

Woodstock Branch Multnomah County Library

Project scope:

One-story, 7,500-square-foot branch library designed to conserve energy and resources

Projected Energy Savings

Expected to use an estimated 27 percent less energy each year than a similar building constructed to Oregon Energy Code.

Earth Advantage Measures

Energy Efficiency

- Energy efficient compact fluorescent and T-8 fluorescent lighting
- Occupancy sensors for lighting control
- High-efficiency HVAC system with direct digital controls
- Increased wall insulation
- High-performance glazing

Quality Indoor Environment

- Daylighting with extended eaves to reduce glare
- Low-toxicity paint
- Natural linoleum flooring
- High-efficiency heating and cooling

Environmental Responsibility

- Water-conserving plumbing fixtures
- Landscaping includes drought and pest-resistant native plants, drip irrigation and minimized lawn area
- Recycling of demolition and construction waste
- Indoor recycling storage
- Mass transit and secured bicycle parking

Resource Efficiency

- Recycled-content building products, including ceiling tiles, gypsum board, aluminum and steel

Awards

Design Honor Award, American Institute of Architects Portland Chapter

When residents of Multnomah County's Woodstock neighborhood visit their new branch library, many of them can't help but linger. The building's award-winning design, natural daylighting and energy efficiency combine to make it a highly comfortable space that invites patrons to browse the library's collection or simply sit down and read a book.

The high quality indoor environment is one of many environmental features that were integrated into the library's design and construction. Project designers followed Portland General Electric's Earth Advantage program standards for commercial construction to help make the building a model of how to use the Earth's resources wisely. Building materials, construction procedures, interior finishes and landscaping materials were carefully selected with the environment in mind.



"The Woodstock Branch Library sets an example of environmental stewardship for the 150,000 county residents who use it annually," says Multnomah County Library Facilities Manager Mike Harrington. "But it also benefits the county by trimming operating costs. We estimate that the building will use 27 percent less energy every year than one built to Oregon Energy Code."

The library's extensive daylighting was made possible by its cantilevered steel frame and supporting columns that are sunk low into the ground. "This design eliminated the need for shear walls, allowing us to introduce an uninterrupted band of clerestory windows along the perimeter," explains Becca Cavell, architect, Thomas Hacker & Associates Architects, Inc. "The entire reading area is bathed in natural light."

High-performance glazing, extended eaves and shading devices keep solar gain and glare to a minimum. Artificial lighting is provided by efficient compact fluorescent and T-8 fluorescent technologies, with occupancy sensors controlling lights in rooms that are used intermittently.

Project Team

Client:

Multnomah County, Facilities and Property Management

Architect:

Thomas Hacker & Associates Architects, Inc.

General contractor:

McCarthy Building Companies, Inc.

Mechanical/electrical engineer:

PAE Consulting Engineers, Inc.

Structural engineer:

Symonds Consulting Engineers

Mechanical contractor:

Brainard Sheetmetal

Electrical contractor:

Oregon Electric Group

Landscape architect:

Mayer-Reed

The 7500-square-foot building is heated and cooled by high-efficiency packaged roof-top HVAC units that have direct digital controls (DDC). "The DDC are tied directly into the county's central energy management system, allowing our facilities crew to remotely optimize HVAC scheduling and performance," says Amy Joslin, Multnomah County energy specialist. "The DDC also allow us to remotely identify problems and often make adjustments without making a visit, further helping the county to trim operating costs."

The county has made recycling a priority at the facility. More than 139 tons of waste was recycled during demolition of the former branch library and construction of the new building. This saved the county \$6,550 in hauling and landfill fees. The library's ceiling tiles are made partially from recycled fiberboard. The gypsum board, aluminum and steel used during construction also contain recycled content. An interior recycling storage area makes it easy for library staff to continue to close the loop on paper and other recyclables.

To enhance indoor environmental quality, the county used low-toxicity paints and wood finishes and selected natural linoleum flooring. A high-efficiency ventilation system with high-quality filtration helps keep indoor air fresh.

The library's landscaping relies heavily on native plants that are adapted to the site soils and climate. An efficient drip irrigation system helps keep water use down. Lawn areas were kept to a minimum. "Native plants are highly resistant to disease and pests," explains Alan Scott, PGE architectural design consultant. "They are less likely to need fertilizer or pesticides, and they require less water."

Multnomah County already is planning to construct other buildings to Earth Advantage program standards. "The Earth Advantage program offered us a convenient way to meet the county's environmental and energy objectives," says Facilities Manager Mike Harrington. "Using an established and recognized utility program helped us feel comfortable with the decisions we were making about our building and its use of resources."



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