Case Study

To find more information on sustainable building, including case studies and an overview of the City's Sustainable Building Program, visit ***www.seattle.gov/dpd/sustainability****.*

the key tower remodel

a City of Seattle LEED™ project

key tower

—part of the new Civic Center

—located at 700 Fifth Avenue

—remodel designed to achieve a LEED™ Silver Rating

Key Tower*, the future home of nearly 70 percent of the City's downtown workforce, has been undergoing a floor-by-floor renovation since 2000. This remodel includes an extensive reworking of the entrance to facilitate accessibility, create open space landscaped with native plants, and tie the project in with the Civic Center. The Civic Center is being designed to centralize access to as many public services as possible.

In line with the City's Sustainable Building Policy, the Key Tower Remodel, has been designed to achieve a LEED™ Silver Rating. The Design Team's primary goals include:

- reducing total energy consumption
- enhancing building occupant's quality of life with natural daylight and views, better thermal comfort, and good indoor air quality
- salvaging and reusing existing building materials wherever possible
- selecting recycled-content and rapidly renewable materials

Energy Consumption Being Minimized

Systems & Controls. The existing heating and air conditioning system will be retrofitted with a new Direct Digital Controls (DDC) system to monitor building systems, control space heating and cooling equipment during occupied periods, and restrict use during unoccupied periods. The building will be commissioned to ensure that the building systems perform interactively at optimum efficiency. Estimated savings of 467,000 kWh (or $27,093 per year) qualified the retrofit for the Seattle City Light energy savings incentive program.

Lighting. The Design Team has developed three core strategies for lighting:

1) Installing automatic nighttime shutoff between 6 p.m. and 6 a.m.
2) Installing motion driven occupancy sensors in rooms with occasional use that automatically turn lights off when the room is empty.
3) Placing the lighting fixtures located within the first 15 feet of the building perimeter on separate controls to allow lights in the perimeter zone to be turned off when natural daylight is sufficient.

Additional details on energy saving activities included in the Key Tower remodel can be found in the *Penguin Flipper* and *Key Tower Base Remodel* case studies available in the Department of Planning and Development's Public Resource Center on the 20th floor of Key Tower or online at **www.seattle.gov/dpd/sustainability**.

**In 2004, Key Tower became Seattle Municipal Tower.*

Conference Center Showcases Green Building Materials

The City has created a conference center and public gathering space on the 40th floor of Key Tower. This high-traffic area is an ideal site to showcase the use of green building materials planned for the Key Tower remodel. Some of the products and materials featured in the City Conference Center are:

- Wall panels, shelves and conference tables made from bamboo. Bamboo is harvested every four years. It is hailed by some as an alternative to wood because of its durability, strength, and rapid growth—and because it does not need replanting after harvesting.
- Straw board, made from waste wheat straw, used as the substrate for casework. Straw board uses non-toxic isocyanurate resins (MDI) and has superior properties of moisture swell, elasticity, internal bond, density, and strength.
- Tree-free wall-covering made of rice paper with 50 percent recycled newspaper content. It does not use any pigments containing heavy metals, lead or cadmium as stabilizers; contains no fluorocarbons, solvents treated with chlorine, or volatile softeners; and does not emit any vinyl chloride. It can be composted at the end of its useful life.
- Fabrics covering the chairs are made from recycled post-consumer and post-industrial plastics such as soda bottles, post-industrial seconds, and x-ray film. Because this product is made of a single fiber type, it is also easily recycled at the end of its useful life.
- Most of the carpet used contains 25 percent recycled nylon, reclaimed from old carpets. The carpet backing contains 50 percent recycled thermoplastic. Both are 100 percent recyclable; at the end of their useful life the manufacturer will take back their product, recycling into new carpet and backing.
- Paints selected to provide a healthier indoor air quality for the occupants, which meet standards for low or no-VOC (volatile organic compounds). Paints are a source of indoor air pollution, emitting VOCs and often containing toxic substances. VOCs are chemicals that evaporate into the air and affect the ozone layer. They are also linked to a variety of human health problems.
- Existing materials on the 40th floor were viewed as materials that could be salvaged and reused rather than thrown away as waste. This approach resulted in the reuse of: 100 percent window blinds, 100 percent ceiling tiles, 90 percent doors, 90 percent lighting, 60 percent HVAC equipment, 25 percent walls. In addition, 5 percent of the materials used were salvaged from other projects in the building.

To learn more about the Key Tower remodel, visit the City's Sustainable Building website at **www.seattle.gov/sustainablebuilding/cityprojects.htm.** To learn more about DPD's involvement in sustainability goals, visit **www.seattle.gov/dpd/sustainability**, or contact:

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recycled fabrics
recycled carpet

"The City Conference Center is a fine example of our sustainable building policy. It demonstrates that recycled and renewable materials can be beautiful as well as good for the environment and it illustrates that sustainable design is mainly about creating good design."

—Councilmember Peter Steinbrueck

bamboo wall panels

tree-free wall covering

Printed with soy-based ink on totally chlorine-free paper made with 100% post-consumer fiber.