

Green Buildings - Education

Omega Institute

Omega Center for Sustainable Living

Rhinebeck, New York

Program

NYSDERDA New Construction Program

Scope of Services

- Project Scoping
- Design Assistance
- DOE-2.1E Whole Building Modeling
- Green Building Services
- EEM/Sustainable Design Coordination
- Cost Benefit Analysis
- Incentive Calculation & Reporting
- LEED Optimize Energy Performance
- LEED Fundamental Commissioning
- LEED Enhanced Commissioning

Level of Involvement

Prime Contractor

Facility Size

6,200 sq. ft.

Facility Type

Educational

Project Results

Achieved LEED-NC v2.2 Platinum Certification
Achieved Living Building Challenge

The Omega Institute constructed a 1-story wastewater treatment/educational facility on their campus in Rhinebeck, New York. The Omega Institute is a holistic and wellness center that is located on 195 acres in Dutchess County in Upstate New York. The Institute facilitates a variety of workshops, conferences and retreats for wellness and personal growth. Omega is committed to sustainability and they are seeking LEED Platinum and the Green Building Living Challenge for this project. The Omega Center for Sustainable Living (OCSL) is a 6,255 square foot building that houses part of the Eco Machine waste water treatment system. The building will also act as an education center complete with a classroom, lobby, restrooms and other support spaces. The Eco Machine, one stage of an ecological wastewater treatment system for the campus, is housed within a greenhouse-type



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space. The basic design for this project's Eco Machine begins with the collection of 52,000 gallons per day of sewage from buildings on the campus into two underground septic tanks where an anaerobic process begins to break down organic matter and settle out particulate matter. The next stage is the constructed wetland where wastewater enters below the surface of the gravel; plant roots draw out nutrients; these same roots contribute oxygen to the water which helps initiate a bacterial processes known as nitrification (ammonia (smell) is converted to nitrates) which then reacts in oxygen deprived pockets to convert nitrates to nitrogen gas (de-nitrification) which percolates to the atmosphere as a non global-warming and non greenhouse gas. The waste water then enters the building area called the Eco Machine, a greenhouse like space containing lagoons having microscopic algae, fungi, bacteria, protozoa, snails, lams, fishes, zooplankton, and even trees and shrubs where nitrates are further removed along with phosphorus.

This facility will act functionally as the hub of the treatment process, but will also be a key manifestation of Omega's mission to protect and restore the environment. An adjacent parking lot and constructed wetland (part of the treatment process) are other components of the project.