

## PRINCIPLE 10



## SUSTAINABLE DEVELOPMENT



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### Principle

The development, repair, maintenance, and operations of the University of Oregon today have an impact on the local environment and the ability of future generations to thrive.

**All development, redevelopment, and remodeling on the University of Oregon campus shall incorporate sustainable design principles including existing and future land use, landscaping, building, and transportation plans as described in the principle refinement below.**

### Pattern Summary

(Refer to “Principle 11: Patterns” on page 91 for the complete pattern text.)

- Bike Paths, Racks, and Lockers
- Campus Trees
- **Flexibility and Longevity**
- **Local Transport Area**
- Materials and Operations
- **Operable Windows**
- Pedestrian Pathways
- Peripheral Parking
- **Quality of Light**
- Road Crossings
- **Site Repair**
- **Sustainable Development**
- **Use Wisely What We Have**
- Tree Places
- Water Quality
- **Wings of Light**

Additional *Campus Tree Plan* Patterns:

- Environmental Mitigation
- Healthy and Vital Tree Canopy
- Long-lived Tree Sites
- Site-specific Conditions
- Tree Replacement Strategies

### Principle Refinements

All construction projects shall adhere to the university’s **Oregon Model for Sustainable Development** described on the following pages.

Also refer to the following related principles:

- Principle 2: Open-space Framework (in particular principle refinements addressing wetlands, wildlife habitats, and waterways; the selection of plant materials and the *Campus Tree Plan*), and the Campus Outdoor Lighting Plan.

- Principle 9: Transportation and related patterns.

- Principle 12: Design Area Special Conditions (in particular for areas with wetlands, wildlife habitats, and waterways.

**Principles 2 and 12 are particularly relevant to maintaining and enhancing the ecosystems of the campus.**



*Many Nations Longhouse bioswale and green roof*



*HEDCO Courtyard, 2009.*

## University of Oregon Model for Sustainable Development

The University of Oregon Model for Sustainable Development addresses the unique aspects of campus buildings and landscapes by focusing on what matters most: ENERGY, WATER, AND PEOPLE. In addition, the University of Oregon has made a commitment for capital projects to achieve LEED Gold.

**This Model focuses on capital projects. It is one of many strategies the university has implemented to achieve its overall sustainability goals.**

All capital projects as well as the surrounding landscape improvements within the project boundary shall adhere to the University of Oregon Model for Sustainable Development.

The principle should be reevaluated:

- At each revision to the Oregon Energy Code;
- At the release of each new version of LEED; OR
- No later than five years after the last policy reevaluation.

### ENERGY, WATER, AND PEOPLE GOALS

The energy, water, and people goals are applicable to the following capital projects:

1. New buildings, of 10,000 square feet (sf) or more of heated or cooled floor area;
2. Building additions of 10,000 square feet (sf) or more of heated or cooled floor area. Additions must have a clear separation of all systems and spaces;
3. Whole building renovations of 10,000 square feet (sf) or more of heated or cooled floor area, which:
  - i. Upgrade the existing mechanical systems for the entire building; AND
  - ii. Significantly affect at least one of the following energy systems: interior lighting or building envelope.

Projects that do not meet the criteria listed above should strive for excellence in the energy, water and people categories. These projects should make use of the university's documented and proven sustainable design strategies implemented on other capital projects.

## ENERGY GOAL: Optimize and Mitigate

The university seeks to optimize the energy efficiency of all new buildings and mitigate any increases in total campus energy use from all capital projects.

All capital projects are required to achieve a state-of-the-art energy performance level—an Advanced Energy Threshold. In addition, the university tracks energy usage and will undertake cost-effective energy-savings measures as opportunities arise with a goal of mitigating increases in total energy use.

### ADVANCED ENERGY THRESHOLD (AET)

Capital projects (as defined above) must meet the Advanced Energy Threshold, which is defined as 25% more efficient than the 2014 Oregon Energy Code requirements.

A standard energy modeling method (e.g., those acceptable for LEED documentation) should be used to compare the designed building to a baseline building and demonstrate that the AET is met.

The AET will ramp up to a higher standard over time as recommended by a small council of knowledgeable individuals led by Campus Planning and Facilities Management.

To achieve and go beyond the required AET and to study ways of achieving net zero energy use for the building, projects are encouraged to use an integrative design process.

## WATER GOAL: Improved Quality of Stormwater

The university will improve the quality of campus stormwater emitted into the region's waterways by focusing on campus areas that contribute the most to the degradation of water quality—campus streets and parking lots. All capital projects are required to treat the equivalent amount of stormwater runoff as required by city code; however, some of the areas treated will be shifted outside the project site to address relatively low water quality campus areas—streets and parking lots.

All capital projects will treat stormwater runoff from a portion of an existing UO-owned street or parking area instead of treating the equivalent amount of relatively clean, on-site, impervious surfaces, primarily defined as pedestrian surfaces such as sidewalks (especially those that do not drain directly into a stormwater pipe). The same amount of impervious surface will be treated, but the dirtier surfaces will receive greater attention.

For example, if a project site has 1,000 square feet of sidewalks that must be treated, the project would not be required to treat this area; instead, it would be required to fund 1,000 square feet of stormwater treatment for an existing campus street or parking lot.

The cost to treat existing streets and parking areas is determined by establishing an average cost/square foot. The project is not responsible for identifying and implementing the off-site stormwater measures. Funds are deposited into a central fund earmarked for stormwater treatment measures. Facilities Services manages the fund and appropriately implements measures needed to equal the required stormwater treatment from all development projects.

Projects should be designed to accommodate the potential to treat all of their stormwater in the future.

This goal requires coordination with the city (and in some cases may preclude implementation of this Principle).

### **PEOPLE GOAL: Sustain Campus Habits and Foster Social Equity**

The university ensures sustained energy conservation habits. All capital projects are required to develop a plan and implement educational/training opportunities about the building and/or landscape in order to create and sustain a shift in occupant behavior.

All capital projects will fund educational/training opportunities about the building and/or landscape with a goal of shifting occupant behavior to support energy use and other goals. Opportunities will consist of the following:

- Training sessions and distribution of informational materials designed for faculty and staff occupying the new building as well

as for building operations staff during the first two years of occupancy. Training may be in the form of a class or research project.

- An electronic dashboard program that provides real time energy use and other permanent, integrated, educational elements, such as an informational kiosk or a series of plaques, highlighting key sustainable building and landscape strategies with a focus on behavior.

It is expected that implementation of the educational/training components will cost a minimum of \$35,000 (about \$10,000 for the training and distribution of materials and \$25,000 for the permanent features). Smaller buildings or low-occupancy buildings, however, may require a smaller investment.

**Foster Social Equity:** Social equity is a foundational Principle of sustainability. As the university seeks to ensure equity across all social categories, all capital projects are required to foster and promote social equity and human health. Examples of achieving this goal include:

- Maintaining high levels of indoor environmental quality (IEQ) to benefit the health and comfort of the building's inhabitants;
- Displaying sample sources of a building's construction labor and materials production, extraction and processing;
- Following Principles of universal design to ensure equity in building use and accessibility beyond what is required by code;
- Providing gender inclusive restroom facilities so that all individuals have access to restroom facilities; and
- Providing access to functional, private, safe, and clean lactation rooms across campus.

### **LEED GOAL: Gold Certification**

The LEED goal is applicable to the following capital projects:

1. New buildings of 10,000 square feet (sf) or more of heated or cooled floor area.
2. Building additions of 10,000 square feet (sf) or more of heated or cooled floor area where the added floor area is more than 60% of the resulting total gross square footage; AND
3. Major building renovations of 10,000 square feet (sf) or more of heated or cooled floor area that affect more than 60% of the gross

square footage in the building and include upgrades to mechanical equipment serving the entire building.

Projects that do not meet the criteria listed above should strive for excellence in sustainable design. These projects should make use of the university's documented and proven sustainable design strategies implemented on other capital projects.

All capital projects that meet one of the criteria (1-3) listed above must achieve Leadership in Energy and Environmental Design (LEED) Gold certification. The certification process verifies that the project achieved a nationally recognized sustainability standard (LEED Gold) and demonstrates that the university is committed to sustainable design.

### **ADJUSTMENTS:**

If a highly unique circumstance arises, a project may request an adjustment to a requirement to resolve an unreasonable hardship. For example, specialized building types may be uniquely challenged with meeting the AET.

Adjustments will be reviewed by the Campus Planning Committee as part of the standard project review process. The requester must clearly demonstrate the following:

1. Requested Adjustment: The requested adjustment (e.g., a lower AET or LEED level, or no LEED Certification process) must:
  - be clearly defined,
  - be justified as described in #2 below, and
  - demonstrate that the overall intent of the Model is still met.
2. Reason for the Adjustment: The circumstance must be highly unique and create an unreasonable hardship. Evidence of undue hardship must be thoroughly justified, which, at a minimum, includes a full assessment of building components, energy use, and associated costs that would have been necessary to fully meet the affected requirement.