

# BUILDING IN HARMONY WITH THE ENVIRONMENT: MAIER HALL, USA

**PROJECT:**  
Maier Hall – Peninsula College

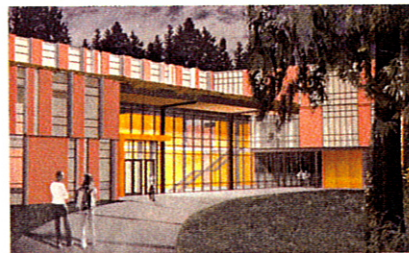
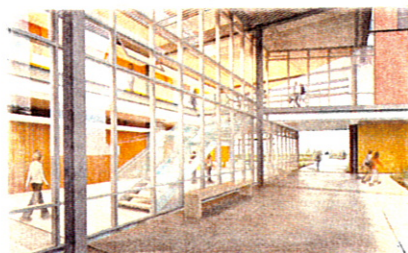
**LOCATION:**  
Port Angeles, Washington

**LIGHTING DESIGN:**  
Candela, USA

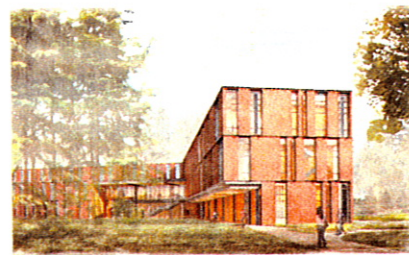
Maier Hall is sited harmoniously within the complex landscape of its site – which includes virgin forests, wetlands, and an ecologically sensitive ravine – all adjacent to the college campus. It serves as an edge to the existing campus, and as gateway to the wetlands and forest to the south. An open-air breezeway allows students to pass through the building from the campus to the forest and leads them to a viewing platform at the wetland edge. The building, currently under construction, features extensive use of natural light and ventilation, bringing students into direct contact with the unique environment of the campus.

Maier Hall is shaped by the varied perspectives and experiences of not only the architectural design team, consulting engineers and specialists, but also its numerous owner and user groups. Design commenced with an Eco-Charette that included the entire design team and members of the college. The project went through two major schematic building design phases as the team developed an understanding of the importance of existing site features.

The design team's concept began as an atrium building, rectangular in plan and elongated east to west to maximise structural and space planning efficiencies. This plan was also ideal for solar orientation and natural ventilation. From that baseline of maximising sustainability, additional layers of site information were overlaid over that initial concept and began to reshape the footprint. To save a grove of mature trees



RIGHT: Early massing and fenestration study models were used to develop the solar and orientation strategy. These were followed by detailed daylighting analysis with large scale physical models.



Maier Hall is shaped by existing natural and man made patterns.

on campus, the design team developed the current “L-shaped” scheme. While less efficient in terms of space planning, the new scheme maintains successful daylighting and natural ventilation systems, and minimises the impact on existing natural features of the site.

## Harvesting natural light

Through the use of geothermal energy, natural ventilation, extensive daylight harvesting, and careful attention to fenestration relative to solar exposure, Maier Hall will meet the 2010 target of the Architecture 2030 Challenge to reduce the consumption of fossil fuels by 60 per cent kBtu/sf/yr.

Space planning and building massing are critical to achieving energy efficiency at Maier Hall. The following approaches were taken to maximise the use of passive solar energy:

- The arts wing is elongated in the east-west direction to capitalise on

the even light and minimal heat gain available from broad north and south exposures.

- The performance hall, where daylight is undesirable, occupies a large portion of the north wing, which, due to site constraints, has broad east and west exposures.
- The 80' tall grove of trees immediately west of the north wing shades the classroom and office spaces in the late afternoon when harsh west light is problematic.
- The eastern exposure benefits from shade provided by the forest to the east.
- Through extensive testing with the Integrated Design lab, the design team developed a system of horizontal and vertical shading devices at windows subjected to direct sunlight.
- Skylights are used to balance daylight in large classrooms such as art studios and all public areas. ■