Hiawatha Maintenance Facility : ECO BLEND Award Submission 2012

Hiawatha Maintenance Facility, a LEED Platinum, award-winning public-works complex, transformed an unsightly, partly historic public-works facility in Minneapolis, MN, into an attractive and exceedingly green maintenance complex. The site, owned by the City of Minneapolis since 1906, is home to seven public works departments that operate 24/7. The design removed all but two of the 18 existing buildings to transform this derelict site while simultaneously creating a new model operation among these separate, but similar, departments. The completed 60,000 sf facility includes two-story office/support space, maintenance bays, interior and exterior storage, a covered tent structure for the salt/sand operation and a fixed canopy over the fuel island.

How Project Incorporates Sustainable Building Practices

At project inception, there was a stated intention among all members of the team to exceed the requisite certification level and to pursue LEED Platinum following the mantra “reduce/reuse/recycle.” Environmentally, over 90% of construction waste (over 1300 tons) was diverted from landfill through recycling, and nearly 12% of the project’s construction cost was spent utilizing reused materials.

Regional materials (26%) and FSC – certified wood (74%) were used extensively – including the reuse of wood roof deck from the existing building as interior wainscoting and locally-reclaimed trees removed due to storm or insect damage, re-invented as furniture and trim. A crushing operation was established on the site to crush all demolished concrete, brick, CMU and asphalt for use as road base, mulch and mow-strips, and pervious fill in the leech field. By cost, more than 20% of the materials in the building were harvested or manufactured within 500 miles of the project site. Ultimately about 96% of all the construction and demolition waste, by weight, was diverted from landfills.

Early in design, the team salvaged components from the demolition of a local Mississippi River bridge and incorporated them into the design. The former bridge deck no comprises the fence that runs the length of the site on the west side. On site, condemned buildings and asphalt were crushed and recycled for permeable site substrate and Gravel-Pave was installed as a “beta” test for future Public Works sites.

The design aggressively manages stormwater runoff due to the site’s proximity to the Mississippi River, Minneapolis’ stormwater policies, and the need for an abnormally high percentage of hard surfaces for vehicular and material storage. Stormwater retention and percolation on the site is self-contained by collecting runoff in underground tunnels that originally connected buildings. Bioswales and permeable paving were employed for portions of the parking lot to manage runoff.

How Project Incorporates Environmentally Friendly Elements

Daylighting and views are integral to the building’s design. The existing brick building was built prior to air conditioning, so it had a long, thin footprint to take advantage of natural ventilation. By separating the 3 main building volumes with a glass connector, the existing footprint could be exploited to maintain the daylight from those original windows while also taking advantage of their inherent views. Lighting and temperature systems respond to occupancy and environmental levels, adjusting for the facility’s wide range of intensive use vs. “skeleton crew” building occupancy. The facility is also the beta site for Minneapolis Property Services’ initiative to green buildings through a building maintenance program utilizing environmentally friendly cleaners and paper products.