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SUSTAINABLE CCSF MULTI USE BUILDING

BY PETER PFAU, NOVEMBER 15, 2012

The annual GreenBuild convention is in San Francisco this week. I'm honored to be discussing one of our projects at a panel on Thursday. The topic is an academic building we completed two years ago for the City College of San Francisco, which received LEED Platinum 2011, and I'll be talking with Hormoz Janssens from Interface Engineering, and Bruce Berardi of Lend Lease.

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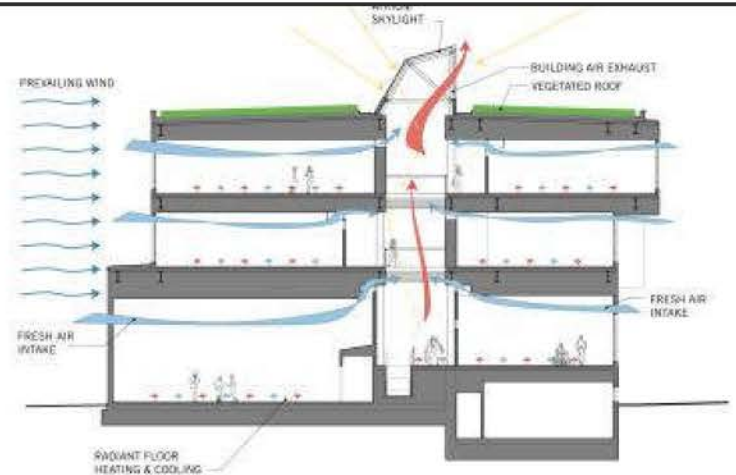




At more than 100,000 sq. ft., the CCSF Multi-Use Building is the largest applications of entirely passive heating and cooling. 18 months since its opening, we now have abundant performance and are pleased at how well it's exceeding expectations. Here's how it works: Situated close to the Pacific Ocean, we took full advantage of the prevailing on-shore breezes, thereby providing passive, natural ventilation. Additionally, the five-story building manages temperature modulation using hydronic heating and cooling provided by a geothermal source heat pump, which feeds off a series of on-site hydronic wells. The geothermal plant in the basement uses those the below ground pipes and these wells to produce both hot and cold water, effectively harnessing the temperature difference in the earth. The water pumped into the well returns at a different temperature and this temperature difference is harvested by the heat pump. This then is used to create controlled temperature water that is then circulated through the concrete floors on each floor to create either heating or cooling. The result is a steady state, comfortable temperature throughout the building. Classrooms are positioned either side of a full-height and sky lit central atrium that acts as the building's "lungs" and a source of natural daylight. Fresh air from each classroom exits into the corridor spine, flows upward and exits through digitally controlled rooftop vents. This system completely eliminated the need for any conventional air-conditioning system.

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A variety of system details ensure the building's long-term performance, including sensors to monitor temperature and air flow and CO2 on a room-by-room basis; custom louvered apertures to vent and careful seals for both air and sound separation. The result is a building that is 100-percent naturally ventilated (with exception for bathrooms). To address noise concerns, we developed a series of sound-buffering strategies through choice of materials, and ducting to come up out of a room and then return downwards. Other sustainable elements for the building include low-emissivity (Low-E) window glazing to reduce heat loss and transfer; a vegetated roof that reduces storm water runoff; and an integrated photovoltaic canopy on the south side to generate electricity. The building recently received a LEED gold certification.



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a.m. If you can't make it, I've posted a few photos so you can get a visual tour of the building, and more details are in on the project section of our website.



Category : **Sustainable Practices**

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