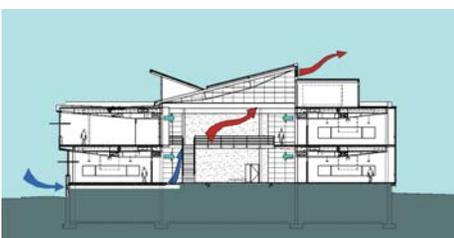


DESIGNED FOR  
LEED  
COMPLIANCE

# technology classroom building portland community college

portland, oregon

The unique winter garden creates a year-round tempered gathering space. This space is warmed in the winter by sunlight, while a portion of the return air ordinarily exhausted to the exterior from the conditioned classrooms at the perimeter is harnessed to provide the space with partially conditioned air without consuming additional energy. Passive ventilation and carefully oriented glazing keeps summer temperatures within a few degrees of ambient.



## a case study in sustainable design

### Sustainable Sites

- The building footprint is sculpted to preserve a grove of fir and deciduous trees while reinforcing the occupants' connection to the natural environment.
- The unique organization of program elements sensitively responds to the sloping site while maximizing potential for natural daylight.
- The creation of a wintergarden brings a living ecosystem into the heart of the building.
- A lush interior garden including species of timber bamboo graces the wintergarden along with a re-circulating water feature providing a sense of calm and relief from the urban campus environment.
- High reflectance roofing and tree shaded paved surfaces reduce the temperature differences between developed and undeveloped areas.

### Water Efficiency

- Native plants are used to enhance the natural landscape, and water-efficient landscaping strategies are employed to reduce impact on the natural microclimate.

### Energy and Atmosphere

- The naturally conditioned wintergarden serves as a tempering environment to the mechanically conditioned program spaces at the perimeter, substantially reducing heating and cooling loads.

- A portion of the return air ordinarily exhausted to the exterior is recovered and returned to the wintergarden, partially conditioning the space without consuming additional energy.
- The glazed wintergarden maximizes daylight opportunities, reducing energy loads from electric lighting.
- A passive re-circulating water feature in the wintergarden serves as a source of evaporative cooling for summertime operation, reducing sensible air temperatures while enhancing the quality of the indoor environment.

### Materials and Resources

- Interior finish materials and adhesives were selected based on a high level of recycled material content and low embodied energy as a result of sustainable manufacturing processes.
- Construction waste was carefully managed to incorporate recycling of excavated asphalt paving, and re-use of harvested wood for campus academic programs.

### Indoor Environmental Quality

- Integrated design of the wintergarden space, shading devices, light shelves and ceiling treatment provide daylighting and views in the classrooms and administrative spaces.
- User controlled operable windows in concert with computer controlled louvers allow substantial natural ventilation of the building.
- Interior finish materials and adhesives were selected to ensure excellent indoor air quality, minimizing off-gassing.



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