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**The Enterprise Center**



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## About Us

### The Overbrook Environmental Education Center

(OEEC) is an "ultra-urban" environmental outreach center where conservation and environmental Best Management Practices (BMP) are demonstrated for public benefit. The architectural design for this award winning center is a model of sustainable passive technology that reduces pollution, preserves native fauna and enhances the communities' overall quality of life.

The OEEC is in walking distance from where urban students walk to school and home. It is also uniquely located in the Schuylkill River Watershed, and is a tributary to the Delaware River and Delaware Estuary. This 45,000 square foot, former brownfields site is approximately 1.5 miles from Concourse Lake, located within Fairmount Park, and is approximately 3 miles from the Schuylkill River.

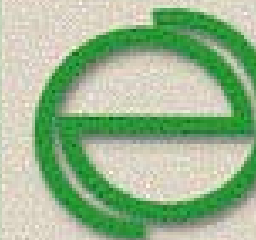
The mission of the OEEC is to remove barriers from the public's full appreciation of the Philadelphia region's technological and environmental resources. This center promotes environmental education, and improved health and participation in renewable energy sustainable technological environmental projects.

With grants from the Environmental Protection Agency (EPA), PA Department of Environmental Protection (PA DEP), City of Philadelphia and others, the OEEC used their existing environmental education curriculum to interpret a physical demonstration project that would allow students and the public alike to witness how sustainable technologies performs!



6130 Lancaster Avenue  
Philadelphia, PA 19151

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# OVERBROOK ENVIRONMENTAL EDUCATION CENTER



## Stormwater Management Education Learning To Protect Our environment

### THE OEEC's Stormwater Management System

is designed to use bioretention basins, swale and green roof systems, and pervious surfacing to manage the site's stormwater. Through the use of porous pavers and asphalt in the parking and courtyard areas, reduced rainwater flows will run off into the municipal combined-sanitary sewers.

Reducing rainwater in Lancaster Avenue's Combined Sewer Overflows (CSOs) reduces non-source point pollution, while slowly returning stormwater back to aquifers, creeks, and streams. The basin filters pollutants and traps them in the pavement stone course; cools stormwater temperature; and demonstrates technology that can be used on new sites and site retrofits throughout urban areas.



The implementation of bioretention systems is designed to demonstrate environmental best management practices (BMP). This environmentally responsible design will, in time, permit healing of the aquatic ecosystem of the tidal Schuylkill River. As stormwater disappears into the pavement rather than running off, the OEEC demonstrates passive environmental remediation in the urban setting.

The public will see plants growing on the roof and wonder why. Students will see rain barrels and cisterns collect water that can be reused to water plants. Our signage will describe the importance of this site's technological systems as they mimic natural systems.



## BioLab An Outdoor Classroom Where Nature is One of the Teachers

### The Biolabs

are outdoor portals demonstrating Stormwater Management techniques, urban conservation and landscaping methods. The biolabs will allow students to learn about native plants, micro-habitats of birds, butterflies, and ladybugs, and the values of reducing impervious surfaces and replacing natural water cycles.

These labs were formerly 11' x 17' industrial reinforced concrete storage bins. The portals are currently located on the OEEC site; a perfect outdoor classroom that supports numerous stormwater management techniques, and urban conservation and landscaping methods. There are currently five portals that will be used to hold classes on the following topics:

- Caring for gardens during drought conditions
- Constructive use of natural soil amendments, such as biosolids
- Use of native plants, herbs and vegetable species
- Creating structures for the micro-habitat of birds, butterflies and ladybugs
- Reducing impervious surfacing and replacing natural water cycles

The preservation of the existing concrete portals was an excellent means to gain outdoor classroom space, reduce cost for removal, and minimize disruption to the site. Further, the reuse of this existing site feature establishes a good example of gaining new value out of old and decaying urban infrastructure.



## Renewable Energy Science and Natural Working Together

### The OEEC Urban Garden

is an ideal example of how to restore native fauna and natural woodland in an urban setting. The urban garden will restore biodiversity, improve air quality, provide habitat for wildlife, reduce the "heat island" effect, reduce rainwater runoff, and improve soil filtration and porosity. Signage will describe the function of a native habitat.

The garden will utilize and preserve 10,000 square feet of "green" wooded area at the OEEC site. Native plant species will be used to promote several learning outcomes. These native plants have spent eons adapting to Philadelphia's climate and are tolerant of our season weather variations.

*The garden will utilize and preserve 10,000 square feet of "green" wooded area at the OEEC site.*

The Urban Garden is the most visual aspect of the entire OEEC curriculum in representing the value of preserving our natural environments. This extensive wooded areas in West Philadelphia was left primarily undeveloped, but was frequently used for dumping of debris. Student can participate in and be proud of their neighborhood. The density of this urban community can be relieved by this undistributed open space.

The Urban Garden will promote pollution reduction and conservation and environmental education. The garden includes gathering spaces, water retention devices, rainwater cisterns, and a section dedicated to harvesting native plants. This area will be a microhabitat so students will be able to study butterflies, bugs, and birds in their own neighborhood.



## Urban Gardens: Growing Green in the City Benefits Everyone

### The goal of the OEEC

development is to produce a LEED quality Green Building and facility. The CDC design team is committed to this objective, and their designs consist of green power that is derived from solar, geothermal, and biomass options, and low-impact water retention strategies. The electricity needed in excess of that provides by the planned photovoltaic panels will be purchased from a regional energy/power provider.

The OEEC Building design, at 6150 Lancaster Avenue, meets LEED Energy requirements as we understand them, and follows ASRA standards 90.1. The building, through COMcheck software and/or equivalent, will have no trouble exceeding the 90.1-1999 standards by 20-25%. This assumes continuous R-values of 30 for the roof, 10 for the walls and 5 for the slabs; wood frame and low "E" glazing.

Also planned for this building are Evacuated Tube Solar Collectors. This system will allow solar energy to be used to provide hot water for the OEEC. The 6'-0" long, 3" diameter glass tubes will provide a visually interesting demonstration of sustainable technology. A typical module (approximately 5'-0" wide) connects 20 tubes in a tightly-space parallel array with a stainless steel piping manifold along the top edge. The collectors could supply domestic hot water and pre-heat water to be used by a boiler.

