

## **Sustainability Fact Sheet for Kelley Engineering Center Oregon State University, Corvallis, Oregon**

The Kelley Engineering Center, centrally located on the Oregon State University campus in Corvallis, is the physical centerpiece for the College of Engineering's drive to become one of the nation's top-25 engineering programs.

The new building's design is centered on communication, innovation and responsible environmental design. It will house wireless classrooms, flexible laboratories, office clusters, and common areas that encourage communication including "plug-and-learn" alcoves built into spaces often underutilized in traditional building designs and an E-café where faculty, staff, students, and industry partners can gather to share ideas.

When it opens in summer 2005, the Kelley Engineering Center will be home to the rapidly growing School of Electrical Engineering and Computer Science, providing labs, classrooms, and offices for over 360 professors and graduate students. It will be the "greenest" academic engineering building anywhere in United States.

The four-story, 153,000-sq.ft., \$45 million building will feature extensive sustainable "green" design elements, used to educate students and others about sustainability and renewable energy issues, before, during, and long after construction.

OSU is seeking a US Green Building Council **LEED** (Leadership in Energy and Environmental Design) Gold (2.0) rating. The Kelley Engineering Center's numerous "green" building elements include many features typical in LEED-rated buildings:

- **Natural ventilation** will provide interior spaces with fresh air. An extensive heat recovery system will recover more waste heat from ventilation than standard requirement, and will pay itself off in 3.8 years.
- **Daylighting** from a central atrium and windowed walls will supply classrooms, labs, and offices with natural light, cutting lighting energy costs up to 40 percent.
- **Total energy use will be reduced** by at least 55% over Oregon Energy Code, based on energy modeling to date.
- **Earth-friendly concrete** will reduce CO2 emissions associated with cement production.
- **Bio-planters** around much of building perimeter will use runoff for irrigation and provide outdoor seating.
- **Bicycle parking, showers and close access to Corvallis busses** will encourage alternative transportation usage.
- **Local construction materials** will make up at least 20% of building materials, reducing transportation costs and environmental impacts.
- **Recycled building materials** will be used extensively throughout the project.
- **Low-toxicity finishes, fiberboard, and flooring** will minimize VOC off-gassing and improve indoor air quality for the life of the building.
- **The white roof** will be Energy Star compliant with high emissivity and high reflectivity, reducing heat absorption by the roof.

The Kelley Engineering Center will also incorporate some innovative and unique features not typical in today's buildings. Such systems and components include:

- **A rooftop solar system** will be used for electrical generation and hot water production. Water heated by a solar collector will flow to sinks and showers in the building. Additionally, a grid tied 2400-watt photovoltaic system will offset some of the building's electrical use with clean, renewable resources.
- **A 16,500-gallon rainwater collection system** will irrigate native landscaping after running through bio-planters to remove unwanted contaminants and, more uniquely, provide water to flush toilets and urinals. The combination of water-efficient fixtures and rainwater collection system will allow a reduction in water usage by 65%.
- **Permeable surfaces** are used on surrounding grounds rather than paved hard surfaces, to mimic natural drainage and minimize need for runoff water control. Individual pavers will eliminate concrete surfaces.
- **Operable windows** and an underfloor air distribution system will allow for more individual control of occupied space to promote the productivity, comfort and well-being of building occupants. Windows and interior transoms are tied to climate controls so systems respond according to user inputs (open window = heat shutdown).
- **It is a goal to divert 90% of construction project waste** from landfills. As of October 2003, the project had diverted 99% of construction and demolition waste from landfills.
- **OSU encourages process responsibility:** the contractor, Skanska, has implemented an environmental management system that is **ISO 14001**-certified. Skanska implements this standard at all jobsites, not only LEED jobs.
- **It is planned that the building will be used as a learning tool** to allow students, faculty and visitors to experience successful 'green' processes, features and systems. Signage, tours, curriculum, real-time read-outs from monitoring equipment, and an interactive website will make the Kelley Engineering Center a unique point of interest for year to come.