The Center for Health & Healing

PORTLAND, OREGON

LEED Platinum

Services
MEP Engineering
Sustainable Design
Building Technologies
Energy Services
Fire/Life Safety
Commissioning
Lighting

FAST FACTS

Architect
GBD Architects

General Contractor
Hoffman Construction Co.

Completion
October 2006

Building Size
400,000 sf

Project Cost
$145 million

Awards
Advancing, Reinvigorating, and Cultivating Excellence in Engineering / Project of the Year: *Consulting-Specifying Engineer* magazine, 2007

BEST Award / Green Building of the Year: Portland Office of Sustainable Development, 2007

Project of the Year: American Council of Engineering Companies, Oregon Chapter, 2006

Honor Award: American Council of Engineering Companies, 2006

Living Building Challenge Stepping Stone Award for Water Petal + Integrated Design: US Green Building Council, 2007

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From the beginning, it was clear that Oregon Health & Science University's Center for Health & Healing (CHH) was vital to creating a new Portland neighborhood on a former brownfield site, now known as the South Waterfront Development District. In February 2007, the US Green Building Council announced that Oregon Health & Science University's Center for Health & Healing received a LEED Platinum Certification. The Center achieved every point that was attempted, receiving a total 55 LEED credits-three more than necessary for the LEED Platinum designation.

Central Utility Plant (CUP)

A Central Utility Plant serves CHH and will serve adjacent buildings as they are developed. An on-site CUP provides many advantages, including low air emissions from a system that can grow over time as buildings are added to the district.

Building-Integrated Photovoltaics (PV)

Sunshades were integrated into the building's south-facing exterior to shield the interior space from direct sunlight and lower the HVAC system requirements for cooling. The sunshades themselves also provide a free surface for solar electricity-generating panels. By starting the PV array on the fourth floor, the panels are exposed to full sun for most of the year, even as the district is developed.

Chilled Beams

CHH is the first large building in the United States to replace air conditioning with vastly more efficient chilled beams. The chilled beams are similar to an automotive radiator placed horizontally just below the ceiling. Cold water passes through the chilled beams and natural convection currents carry cool air down to the occupant zone in the reception areas.

Site-Built Solar Air Heater

Another form of energy harnessed at CHH is arguably the most innovative of its kind in the West. On the 15th and 16th floors of the building's south side, the façade was transformed into a giant solar air heater.

Several large sheets of low-iron glass are placed 48 inches from the skin and sealed tightly. Warm air then rises between the building skin and the glass and is heated by the sun shining through the glass. The ensuing greenhouse effect produces warm air, which is moved through the air handling units across a heat exchanger and used to preheat water for use in the building.

Water Efficiency

Water conservation is enhanced by the recycling of all sewage by an on-site bioreactor, or wastewater treatment plant. This plant converts the building's sewage outfall into re-usable water for non-potable needs; as a result, it supplies 100% of the water required for sewage conveyance for all the toilets and urinals in the building.

First and foremost, buildings are designed so that people can live, work, learn and play in them. By keeping OHSU's goals at the forefront throughout the design process, the team was able to create a high-performance building environment that is comfortable, healthy and productive.

(Above) Maintaining optimal air quality in medical space was a vital project objective. (Right) Examining the building model in a district context allowed the team to make a number of early design observations which guided decisions in the subsequent design phases. (Below) By designing sunshades into the south façade, to keep the sun off the windows in summer and lower the HVAC system requirements for cooling, a free surface became available for solar electricity-generating panels.