

The Gerding Theater Portland, OR



<http://www.Greenbuildingservices.com>

Kristen Frentzel

19 Oct 2006

Oregon National Guard Armory Building

- Built in 1891 to house local units of the Oregon National Guard
- Added to the National Register of Historic places in 2000
- Served as the storage and shipping warehouse for the Blitz-Weinhard's Brewery for many years

Partners

Project Financing

U.S. Bank, NA
Portland Family of Funds
Portland Development Commission
Goldman Sachs
Portland Historic Rehabilitation Fund
Armory Theater Fund
Friends of the Armory

Developer

Gerding/Edlen Development
Company, LLC

Architects

GBD Architects

General Contractors

Hoffman Construction Company

Mechanical | Electrical | Plumbing Engineers

Glumac International

Civil | Structural Engineers

KPFF

Theater Design

Landry & Bogan

Acoustical Design

Listen Acoustics

Experience Design

The Felt Hat

Historic Consultants

Heritage Consulting

Green Building Consultants

PGE/Green Building Services

Landscape Architects

Murase Associates

Geotechnical Services

GeoDesign, Inc.

Financing

- Private funding -- \$8.6 million
- Federal Water and Energy Conservation Grant -- \$0.50 million
- HUD Economic Development Grant -- \$0.15 million
- Federal Tax Credits -- \$16.90 million
- Total -- \$26.15 million
- Project cost -- \$36.1 million

Pearl District

- Historically an area of warehouses and railroad yards to service the central business district
- Rapidly changing from Commercial/Industrial to Residential/Commercial
- Today, it is the most well-known art district in Portland



<http://www.explorethepearl.com>

Sustainability Milestones

- First building on the National Register of Historic Places to achieve Platinum status
- First performing arts facility on the west coast to achieve Platinum status
- First historic building on the west coast to achieve Platinum status

Sustainable Sites



<http://www.explorethepearl.com>

- Removed all on-site building contaminants
- Created “Silver Park” from former sidewalk and parking spaces.
- On Portland Streetcar line and close to several bus routes

Sustainable Sites (cont.)

- Catchment system stores rainwater in underground cistern for use in toilets
- Pervious Pavers used in the sidewalk
- High-albedo light colored paving and street trees used to reduce the urban heat island effect
- Qualifies as a brownfields redevelopment and an urban redevelopment
- 30 bicycle parking spots and seven shower facilities

Water Efficiency

- No permanent irrigation because drought tolerant plants were used
- Rain water harvesting system reduces potable water used for sewage by 50%
- Efficient water fixtures used, such as dual-flush toilets and low-flow showerheads

Energy Use

- No CFC water chiller plant
- Chilled beams used for cooling instead of fan-driven HVAC
- Passive chilling and air circulation reduce HVAC energy use by 40%
- Displacement and underfloor ventilation

Energy Use (cont.)

- Glazing systems that reduce electric light use, minimize winter heat loss and summertime heat gains
- 41 skylights, light sensors and motion sensors to conserve lighting energy

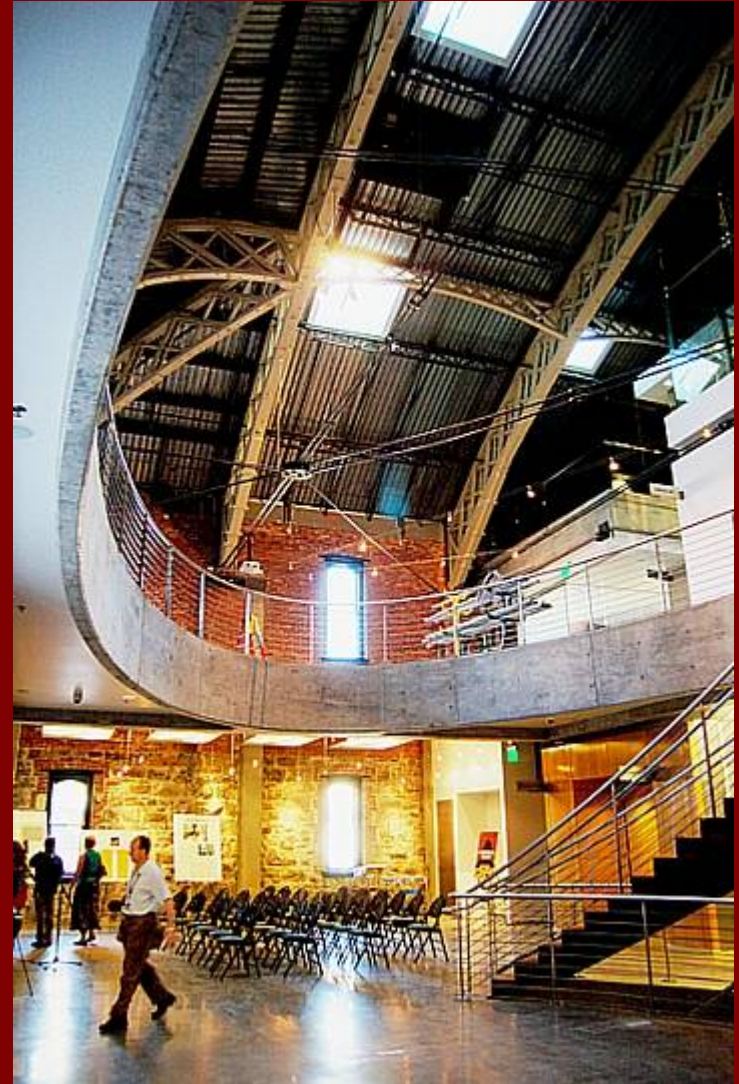


Photo Credit: Brian Libby

Materials and Resources

- Wood used was certified by the Forest Stewardship Council
- Recycling collection areas and staff training on issues of recycling and sustainability



Photo Credit: Brian Libby

Materials and Resources (cont.)

- 95% of construction waste was diverted from landfills
- 25% of materials have recycled content
- 45% of materials were manufactured within 500 miles of the site
- 79% of the existing structure was retained

Indoor Environmental Quality

- Biodiesel used in construction process
- CO₂ monitors used to ensure healthy working environment
- Displacement ventilation system provides ventilation air at the level of the occupant rather than above
- Daylighting introduced through skylights
- Low VOC materials used



Photo Credit: Brian Libby

Innovation in Design

- Earned exemplary performance point for 89% reduction of potable water
- Earned exemplary performance point for incorporating 45% of regionally manufactured materials
- Created Green Cleaning Policy to ensure indoor air quality is maintained
- Guided tours of building

Results

- Earned 53 of the possible 69 LEED points
- Stormwater runoff reduced by 70%
- Energy cost reduced 30% over standard construction
- Potable water use for irrigation reduced 40%
- Stormwater flow to sewer system reduced 50%
- Potable water use for plumbing reduced by 89%

Things Left Undone

- No green roof
- No natural lighting in some areas
- No photo-voltaic cells



Photo Credit: Brian Libby

Performance

- Computer simulation will be used to measure actual performance against projected energy usage
- They will measure and verify several systems, such as lighting systems and controls, motor loads, cooling load and boiler efficiency

Miscellaneous

- Portland has more per capita LEED certified buildings than any other city in the United States
- The building next to the Gerding (Brewery Blocks) will be LEED certified (expected silver, possibly gold).

References

Aye, Elaine. "Portland Armory Green Features". Green Building Services. October 2006. 5 pg.

Center Stage in the Pearl Campaign website. <http://www.pcs.org/armory/index.html>

GBD architects website. <http://www.gbdarchitects.com/>

Green Building Services website. <http://www.greenbuildingservices.com>

Pearl District Neighborhood Profile. <http://www.pearl-district-lofts.com/portland-oregon-pearl-district.html>

Portland Architecture:

http://chatterbox.typepad.com/portlandarchitecture/2006/09/touring_the_ger.html

"Portland Puts Tax Credits to Green Use" Environmental *Building News*. October 2004. <http://www.buildinggreen.com/auth/article.cfm?fileName=131004a.xml>

Trick, Thom. "Gerding Theater at the Armory Achieves LEED Platinum Rating". Market Wire News. October 2, 2006. <http://www.marketwire.com>.

Questions?



<http://www.greenbuildingservices.com/>