



LEED Gold

City College of San Francisco Multi-Use Building

SAN FRANCISCO, CALIFORNIA

Services

Mechanical
Sustainable Design
Energy Services
Fire/Life Safety

FAST FACTS

Design Architect
Pfau Long Architecture

Executive Architect
VBN Architects

General Contractor
Lend Lease

Completion
February 2010

Building Size
102,000 sf

Project Cost
\$47 million

Contacts
Peter Pfau, Principal
Architect / Pfau Long
Architecture / 415.908.6408
Tim Craig, Principal
Architect / VBN
Architects / 510.763.1313
Dennis Wong, Project
Executive / Swinerton
Management &
Consulting / 415.617.1451

Interface Engineering collaborated with the college and the design team to utilize the building form and architecture as the predominant source to meet cooling demands for this new 102,000 square foot academic multi-use facility. The design team explored several iterations of the building envelope, floor plan and roof layout to naturally ventilate and passively cool the entire building.

Advanced engineering tools were employed by Interface’s team to determine the design’s viability and to assist in modifying the building envelope to make the system successful.

The team delivered this energy efficient facility at no additional cost when compared to a standard building with traditional HVAC systems. The building, which houses classrooms, administrative offices, specialized laboratories, computer lab, study spaces, childcare/family center, meeting rooms, café, and other spaces for student development, has been operational since August 2010, is outperforming client and design team expectations.

Project Features

- » The building takes advantage of the cool temperatures and on site wind pressure of its natural surroundings, only using mechanical cooling during peak seasonal extremes. Natural ventilation from the perimeter rooms exhausts out through the glazed skylights at the roof level.
- » This “breathing building” features a central atrium that functions as the building’s “lungs” to organize circulation and facilitation of natural ventilation to serve all occupied spaces.
- » The building’s lack of air handlers or air distribution mechanical rooms reduces

the need for approximately 2-3,000 square feet of penthouse or mechanical room space, saving the client significant net to gross square footage.

- » The shaft space is limited to only 20 square feet of the building area. This is approximately 10 percent of the shaft space required for a similar traditionally-designed building, saving the client significant net to gross square footage.
- » In-slab hydronic heating and cooling distributes heat efficiently, cools the building during temperature extremes and reduces energy costs.
- » Dual purpose atrium smoke removal system and building integrated photovoltaics further reduce the building’s energy consumption.

On Target to Save Energy

The team’s energy model predicted that the building would use over 40% less energy than a building designed to code. Now that the facility is occupied, Interface is tracking the building’s energy consumption to compare the energy model with actual performance.

- » Based on five months of utility bills, the building’s energy use is performing as designed, modeled, and predicted.
- » Despite 2011’s record high temperatures in August and record cold temperatures in December, the building’s energy use has averaged a low 70,080 KWH per month.
- » The annual Energy Use Intensity (EUI) is 26.05 kBtu per square foot.

Photography: Bruce Damonte



(Above) Interior ventilation louvers rather than traditional ductwork are a source of air conditioning. (Right) Advanced engineering tools were employed by Interface's team to determine the design's viability and to assist in modifying the building envelope to make the system successful. (Below) The building's roof features natural ventilation stack pressure relief vents.

