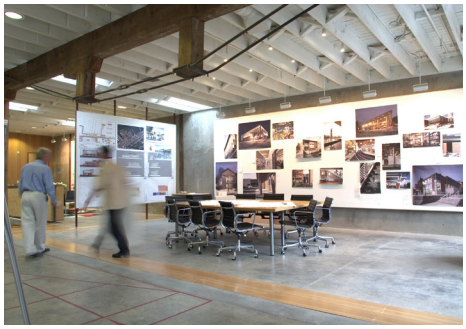
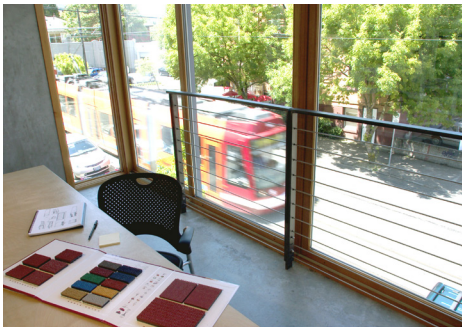
LEED GOLD CERTIFIED

lovejoy opsis building

portland, oregon

prior to renovation





a case study in sustainable design

The Lovejoy Opsis Building was constructed in 1910 as the Stables for the historic Marshall-Wells Hardware Company. It was constructed in the Northwest “Slabtown” area where Portland’s early lumber mill workers lived. This stout building has ground floor walls of brick four wythes thick that steps to three wythes on the second floor. The heavy timber wood columns and floors create a generous 13'-2" floor-to-floor height. This building was owned and operated by Marshall-Wells through the 1940s. Since that time, it has been slightly modified by new owners and used as a bindery, sheet metal and machine shop. With a prospering business and limited space at their current Northwest Portland studio, Opsis purchased the building, renovating the historic building at the corner of 17th and Lovejoy to provide ground floor office lease space and second floor offices for their firm.

Awarded LEED Gold certification from the U.S. Green Building Council, every portion of the 19,460 sq. ft. building was designed to maximize sustainability, including lighting, mechanical systems and finish materials. The building takes full advantage of daylighting and passive ventilation to reduce demands on mechanical and electrical systems. The mechanical system is an innovative radiant heating and cooling slab. By heating or cooling the slab next to the building occupants, this system operates at temperatures much closer to ambient conditions than conventional equipment and provides superior comfort. This also frees the ceiling of large air ducts, allowing an exposed ceiling design.

The office windows are extended to bring light deep into the floor plate and with the addition of 14 skylights, natural light reaches throughout the building. Roof ventilators with dampers located opposite the operable windows promote stack-effect exhaust of hot air and improve ventilation. Automated night-air-flushing minimizes the need to mechanically cool the building. The ample brick and concrete surfaces provide thermal mass that moderates temperature swings, holding in the daytime heat in the winter and nighttime cool of the summer. Solar panels provide power to serve several workstations.

lovejoy sustainability features

Sustainable Sites

- Opsis has two fully electric powered scooters available for staff to use
- The building offers access to multiple public transit modes, with a streetcar stop only one block away.
- Cyclists have plenty of secure bike storage in the garage area, as well as a shower/changing facility.
- Our roofing material is highly reflective to reduce heat gain, and reduce heat island effect.

Water Efficiency

- Our restrooms employ a variety of low-flow faucet fixtures as well as dual flush toilets. These reduce our annual water usage by over 30%. Some of the faucets even power themselves. Every time the water runs the battery is recharged.

Energy and Atmoshpere

- We heat and cool our space with a radiant slab floor. During winter hot water runs through the pipes heating the concrete slabs / thermal mass and radiating into the space throughout the day. By contrast, during the summer, cool water is run through the slab during the low night temperatures chilling the slab and radiantly cooling the space.
- Low-E, high efficiency glass used to minimize heat without consuming additional energy.
- Automatic motorized sunshade controlled by sunlight sensor on exterior wall. Stops west sun (solar heat gain) before it enters building which reduces capacity of building cooling systems
- Photovoltaic system (solar panels) on the roof provides 2500 watt maximum output, enough to power six workstation computers environment.

Materials and Resources

- Many of our desktops are actually reused doors. Also, the partitions between workstation groups had former lives as desktops from our old office space.
- Bapibod plywood was used for wall caps and base. Fast growing bapibod is sliced into strips, boiled, kiln dried then laminated together to create sheets of plywood. Bapibod is actually a grass and takes only 4 years to reach a mature height of 40 feet and a stalk with of 6 inches.
- The original brick for the building was maintained, reinforced by rigid insulation and 8” concrete wall for seismic upgrade.

Indoor Environmental Quality

- Operable upper windows controlled by building management system – windows open to control temperature and air quality.
- Original openings were enlarged to maximize light and views. Higher openings bring daylight deeper into office space.
- Ceiling fans enhance air movement, lower perceived temperatures and increases thermal comfort.

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