

case study

The May 2005 issue of dpdINFO featured a case study on green parking lots, an innovative strategy for meeting landscaping and water quality requirements on parking lot projects. This month we highlight two City projects that recently gained LEED™ ratings.

Park 90-5

Buildings

A & C



The asphalt parking lot at Park 90-5, a multifunction police support facility, was at the end of its life and required replacement. It was pulverized on site and reused as base material under the new asphalt surface.

Bringing New Purpose to Old Buildings

The City's Fleets and Facilities Department (FFD) and the Seattle Police Department (SPD) were recently awarded LEED™ ratings on two projects in the Park 90-5 Renovation.

Formerly the site of a Starbucks's coffee-roasting plant and a meat-packing facility, the buildings were acquired in 1996, when the City purchased 10 acres with a five-building complex on Airport Way in order to relocate several specialized police functions from the downtown area. The City renovated Building A—an 84,000 square foot, four-story office building—and Building C—a 125,000 square foot, high-bay warehouse with office space. The new facility was developed to meet the specialized requirements of police department units, including forensic labs, offices and support, training facilities, classrooms, lockers, interior parking for fleet vehicles, quartermaster, and storage.

The adaptive-reuse of Buildings A and C originally encompassed 175,000 square feet of extensive renovation for both buildings on a budget of \$18 million. However, the 2001 Nisqually earthquake caused significant damage to both buildings, requiring seismic upgrades. With the upgrades, the project budget for the planned renovation, alteration and site improvements increased from \$18 million to \$30 million.

Even with the impacts to the project budget and schedule, the project team was able to keep the sustainable building goals on track. Building C achieved a LEED™-NC 2.0 Gold (LEED™ for New Construction), and Building A achieved LEED™-CI Silver certification (LEED™ for Commercial Interiors)—all for \$95 per square foot.

Building C Highlights:

- 99 percent reuse of structural systems and building envelope
- 96 percent of construction waste was recycled
- 57 percent of all wood is FSC-certified (\$250,000 lumber package)
- 31 percent water savings—over 1 million gallons of water and sewer conveyance savings per year
- 23 percent of all materials in building manufactured with recycled content
- 22 percent of all materials manufactured regionally
- 18 percent energy savings beyond the Seattle Energy Code and 34 percent better than ASHRAE 90.1-1999 requirements—over \$1 million savings over 20 years
- 14 percent of the building used salvaged materials including: \$430,000 of reused office furniture, windows, doors, cabinets and ceiling tiles

Project Makes Strong Case for Sustainable Building

The project's performance achievements demonstrate the success of the team's approach, and make a strong economic case for sustainable building. It began with a decision made by the City to forego new construction for this facility in favor of renovating an existing structure.

This strategy reduced the need for new materials and set an aggressive goal for salvaging and creatively reusing materials in the project. Concrete tilt-up walls and glu-lam roof members were retained with structural upgrades to meet seismic requirements. The salvaged building materials included structural heavy timber from the roof, doors, frames, windows, casework, ceiling tiles, office furniture, partitions and equipment. The architect, DKA, and the design team took care to creatively incorporate these items into the new design.

The asphalt parking lot, at the end of its life and requiring replacement, was also reused. Instead of removing the material and transporting it to a recycling facility, it was pulverized on site and reused as base material under the new asphalt surface.

Creative thinking allowed the team to turn project liabilities into assets. For example, the building is located in a tidal mudflat zone with a high water table. More than 300 gallons of water per hour were

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pumped into the storm sewer system to avoid flooding the first floor of Building A. The team decided to capture this water and use it as a resource by designing a water reclamation system. The system captures the underground water and diverts it from the storm drainage system for use in irrigation, toilet flushing and vehicle washing, which saves over 1 million gallons of potable water every year, and reduces utility costs. The system also benefits the municipal system by reducing impacts to the combined stormwater and sewage system.

Further, the team developed a site design to improve the connection between the buildings. The site improvements utilize landscaped bioswales in the parking area. The swales are both aesthetically pleasing and reduce surface runoff. Deciduous trees were planted to provide shade during the summer months and reduce the heat generated by the asphalt parking. Grass turf and English ivy (an invasive species) were replaced with native plants, which require less water for irrigation and provide better habitat for birds and animals.

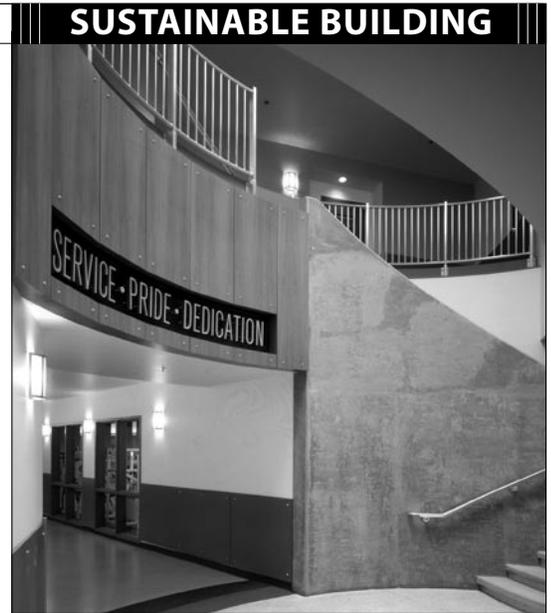
The design enhances human health by extensive use of natural day lighting in the office areas and warehouse storage areas. Low VOC products and materials provide for better air quality, and a raised access floor in Building C delivers fresh air directly into the occupied space and allows users to adjust the air delivery registers to meet personal comfort levels.

Finally, Turner Construction was able to make up some time lost by the earthquake (reducing the construction schedule by 3 months) by opening up the roofing specification to allow additional bidders. "After I showed a few suppliers the quantity of FSC lumber we were purchasing for this project, there were more competitive bids for FSC lumber by the time we were doing the second building," Craig Vierling of Turner said. And by working proactively with lumber suppliers to get certified, Turner was able to procure FSC-certified lumber at a minimal premium while helping to expand the available sources for the product in the Seattle area.

Secrets of Success: Vision and Teamwork

The project team credits its success to a visionary client, common goals and close teamwork. The City carefully selected its team by requiring sustainable building expertise; amongst the City and its' consultants there were five LEED™-accredited professionals in five disciplines contributing to the project. The City further supported the project's success by utilizing the GC/CM approach (General Contractor/Construction Manager), enabling the City to hire the contractor as construction manager early in the project, thus making it possible for the contractor to integrate sustainable building into the process and services from the beginning.

The team's dedication to producing a high-performance green building engendered a high level of collaboration and design integration among its members. Consistent communication was critical as the project continued to change. The team worked together and brainstormed from early in the project, continuing this cooperative and collaborative approach through the end of construction. This effort has provided a durable, attractive, state-of-the-art facility for the City of Seattle, setting an example of how adaptive-reuse projects can not only bring new purpose to old buildings, but they can save on future operating costs while achieving LEED™ Silver and Gold certification.

**The Park 90-5 police support facility has received three awards:**

- Associated General Contractors of Washington 2005 Construction Award for a remodel/tenant improvement over \$5 million
- Associated General Contractors of Washington Willie O'Neil Award for Environmental Excellence
- Pacific Northwest Chapter of the Construction Management Association of America best-managed local public project between \$10 and \$50 million.

For More Info

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Learn more about LEED™ (Leadership in Energy and Environmental Design) at www.usgbc.org/LEED/LEED_main.asp.

Learn more about DPD's role in green building at www.seattle.gov/dpd/sustainability or contact:

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