CATCH THE breeze

Natural air flow and carefully selected materials in this Convention Center ensure healthy indoor air for all building users.

Did you know?

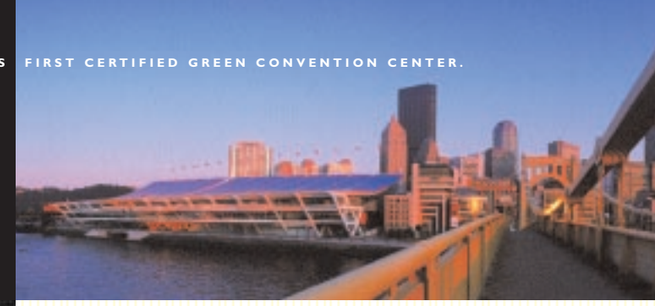
In 40 commercial buildings, workers in buildings with high ventilation rates had 34% fewer short-term absences than workers in buildings with standard (to code) ventilation rates. Effective ventilation and avoidance of toxic indoor materials are the keys to healthy indoor air, helping us avoid many diseases and increasing our vitality and productivity.

Prior to 1920, opening a window was the only way to cool and ventilate a building. In Pittsburgh, this low-tech strategy works well for three seasons of the year. Unfortunately, most modern offices rely on closed, central air/heating systems—so opening a window allows high-cost, mechanically-produced energy to leak out. The blend of natural and mechanical ventilation in this building results in maximum performance at minimum cost.

YOU ARE HERE IN THE WORLD'S FIRST CERTIFIED GREEN CONVENTION CENTER.

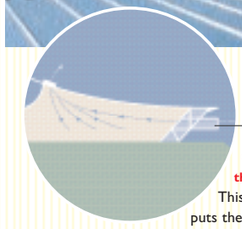
This remarkable place adds an elegant, extremely functional, environmentally friendly facility to downtown Pittsburgh's riverfront. The facility integrates green building strategies for using light, air, water, land and materials, making this Convention Center a striking demonstration of green design.

To learn more, visit the Sports & Exhibition Authority at www.pgh-sea.com



Good air = good health. Using natural fresh air to ventilate this Convention Center boosts the indoor air quality. Visitors are likely to experience less illness and to feel more energetic.





Go with the flow. This building puts the natural mechanics of air flow to good use. The swooping shape of the Center's roof draws warm air up into the roof peak, where it exits through louvers. The resulting vacuum pulls cool air through vents on all sides of the building.



Healthy interiors. Paint, adhesives and carpet often contain VOCs (volatile organic compounds). VOCs emit ground-level ozone, which causes lung tissue damage and reduces lung function. The materials in this building contain low- or no-VOC content, ensuring a comfortable, healthy indoor environment.

The best things in life... Good health and increased productivity are proven benefits of a well-ventilated building, but the costs of fully-mechanical ventilation systems are high. This building's well-designed use of natural ventilation provides fresh air for free.



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ENHANCE THE light

Carefully planned use of daylight in this Convention Center significantly reduces energy use.

Did you know?

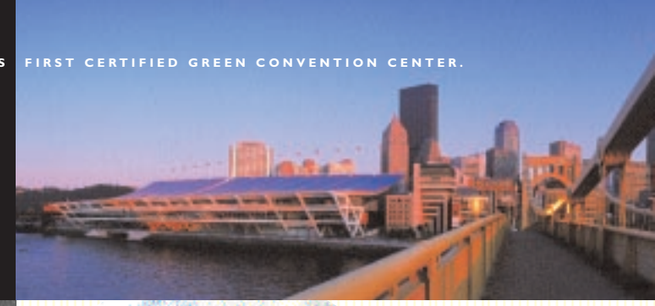
Buildings in the U.S. consume more than 30% of the nation's total energy load and about 60% of its electricity. Fossil fuels produce about three-quarters of this energy, causing extreme problems for human and environmental health. Concern about fossil fuel reliance has stimulated demand for green electricity, which is generated from renewable sources such as wind. Wind is the fastest growing energy source in the world: in 2002, the capacity to generate energy from wind increased by 27%.

Daylight dramatically improves human functioning. In over 100 similar retail stores, those stores with skylighting experienced a 40% increase in sales over those without skylighting. In three school districts, test scores of children in daylit classrooms were 20% higher than scores of children in rooms with electric light only.

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Plug into the sun. This Convention Center uses daylight rather than electric light whenever possible. The first of its kind in the U.S., the 250,000 square foot main exhibition hall can be lit entirely through its skylights and windows. This saves considerable energy on lighting. Because electric lights generate heat, it also saves energy on cooling.



35%

Green savings. Incorporating green building strategies into the building's design saves a considerable amount of money. Energy efficiency measures, such as sensor-controlled use of light and natural ventilation, are projected to save 35% of the energy this building would otherwise use. This amounts to the electricity consumed by 1,900 Pittsburgh households and a cost savings of over $500,000 a year.

Well-lit by design. Architects and engineers used this model of the building to simulate its daylight conditions over the course of a day and through changes in season. The information gathered was applied to decisions about the design of skylights and shading devices. This design effort results in light that is even and diffuse with no hot spots, no glare and no shadowy caverns.



Feeling good? Studies show that we thrive when our indoor environment is similar to our outdoor environment. The fresh air, sunlight and outdoor views provided in the Center keep occupants healthy, refreshed and stimulated.



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PUT IN place

Reusing a downtown site makes this Convention Center a key piece of Greater Pittsburgh's urban revitalization.

Did you know?

Of the 531 million passenger cars in the world, about 25% of them are in the United States. In 2000, Americans owned 60% more cars, drove 146% more miles and thereby emitted 56% more carbon than in 1970. The average car in the United States travels about 50% more each year than a car in Germany and almost 200% more than one in Japan.

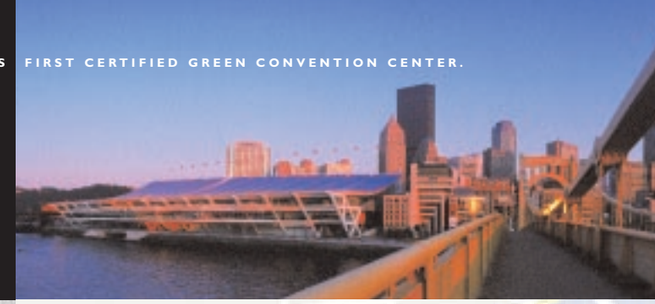
Researchers have begun to find health differences between adults living in an urban setting and their suburban counterparts. Urban dwellers weigh slightly less on average, and are less likely to suffer from high blood pressure.

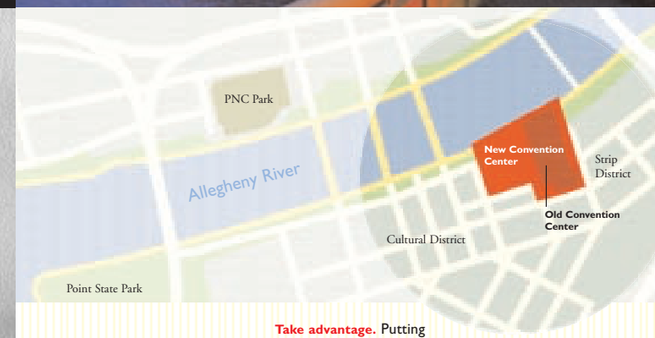
A convention center draws many visitors, each of whom spend about $225 a day. The Center's location concentrates this spending in the downtown area, helping to support and revitalize Greater Pittsburgh's urban core.

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Take advantage. Putting the new Convention Center on the same site as the old one required far less construction of roads, utilities and other infrastructure than would have been needed in a new site outside the city—creating significant savings in materials, labor and energy use.

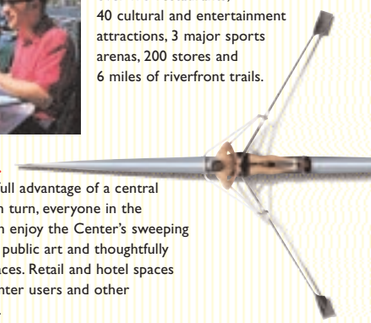
Getting around. The Center's easily accessible urban location makes walking, buses, light rail and even water transportation viable ways for visitors to get out and around: maybe to a ballgame! These alternative forms of transportation reduce air pollution and require less land for parking. The Center's parking garage includes bike racks and special spaces for car pools, while the city offers access to over 150 bus routes.







Take a break! Reusing a prime downtown location gives visitors easy access to amenities, including over 175 restaurants, 40 cultural and entertainment attractions, 3 major sports arenas, 200 stores and 6 miles of riverfront trails.



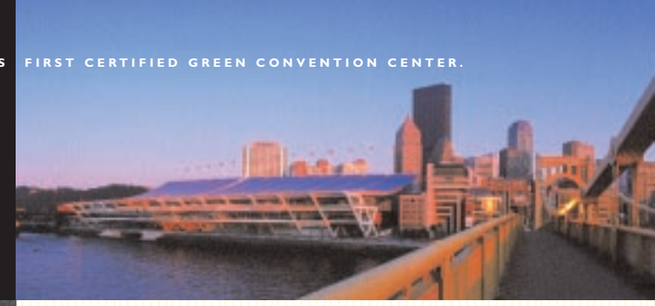
Mutually beneficial. The Center takes full advantage of a central downtown site—in turn, everyone in the downtown area can enjoy the Center's sweeping views, river access, public art and thoughtfully designed public spaces. Retail and hotel spaces will serve both Center users and other downtown visitors.

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THINK OUTSIDE THE drink

Using recycled water in this Convention Center greatly reduces the amount of water drawn from and discharged into the municipal system.

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Premium quality. All of the Center's sinks, fountains and kitchen faucets supply pristine drinking water—but why use drinking-quality water to flush toilets? Eliminating unnecessary use of drinking water cuts the amount of water drawn from the municipal system by 50%, and reduces water returned to the treatment system to almost nothing. Annual savings? Enough drinking water to supply 132 Pittsburgh households.



Appropriate quality. Recycled water isn't drinking quality, but it is ideal for flushing toilets and watering plants. The Center's recycled water comes from an on-site treatment system that collects the waste water from all drains, filters and cleans it, and puts it back to use. Pittsburgh's "fourth river"— an aquifer that runs beneath downtown—is tapped to resupply water lost through normal usage of the building's cooling towers.





Well-travelled and treated. Drinking water from the municipal system is delivered from a central plant to a building, used once, and then returned to another plant for treatment. Moving a single gallon of water through the downtown Pittsburgh system requires pumping it through 8 miles of pipe, treating it with 17 milligrams of chemicals and using enough energy to drive a car 50 feet. Most often, that gallon of water is simply used to flush a toilet.

Did you know?

Water has become scarce. During the 20th century the global population tripled, while water use per capita increased sixfold. Humans now divert 54% of all available freshwater from rivers, lakes, streams and shallow aquifers. In the United States and other countries, groundwater is being pumped faster than it is being replenished.

Toilet flushing uses more water in buildings than anything else. Americans flush about 4.8 billion gallons every day—that's enough to fill 6,400 Olympic-sized swimming pools.

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Did you know?

Nearly 300,000 buildings are demolished in the United States each year, generating enough debris to fill New York City's Central Park to twice the height of the Statue of Liberty.

Commercial construction generates between 2 and 2.5 pounds of solid waste per square foot, the majority of which could be reused or recycled. As a general rule, when the disposal fee exceeds $50 per ton, recycling becomes cost-effective.

The processing of recycled aluminum requires only 5% of the energy that is necessary to produce virgin aluminum from its raw material, bauxite.

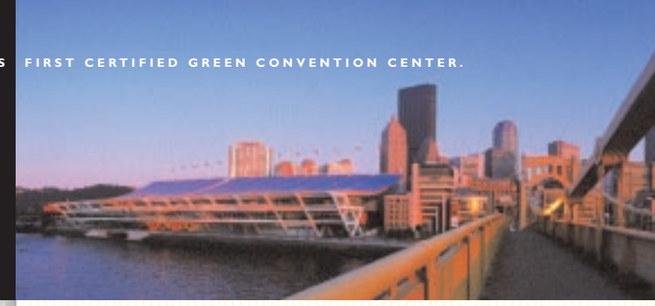
GIVE NEW use

Through careful design and planning, this Convention Center's construction process was able to reduce the amount of materials required, reuse demolition waste and include recycled materials.

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The three R's. Basic goals for environmental stewardship can be ranked by the extent of their environmental benefit: *reduce* avoids consumption altogether; *reuse* employs the same resources multiple times with little or no additional processing; *recycle* diverts material from the waste stream and decreases use of resources spent to produce material, but it does require reprocessing.

In large construction projects, all three Rs divert waste from landfills and avoid the negative impacts from the extraction, harvesting and manufacture of virgin materials.



Building a big difference. The construction of this Convention Center created opportunities to reduce, reuse and recycle on a very large scale.

Reduce. The suspended roof provides a column-free space for the exhibit halls. A more conventionally-constructed roof truss system would require about 32% more steel — nearly 400 tons.



Reuse. Over 95% of the demolition waste from the old convention center was reused as fill, diverting 53,228 tons — about 5,415 truckloads — of debris from landfills.

5415

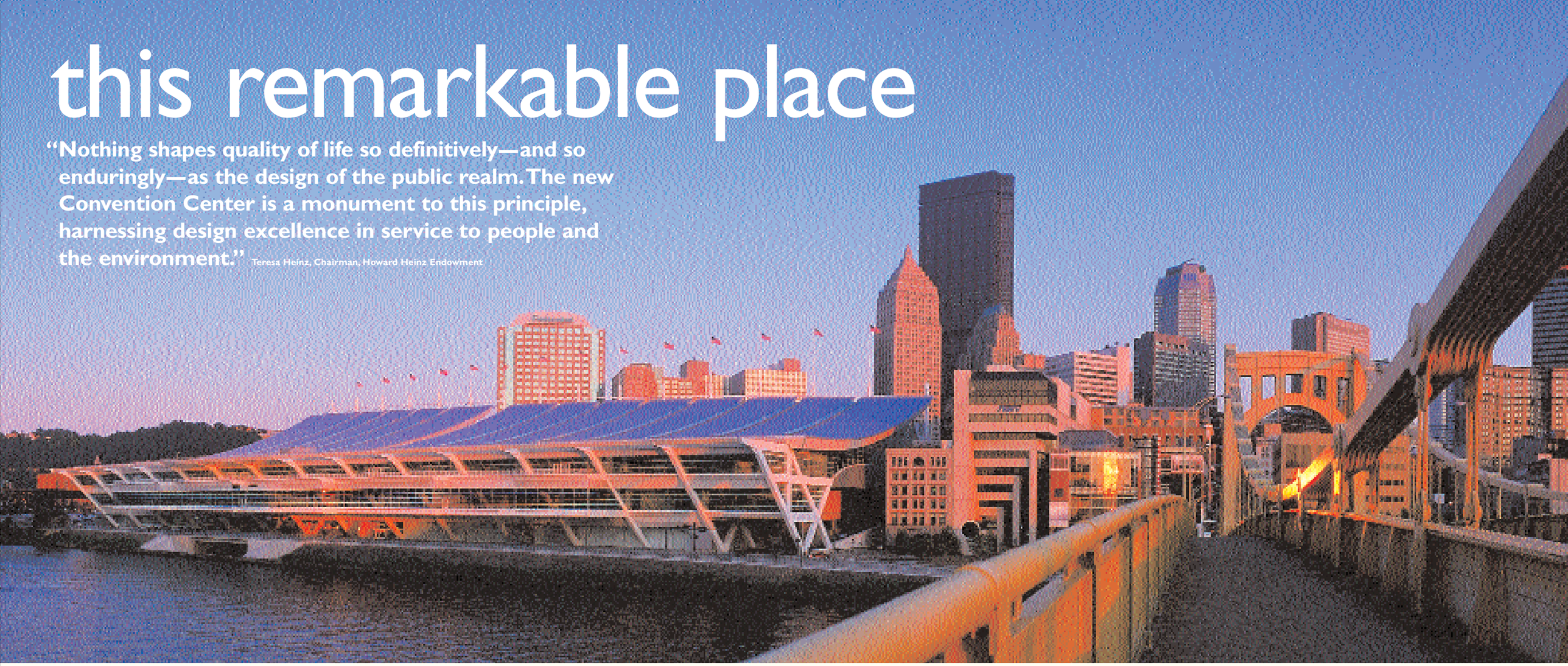


Recycle. The post-consumer recycled content in the Center's steel, aluminum, drywall and ceiling tiles comprises over 10% of the total building materials.

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this remarkable place

"Nothing shapes quality of life so definitively—and so enduringly—as the design of the public realm. The new Convention Center is a monument to this principle, harnessing design excellence in service to people and the environment." Teresa Heinz, Chairman, Howard Heinz Endowment



In recognition of its green features, the U.S. Green Building Council has certified the Center under the LEED™ green building rating system.

This remarkable region.
Greater Pittsburgh has undergone a dramatic environmental and economic renaissance during the past 50 years. A new economic diversity has evolved from a tradition of innovation combined with emerging industries. Former riverfront industrial sites now feature this Convention Center and other examples of the region's world leadership in green building and brownfield redevelopment.

This remarkable building.
The David L. Lawrence Convention Center reflects the environmental friendliness and technological innovation that are hallmarks of our region. The Center's design excellence results from a highly-successful international competition, which required participants to seek creative building solutions that would maximize multiple qualities:

- Aesthetics
- Functionality
- Economic feasibility
- Green building, *combining high performance with environmental responsibility*
- Public spaces and art
- Connection to the urban context

Design matters.
Exemplary building design creates large-scale opportunities to reduce the use of resources and improve the quality of life. To learn about the green opportunities created by the design of this building, read the displays along this corridor and visit the Sports & Exhibition Authority at www.pgh-sea.com.

Project Team

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Sports & Exhibition Authority

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Mechanical/Electrical/Plumbing Engineer
Burt Hill Kosar Rittelmann Associates

Structural Engineer
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Owner's Representative
AMEC Construction Management, Inc.

Construction Manager
Joint venture of
Turner Construction Company,
P.J. Dick, Inc. and
Advanced Technology Systems, Inc.

Green Building Manager
Green Building Alliance

Green Building Funders
The Heinz Endowments
Pennsylvania Department of Environmental Protection
Community Energy

Special thanks to the Southwestern Pennsylvania Convention Center Design Commission for incorporating green into their vision.

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