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Submission Category

- Leadership in sustainability policy
Homes & residential building projects
- Non-residential building projects
Infrastructure projects

Supporting Materials

Project description or leadership activities: Jsmith_Tlee_summary.pdf
Jsmith_Tlee_nomination.pdf
Photography: Jsmith_Tlee_building1.jpg
Jsmith_Tlee_boardwalk.jpg
Jsmith_Tlee_officespace.jpg
Jsmith_Tlee_exhibits.jpg
Other Supporting materials: Jsmith_Tlee_supportingmaterial_award.pdf

Jsmith_Tlee_summary.pdf

Pierce County Council for its role in sustainable development. "Reclaiming Our Resources," the county's 50-year plan, inspired the building, setting the tone for future development.

Jsmith_Tlee_nomination.pdf

Developed by the county council, "Reclaiming Our Resources," Pierce County's (WA) 50-year master plan for future development, sparked the vision of the Pierce County, Washington Environmental Services Building. Council members include Terry Lee (chair), Shawn Bunney, Calvin Goings, Roger Bush, Timothy Ferrell, Barbara Gelman and Dick Muri.

The building sits on a 900+ acre site, much of which has been extensively mined for gravel for more than 100 years, resulting in a barren landscape. Historically, the sight is known as the Steilacoom Gravel Pit. This is the first major building constructed under "Reclaiming Our Resources", an effort that will gradually heal and rejuvenate the entire area by reintroducing native species and incorporating public uses of the site.

Economic Responsibility

The project was completely funded by sanitary sewer use fees collected by the Environmental Services Division from the regional users of the on-site wastewater treatment plant, and was completed for 5.6% less than the architect's final estimate, even after including all change orders. Lifecycle costing and value engineering studies were undertaken at various points to verify that the proposed design strategies were appropriate and economically feasible. The lifecycle cost analysis showed that the mechanical system, including the premium for the raised floor, will pay for itself in energy savings over an estimated five years.

Environmental Responsibility

Extensive daylighting studies led to the use of baffles in the skylights, a large western overhang, and exterior sunscreens on the east façade. A raised-floor air distribution system reduces the size and energy consumption of the mechanical system, improves indoor air quality, provides for future flexibility, and gives individuals direct control of their immediate environment. Nighttime flushing lowers the temperature of the concrete structure by several degrees, resulting in "free" cooling at the beginning of the day.

The material originating from the Steilacoom Gravel Pit is well known among structural engineers as being some of the best concrete aggregate in the world. This fact has resulted in the unanimous decision to use concrete extensively throughout the project, creating a symbolic tie to the historical use of the site. The local nature of the project aided in the design team and Owner's commitment to making it a sustainable project as well.

The variety of concrete material used in the project includes:

- Primary structural system: cast-in-place concrete sheer walls, columns and beams; 2nd Floor: concrete planks;
- Roof framing: concrete planks;

- Interpretive Exhibit Program: Shotcrete site walls (designed to show off the matrix and stratification of gravel found on site); and
- Staggered formed office pods and conference rooms: reinforced concrete provided the structural characteristics and span-to-depth ratios that were critical to creating gravity and lateral structure. The design also gave the office interior more light and made it virtually column free.

The raised floor air distribution system reduces the size and energy consumption of the mechanical system, improves Indoor Air Quality, provides for future flexibility and gives individuals direct control of their immediate environment. Nighttime flushing moves cool night several degrees. This concept, called Fabric Energy Storage, takes advantage of the thermal mass of the concrete structure and provides “free” cooling at the beginning of the day, resulting in significant energy savings over the lifespan of the building.

Stormwater management strategies play an integral role in utilizing stormwater. Beginning with roof scuppers, rainwater drops into a stormwater garden and flows through a series of ponds to a bioswale, which treats the water before it reaches the infiltration pond. Along the route, a flow splitter incorporated in a public plaza routes stormwater through three distinct paths.

Various types of surfacing, including grasscrete pavers, porous asphaltic paving and natural-resin paving, are used throughout the site for public edification. Panels along the paths describe their attributes and relative merits.

Drought-tolerant and indigenous plant material has been planted throughout the site. Irrigation has been incorporated, mainly for initial plant establishment. Rain gauges monitor the moisture and override the automatic timer when irrigation is not needed. Once plants are established, the use of irrigation will be minimized or, if possible, eliminated.

The Environmental Services Division owns and operates the Wastewater Treatment Plant located elsewhere on the Chambers Creek Properties. Therefore, graywater is not used on this project. The owner has opted to educate those using the building about the role of the wastewater treatment plant in their daily lives. The sewage from the building is piped to the plant and the treatment process is described in interpretive displays throughout the project. Visitors are made aware of "what happens when they flush."

In addition, plumbing fixtures automotive sensors activate and shutoff water to prevent the use of excessive amounts.

Additional green strategies that have been incorporated into this project include:

- Runoff reduction
- Water conservation
- Low-water-use fixtures
- Demand for irrigation

- Irrigation systems
- Siting analysis
- Site planning
- Design for materials use reduction
- Design for adaptability
- Pre-consumer recycled materials
- Materials and wildlife habitat
- Visual comfort
- Facility policies for IEQ (non-smoking environment recommended)

Social Responsibility

The project's driving concepts call for a more humane work environment, introduction of natural light, interior vegetation, and views to the exterior. It attempts to make people aware of being part of a greater regional context by developing the "Mt. Rainier" axis through the site. Space planning follows a European office model: No desk is more than 30 feet to a window.

Chosen as an American Institute of Architects Top Ten Green Project for 2004, the enclosed office pods containing the individual offices and conference rooms slash through the open office "tail" of the building and define the various departments while providing visual transparency through the structure.

Photography

Jsmith_Tlee_building1.jpg



Public plaza facing the water, Mt. Rainier is just visible behind the building (10/2002)
Pierce County Environmental Services Building, Pierce County, WA
Echert & Eckert, Inc.

Jsmith_Tlee_boardwalk.jpg



The boardwalk in this photo runs over the stormwater collection area (10/2002)
Pierce County Environmental Services Building, Pierce County, WA
Echert & Eckert, Inc.

Jsmith_Tlee_officespace.jpg



A typical office space (10/2002)

Pierce County Environmental Services Building, Pierce County, WA

Echert & Eckert, Inc.

Jsmith_Tlee_exhibits.jpg



Along the "interpretive walk," educational exhibits, like the one in this photo, are displayed amidst the indigenous plants that have been restored to the area (10/2002)

Pierce County Environmental Services Building, Pierce County, WA

Echert & Eckert, Inc.

Jsmith_Tlee_supportingmaterial_award.pdf (Other Supporting Material)

AIA Top Ten Green Project for 2004. Submitted by Miller|Hull Partnership, Seattle, Washington