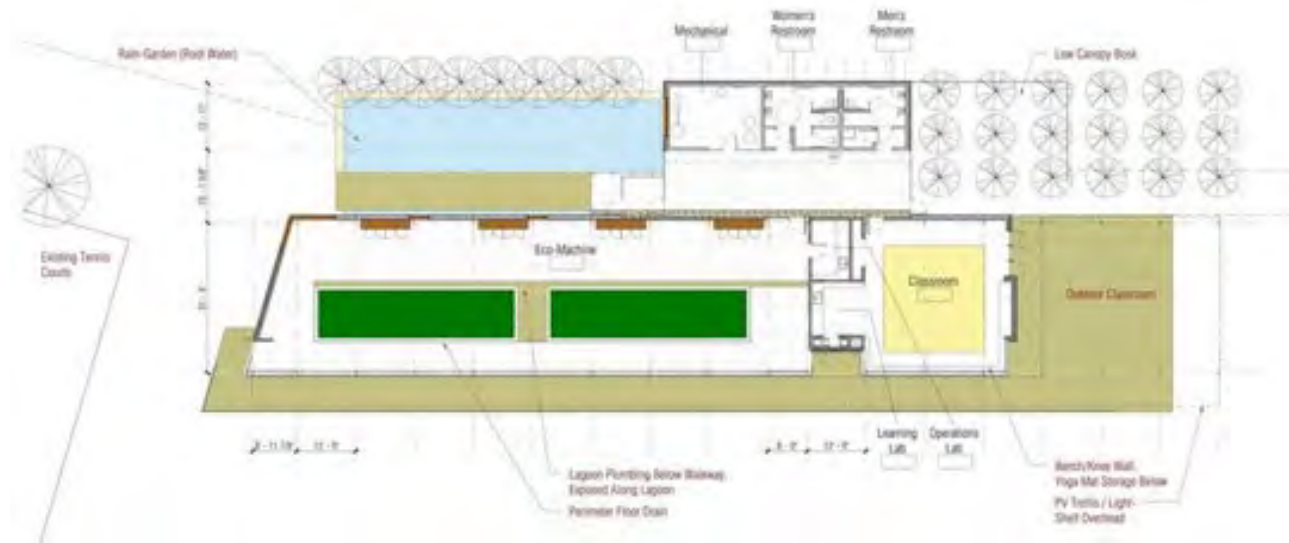




Omega Center for  
Sustainable Living

# Building Info



Type: Wastewater filtration center

Year Built: 2009

## sustainable design aspects:

- 1) Sun Power, Roof Mounted PV
  - 2) Sun Power, Trellis Mounted PV
  - 3) Sun Power, Site Wall Mounted PV
- Total design output: 46,305 kWh

## annual energy use:

Actual: 37,190 kWh/yr  
 Simulated/designed: 48,460 kWh/yr  
 Energy use intensity: 28.3 kWh/sq ft  
 Annual electricity generated: 38,994 kWh

Building Size: 6,246 sf

Location: Rhinebeck, New York, US



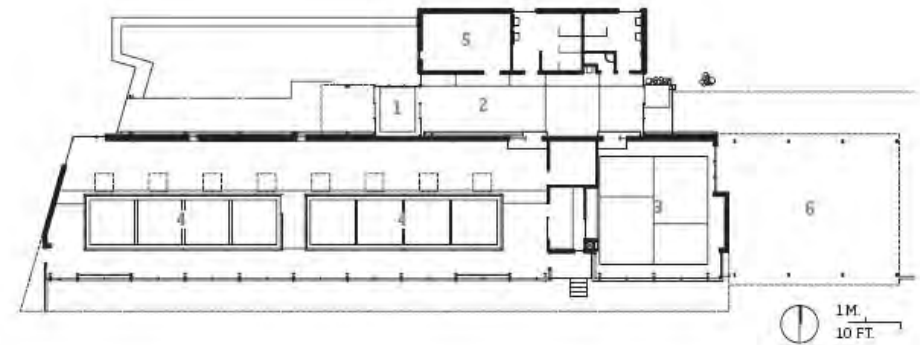
Project costs: \$4,200,000

Location: Rhinebeck, New York, US

## sustainable design aspects:

Annual water use omega water 2: 16,476 gal  
 Harvested onsite: 16,476 gal  
 Rainwater cistern size: 1,800 gal  
 Collection strategies: rain, ground well  
 Systems fed:  
 Ground Well: lavatories, drinking fountain, sinks  
 Rain: toilets, washdown functions  
 Grey water: Eco Machine  
 Systems fed: dispersal field that recharges groundwater  
 Black water: Eco Machine  
 Systems fed: dispersal field the recharges groundwater

# Building Info



SITE AND FLOOR PLAN

- 1 Entry
- 2 Lobby
- 3 Classroom
- 4 Aerated lagoons
- 5 Mechanical
- 6 Outdoor classroom
- 7 Constructed wetlands
- 8 Sand filter

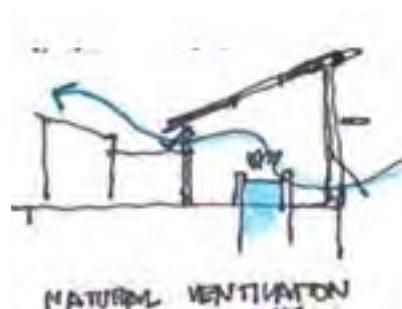
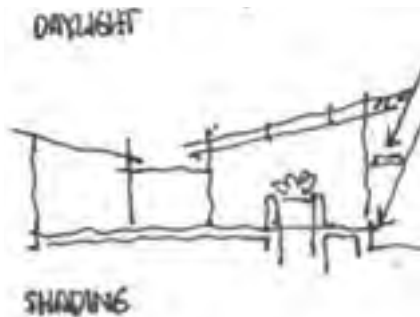


cross section



## sustainable features

Diagrams showing each sustainable Aspect of the facility and generally shows how that system works.



# Elevations & Site



- |                         |                       |
|-------------------------|-----------------------|
| 1) Septic Tanks         | 7) Rain Gardens       |
| 2) Anaerobic Tank       | 8) Rain Water Cistern |
| 3) Wetlands             | 9) Mech. & Elec. Room |
| 4) Aerated Lagoons      | 10) Learning Lab      |
| 5) Sand Filter          | 11) Woodlands         |
| 6) Subsurface Dispersal | Restoration           |
|                         | 12) Courtyard         |

# Site Breakdown

4  
Plant Displays



2  
Reservoir



3  
Pond



12  
Outdoor Courtyard



Site Plan

0 20 60 80 ft

# Interior Materiality



## Successful Red List substitutions:

original product	red list item	specified manufacturer + product names
Pipe	PVC	HDPE, Cast Iron
Plywood	Formaldehyde Adhesive	Reclaimed Plywood, Reclaimed Lumber
Insulation	Polyurethane	Polyisocyanurate
Exterior Wood	Creosote, Arsenic or Pentachlorophenol	"Mushroom" Cypress (reclaimed cypress lumber)
Glulam	Formaldehyde Adhesive	Glulams utilizing Phenol-Formaldehyde Adhesive
Fiberglass insulation	Formaldehyde Adhesive	GreenFiber Cellulose Insulation
Roof	PVC	EPDM Membrane Roof
Foundation Drain Pipe	PVC	HDPE
High Performance Coatings	VOCs	Low VOC Coatings (Tnemec)
Interior Wall Paint	VOCs	Low VOC Wall Paint
Uplstery / Carpet	HFRs	Not Used
Roller Shades	HFRs	Lutron - Vela Frabic
Wood Windows	Formaldehyde	Wood Windows laminated with Phenol-Formaldehyde Adhesive

## material selection

For the Living Building Challenge building materiality is far more important than in other sustainable building process like LEED. Each material for the structure was discussed by every member of the design team with a full list of specs and material compositions from the manufactures. If materials or any of the materials in their compositions would not meet the buildings goals then replacement materials were found even if it meant a significantly higher cost.