

Phipps Conservatory and Botanical Gardens

The Green Heart of Pittsburgh



Tropical Forest Conservatory

The most energy efficient conservatory in the world.

Phipps' Tropical Forest Conservatory was approached as an opportunity to set a new standard in glasshouse design and construction. To accomplish this, Phipps combined new and existing technology with fresh thinking to produce comprehensive solutions.

The first of its kind in the country, the conservatory will exhibit a different tropical forest region every two years. Environmental issues and the culture of each region are interpreted through plant life throughout the conservatory, allowing visitors to better appreciate diversity in our world.

What's Next:

A Living Building, The Center for Sustainable Landscapes

Phipps Conservatory and Botanical Gardens recently accepted the Living Building Challenge issued by the Cascadia chapter of the U.S. Green Building Council and plans to build on the technologies used throughout the Conservatory to meet the challenge.

A ground breaking ceremony in the fall of 2008 will launch the Center for Sustainable Landscapes with a goal of being regenerative—a building that will sustain itself and give back water and energy resources to the rest of the Phipps property.

- **100% Passively Cooled:** A radical roof venting system is coupled with earth tubes, fogging and computer controlled thermal blankets.

- **First Fuel Cell in a Public Garden:** A solid oxide fuel cell converts natural gas into electricity with remarkable efficiency.

- **Super-Efficient Heating:** Double-pane insulated roof glass, root-zone heating and thermal massing in the surrounding walls amplify the energy savings.



New and existing technology make Phipps' new Tropical Forest Conservatory the most energy efficient in the world.



Roof Vents

A north-sloping roof allows for insulated double-pane glass. Half of the roof opens to eliminate the greenhouse effect, using vents controlled by an Argus computer system.

Earth Tubes

Six 24-inch diameter, 300-foot long concrete tubes are installed at 15 feet below grade, where the temperature is a steady 55 degrees. The tubes travel 150 feet to the conservatory.



Fuel Cell

The fuel cell converts natural gas into electricity with remarkable efficiency, and is used to supply for visitors.

Energy Blankets

Computer controlled energy blankets prevent heat loss in the winter and provide shade in the summer.



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