

RENOVATION

Opsis Architects Headquarters Building

Portland, Oregon



Going for Gold – LEED®, That Is

Originally built in 1910, the Marshall-Wells Hardware Company's stables provided a sturdy shell for sustainable improvement. Designing a complete renovation of the existing two-story brick building into three retail spaces, small parking area, storage, lobby and Opsis Architects' second-floor headquarters, Interface contributed engineering design in:

- HVAC with radiant heating and cooling on the second floor and split system heat pumps on the first floor, reducing energy use by 40%
- Plumbing designed to reduce water use by 30%
- Performance specification for fire protection and building control system
- Carbon dioxide (CO₂) monitoring system.

Knowing the myriad benefits of sustainable design, Opsis' goal of LEED Gold certification highlighted the importance of efficient HVAC systems for a major contribution to energy savings.



WHERE AIR FLOW MEETS ENERGY SAVINGS

Making interior temperatures behave according to one's needs is a must, but achieving this at lowest cost requires an inventive approach. Interface brought this skill to the table with such designs as:

- Designing a mechanical system operating far closer to ambient conditions than conventional equipment by heating and cooling with a concrete radiant floor system
- Specifying a high-efficiency boiler and roof-mounted cooling tower supplying heated or cooled water for the building as well as the radiant-floor tubes
- Using the ample brick and concrete surfaces that provide thermal mass, thus moderating air temperature swings during the day
- Utilizing a direct digital controlled (DDC) system opening the windows in response to temperature and CO₂ sensors, to provide outside air as needed
- Ceiling fans over the occupied office area, improving comfort and reducing heating requirements by de-stratifying air in the winter. Reversing direction in the summer, this also reduces cooling requirements
- Building controls, integrated with external shading.

FAST FACTS

Interface Team Leader

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Building Type

Commercial offices
Building Renovation

Architect

Opsis Architects

Builder

Walsh Construction

Completion

August 2004

Building Size

10,000 SF

Awards

LEED Registered
US Green Building
Council

Associated Builders &
Contractors, Pacific
Northwest Chapter,
2004 Excellence in
Construction Award

Project Scope

Two-story building
in an urban setting

Contact

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