

**Oberlin College  
Environmental Studies Center  
Concept Document  
December 29, 1995**

This concept document is a first attempt to bring together the many ideas that have been discussed during the past four months during planning sessions and programming charrettes. This document should serve as a "wish list" of ideal characteristics and qualities of the project.

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## Program Summary

The Environmental Studies Center should be a highly visible model of ecological design in a 10,000 square foot, zero emissions facility that meets advanced criteria for energy and materials efficiency, use of recycled materials, biological wastewater treatment systems, solar and wind energy, and ecological landscaping. The Center should be inviting to a variety of college departments, both academic and professional, and to the non-college community. The Center should promote the development of collaborative, integrative research projects between different departments on campus and parallel efforts in the community. This calls for a space where groups of various sizes and functions can meet both privately and publicly, a resource center, and a display and presentation space.

## PROJECT GOALS AND OBJECTIVES

Oberlin College launched an effort to design and construct an Environmental Studies Center in order to relieve severe space constraints on a rapidly growing Environmental Studies Program (ESP). The ESP is limited by a serious deficiency of the office and classroom space and related facilities essential to the environmental education. ESP offices and classes are scattered throughout the campus. The Environmental Studies Library is jammed to overflowing in a small room in the main library. The ESP lacks facilities necessary to teach advanced courses and, in contrast to most departments at Oberlin College, ESP faculty and students have no central place where they can meet informally or work on common research projects. This project aims to equip the ESP with additional resources and capabilities that will enable it to contribute more effectively to the intellectual life of the College.

The project also aims to use architectural design as an example of how the world can be reconnected and promote ecological design as a unifying element in a liberal arts education. We intend, in other words, to use the solution of a practical problem at Oberlin to gain significant leverage on a much larger problem having to do with how and what universities build and consequently, how the educate. Colleges and universities are, for the most part, still educating the young for an industrial world. But in the much more crowded world of the twenty-first century those schools now in school must have the know-how and know-why to sharply reduce the amount of land, fossil energy, materials, and water thought necessary for a decent life. The good news is that ecological design knowledge necessary to this transition is coming into existence. This project aims to create a tangible and highly visible model of ecological design, and use that model to influence other colleges, universities, and professional associations.

## DESIGN CRITERIA

The specific design criteria for the project include:

A) Process: establish a model for participatory design that breaks down barriers between departments, students and faculty, and between the campus and local community, including builders and developers;

B) Pedagogy: landscape and building design that encourages mindfulness of materials and energy, promotes ecological competence, and instructs in the practical arts of inhabitation including competence with photovoltaic and wind energy systems, solar design, engineering and materials use, building management, waste cycling, gardening and horticulture, and composting; development of analytical skills such as the facility to do least-cost, end-use analysis and life cycle costing for materials, water, and energy, as well as integrated resource planning;

C) Materials: use of materials that can be extracted, harvested, manufactures, and installed or simply re-used without compromising justice, human dignity and environmental quality – emphasizing those that are non-toxic and/or recycled, sustainably managed, and when possible, locally available;

D) Energy: maximize energy efficiency while meeting as much of the energy needs for cooling, lighting, and electrical power from renewable sources as possible, aiming to be a net energy exporter not an energy importer.

E) Water: maximum efficiency in water use while recycling all organic wastes from the building using advanced techniques of ecological engineering;

F) Landscape: enhance biological diversity using rare and endangered indigenous plants; use of trees and vegetation to moderate temperatures; intensive gardens to supply vegetables and fruits and teach horticulture;

G) Economics: full costs of all materials, technologies, and systems of technologies used in the structure or required by its upkeep including: ecological and social costs incurred in mining, harvest, manufacture, and transportation of all materials; carbon dioxide costs of construction and maintenance; all deferred costs imposed on future generations; and ways to offset such costs.

## CURRENT PLAYERS IN THE PLANNING PROCESS

Constituent groups thus far involved in the participatory planning process include: the College Board of Trustees, the College President, the VP of Operations, the Facilities Planning and Construction department, the Environmental Studies Program Committee, faculty, staff and students from a number of disciplines (predominantly the Environmental Studies Program), Environmental Health and Safety, the Center for Service for Learning, The City of Oberlin, local design professionals, and local and regional environmental organizations.

We would like to expand the level of participation and interest in the project to include interested residents and professionals throughout Northeast Ohio. A wider constituency presents opportunities for future collaborations between Oberlin College and local initiatives, and allows the process, ideas and research informing this project to influence similar efforts in the Great Lakes region.

## SITE PLANNING

A site has not yet been chosen for the project. We are seriously considering the two sites marked on map #1. We plan to make a final decision as soon as the building program is finalized and an architect has joined our process.

In either location, the facility should be oriented for the best possible use of wind and solar energy for heating, electricity and daylighting. The facility should be highly visible, easily accessible and offer plenty of bicycle parking.

## CONCEPTUAL PROGRAM

The following recommendations are the composite of eight planning sessions and two programming charrettes. General use categories defined five overarching goals for the facility:

- Interactive Spaces
- Community Interaction
- Integrative Education
- Evolutionary Design
- Interdependence

### I. Interactive Spaces

An emerging theme for the Center is as an incubator for innovative, collaborative research projects focused on the local environmental issues. The Center should engage users by having comfortable, welcoming spaces, rooms designed to be flexible and adaptable for different uses and users, and accessible technological support systems. Through its resources, technologies, and activities, the Center should influence sustainable development on the Oberlin campus, in the Oberlin community and beyond.

Meeting spaces in the facility should be flexible, multi-purpose and able to be reconfigured for different audiences and functions. To accommodate diverse groups in seminars or “charrette” style planning sessions, the facility should have some sort of large meeting room for community-wide initiatives that allows people to meet, spread out maps or other materials, share ideas and develop new ones. Furniture in the space should

be easily moved as a group sizes and functions change. Flexible partitions could help modify the size of the space and accommodate different kinds of activities.

## II. Community Interaction

The building should facilitate an on-going process, from the design through use, whereby users continually develop the Center's program. The process should be fully documented and openly displayed.

The Center has been described as a town square, a forum or café-like. To the extent possible, barriers between faculty and students, college staff and workers, and town and college should be blurred. The design should invite people from diverse backgrounds to come together to work on solving local problems on campus or in the community. The entire facility should be designed to encourage gatherings whether it be formal, informal, "charrette"-like, one-on-one, around a meal or chance meetings.

A library in the Center should be not only house a large portion of the college's environmental literature, but also function as a resource center of newsletters, magazines, announcements of local events, databases of local issues, organizations, people and initiatives, ect. Computers should be available for electronic information gathering. This area should offer well lighted quiet reading and study spaces.

All public spaces should be completely accessible, somewhat separated from the private meeting or study areas, and daylight when appropriate but darkened for AV presentation.

## III. Integrative Education

The entire facility should function as a lab/ learning center. The Center should foster interdisciplinary and active learning. Gathering spaces should be specifically designed for integration of a variety of disciplines and perspectives and for the application of academic topics to practical, real world challenges.

The Center would function as the staging grounds for intergenerational research projects where successive generations of students participate in on-going research projects. Meeting space for community-wide initiatives should involve faculty and students in collaboration with members of the local community.

Technological systems should be accompanied by displays showing the buildings' "guts" and the buildings' vital signs (capture of solar energy, sewage recycling, electricity production and energy and water use, ect.). Such displays could compare the facility with more conventional buildings, generating data on resource use and money saved.

The facility should operate with zero emissions, maximum efficiency energy systems. Through a combination of photovoltaic and wind systems, the Center should be able to produce its own power, ideally as a net exporter. A possible combination of solar, geothermal and biomass energy could heat and cool the building.

The restrooms in the facility should be either self composting or connected to a “living machines” system inside the building to process wastewater, grow plants, grow fish, and store heat.

#### IV. Evolutionary Design

To a large extent, the building should be designed as an “unfinished product” which will evolve with the needs or contributions of future generations. The facility's parts should be easily accessible and be able to accommodate technological advances as well as changes in student and faculty research interests.

#### V. Interdependence

Consideration should be given to how the Center relates to the landscape, the bioregion and the ecosystems it affects. To the greatest extent possible, the interdependence of ecological systems and the elevated level of mindfulness and responsibility with which we must learn to make design decisions should be indicated by the Center's design and displays. For example, recycling and composting bin should help facilitate a “waste is food” ethic. All gathering, work and study spaces should indicate a connection to living support systems through artwork, indoor horticulture, daylighting, and water movement.

The entryway should offer a subtle transition between the outdoors and inside. Bioregional characteristics, weather patterns, north/ south directions, and longitude and latitude information should greet people entering the facility. Other displays should provide information on local environmental conditions, such as the Black River Watershed and the Great Lakes. Also, the geological, social and cultural history of Oberlin should be represented.

Landscaping around the Center should include native, rare and endangered plant species, species which attract native birds, a herb garden and other edible plants. Thoughtful tree and vine plantings should help maintain a comfortable temperature inside. To help blur the distinction between the building and its landscape, plenty of plants should be growing inside and gathering spaces should also be designed outside.

The Environmental Studies Center  
Draft Program  
February 2, 1996

SPACE (approximate square footage)

ENTRYWAY (500sq.ft.)

- Thematic entrances to “smart” building: displays of local weather, building energy uses...
- Air-locked to avoid heat loss
- Lobby / waiting area for tours to begin (maybe part of atrium)

ATRIUM (2000-3000sq.ft.- 2 stories)

- Like a village square, a forum, a courtyard
- The core of the building – rest of building bends around in a horseshoe shape
- Full of sunlight, water, plants
- Multi-levels with a 3-D feel (banners, plants, water connecting various level)
- Balconies, catwalks and decks (both inside and out)
- Serves as a theater in the round for large presentations- back opens to other spaces
- “furnace” and “boiler” for solar space and water heating
- Biological wastewater treatment system(??)
- Double as a classroom space

LIBRARY (500-1000sq.ft.)

- Houses ESIC, environmental studies classes ecological design resources...
- Reading area
- Checkout desk

WORK SPACE

- Open space ideal for charrette-like work
- Place for hanging things on the walls (i.e. maps of the Black River)
- Comfortable to work in large or small groups (up to 20-25 people)
- Double as a classroom

OFFICE CLUSTERS (5 ESP offices: 800sq.ft., plus general office space: 600 sq.ft.;  
DOES NOT INCLUDE CLUSTERS 2 OR 3)

- Cluster 1: 5 or 7 offices for ESP [building staff (1-2); ESP faculty (3-4); AA (1)]
- Cluster 2: Additional office space for a larger concept [Envir. Health & Safety??; Fac. Plng & Cons??; OSCA??...]
- Cluster 3: Another office area for an outside environmental organization [Seventh Generation??]

#### SMALL MEETING ROOM / CONFERENCE ROOM (200sq.ft.)

- Able to be closed off for privacy
- For ESPC meetings, maybe also Board of Trustees
- Double as a classroom

#### STUDENT STUDY AREA (can be a part of another space)

- Work space for honors students

#### SMALL AUDITORIUM (1500sq.ft.)

- For no more than 100 people
- High-tech
- Back can be opened onto library or work space to offer seating for 200 people
- Double as a classroom

#### KITCHEN (200sq.ft.)

- For making coffee
- Able to support a catered dinner and cleaning up
- Prep and storage area for edible landscaping

#### RESTROOMS, CUSTODIAL & CIRCULATION (1000sq.ft.)

- All ADA accessible

#### STORAGE AND MECHANICAL AND STRUCTURAL (200sq.ft.)

**Square footage: 10,000-11,500 sq.ft.** (without additional office space for non-ESP)

#### OTHER CONSIDERATION

- Low-finishes inside (i.e. waxed concrete)
- Plumbing and guts of building accessible (catwalks and open chaseways)
- Easy to retrofit
- Residential component in a nearby retrofitted house
- Materials: reused bricks, recycled steel, quarry stone, wood interiors
- Artwork: say something about what was here (natural history museum-like)
- Landscaping: all around; complex, multi-layered; using water; including sculpture
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