Location #1

BUILDING USER INTRODUCTION

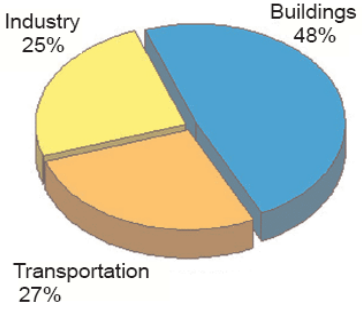
The Health and Wellness Center

Introduction

Lane's Health and Wellness Building was designed as a healthy, sustainable building. It received a "gold" rating from the U.S. Green Building Council's Leadership in Energy and Environmental Design green building rating system. The LEED rating system provides points for various aspects of building design and construction in the areas of siting, energy use, water use, indoor environmental quality, materials and resources, and innovation.

Location #1

Muir Glacier August 1941 August 2004



US Energy Consumption

Many scientists give us 10 years to be well on our way towards global greenhouse gas emission reductions in order to avoid catastrophic climate change.

Data from the US Energy Information Administration illustrates that buildings are responsible for almost half (48%) of all energy consumption and greenhouse goal (GHG) emissions annually; globally the percentage is even greater. Seventy- six percent (76%) of all power plant generated electricity is used just to operate buildings. Clearly, immediate action in the Building Sector is essential if we are to avoid hazardous climate change.

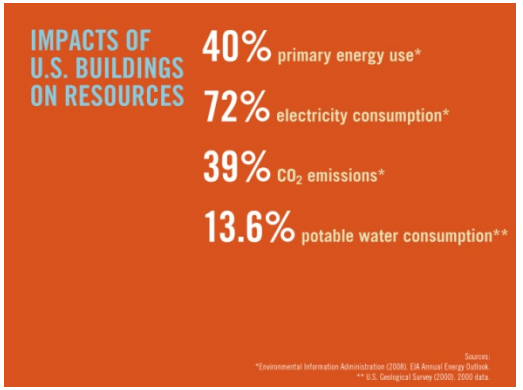
The 2030 Challenge- Architecture 2030

Architecture 2030 is an environmental advocacy group formed in response to rapidly accelerating climate change. The 2030 Challenge addresses the crisis situation surrounding the 'Building Sector' as a major source of de-mand for energy . Stabilizing and reversing emissions in this sector is the key to keeping global warming within 1°C of today's levels.

Why build green?

Buildings are responsible for almost half of all energy consumption and greenhouse gas emissions in the U.S. Globally, the percentage is even greater. Seventy-six percent of all power plant generated electricity is used just to operate buildings. Clearly, immediate action in the Building Sector is essential if we are to minimize disruptive effects from climate change.

In addition to saving energy and reducing greenhouse gas emissions, green buildings also save water, use fewer materials, use recycled and rapidly renewable materials, and have healthier indoor air.



Location #1

BUILDING USER INTRODUCTION

The Health and Wellness Center

Lane Community College

SRG PARTNERSHIP INC

ARCHITECTURE PLANNING INTERIORS

Renewable Energy

Standing here in the front courtyard, we can see many of this building's green features.

- Look behind you to the parking lot to see the large solar array. This is our solar station which is feeding electricity to Building 30 and other buildings in the vicinity. This solar array provides over 12% of the energy needed for this building. The array also provides solar-powered charging for electric vehicles.
- Now look to the roof to see solar thermal panels that provide domestic hot water & some heating water.

Location #1

BUILDING USER INTRODUCTION

The Health and Wellness Center

Lane Community College

SRG PARTNERSHIP INC

ARCHITECTURE PLANNING INTERIORS

Heat Island Effect

- The roof of the building earned the project a LEED credit for reducing heat island effect. Dark colored non-reflective roofs increase heat gain in a building and the surrounding area. The roof on this building minimizes the heat island effect because it is light colored and reflective. To understand the heat island effect, imagine the difference between standing in the middle of a black asphalt parking lot versus standing in a grassy meadow on a 90 degree day.

Location #1

Materials and Resource Use

- 21% of the amount spent on materials for this project was spent on locally harvested and manufactured products including the structural steel, rebar, concrete, skylight aluminum, and roof board.
- 20% of the amount spent on materials for this project was spent on products with recycled content. The exterior trash receptacles that you see here contain recycled content and recycled glass accents the concrete in this plaza.

Location #2

Stormwater Quality

•The rain garden to your left provides natural landscaping that reduces stormwater run-off and filters out pollutants. The scuppers with the rain chains provide a dramatic visual affect as the water travels from roof top to garden.

•The rain gardens around this building capture and treat 90% of the rainfall that falls on the roof of Building 30 and on the grounds surrounding the building.

•The conventional method of treating rain that falls on a building site is to provide roof and storm drains that pipe water to a nearby water way. With this method, any pollutants that may be on the building site are plumbed straight to the water way.

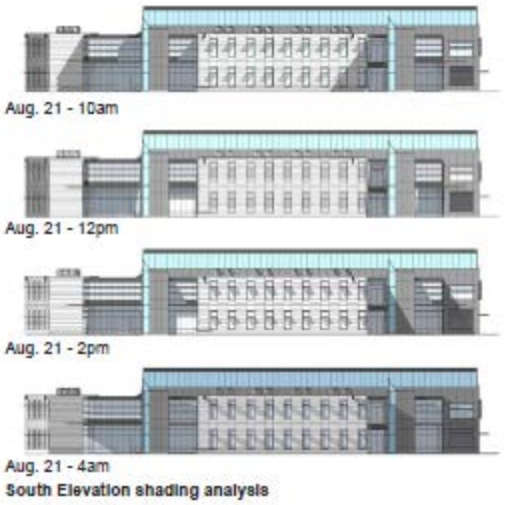
•This buildings rain garden's remove pollutants because the garden allows the rain to slowly infiltrate into the ground where natural biological processes breakdown the pollutants and clean the water. The water is also aloud to take a more natural path into the ground rather than being artificially piped away.

Location #2

Landscaping

- Native and adaptive plants are used around the building to improve wildlife habitat and minimize the need for irrigation and herbicides
- The landscaping around this building uses at least 50% less than more conventional landscaping and earned the project the LEED credit for “Water Efficient Landscaping.”

Location #2

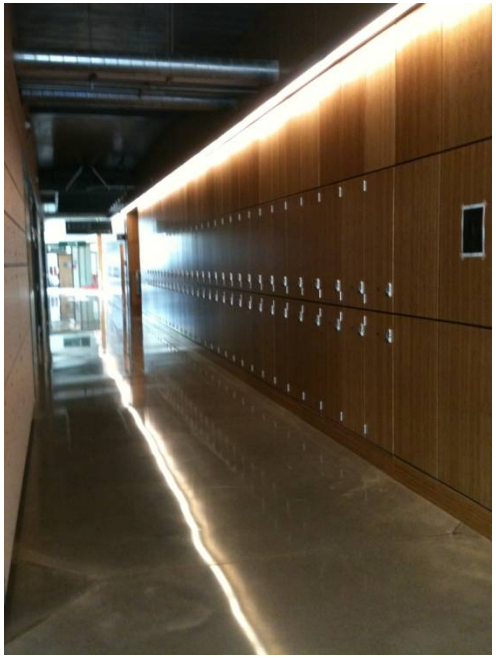


South Elevation shading analysis

Energy Efficiency

Notice that the windows have a horizontal shade. It is called a “solar shade.” These solar shades save energy by reduce solar heat gain and maximize daylighting throughout the building. The shades change the direction of the sunlight so that instead of sunlight going directly into the window causing glare issues and heat inside, the sunlight bounces in at different angles providing light with less glare and heat gain.

Location #3



Life Cycle Costing

You will see throughout the tour that this building was designed to reduce life cycle costs including energy and water costs. Durability of materials was also a factor. The longer something lasts, the less frequently you have to replace it. Leaving a bare polished concrete was not only a stylish choice for this project, but also one that reduced the upfront material cost of having to place a second type of flooring on top of the concrete and the concrete floor will last forever.

You will also notice that there are no drop ceiling tiles in this hallway to hide the piping and cabling that travels through the building. This decision saved money & resources.

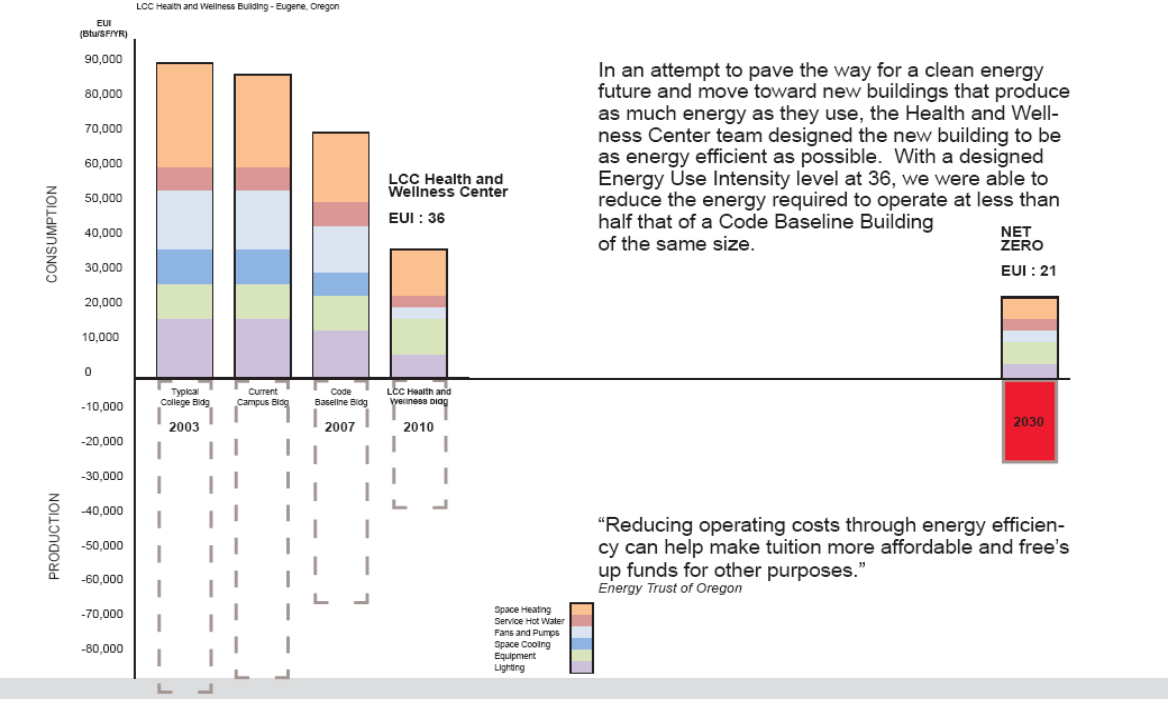
Location #3

Materials and Resources

Some other examples of sustainability features in this hallway include

- The stairs and benches are made from reclaimed timber.
- The hallways contain waste stations for glass, metal, plastic, paper, and garbage. There are no free-standing trash cans in building.
- The wall panels and locker doors are made from bamboo which is a rapidly renewable material

Location #3



In an attempt to pave the way for a clean energy future and move toward new buildings that produce as much energy as they use, the Health and Wellness Center team designed the new building to be as energy efficient as possible. With a designed Energy Use Intensity level at 36, we were able to reduce the energy required to operate at less than half that of a Code Baseline Building of the same size.

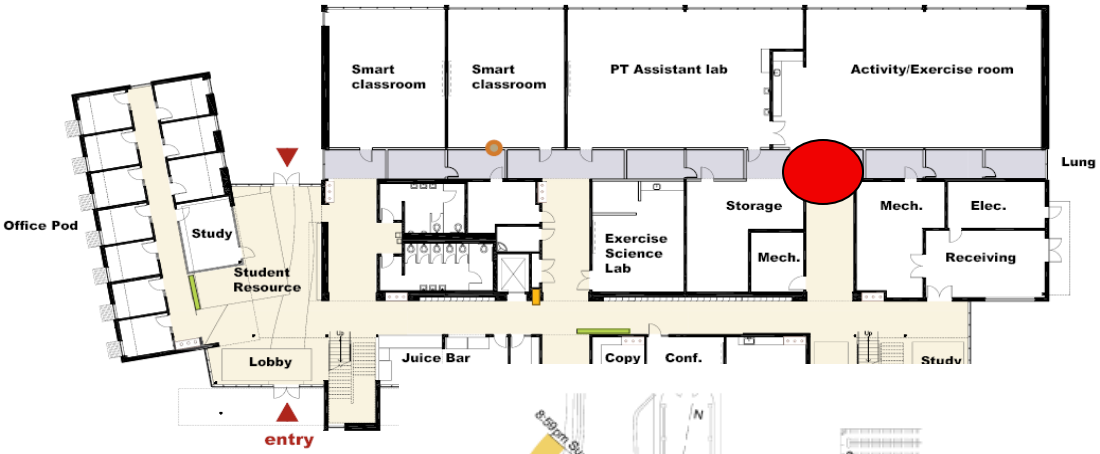
"Reducing operating costs through energy efficiency can help make tuition more affordable and free's up funds for other purposes."
Energy Trust of Oregon

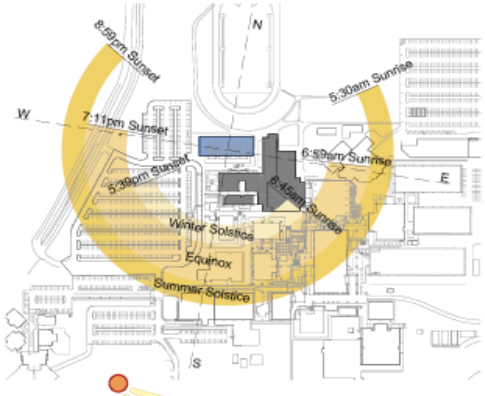
Energy Efficiency

Building 30 uses about half of the energy of a traditional building. This saves the college money on utilities and reduces our greenhouse gas emissions.

Mild weather in the Willamette Valley makes it easier to design energy efficient buildings.

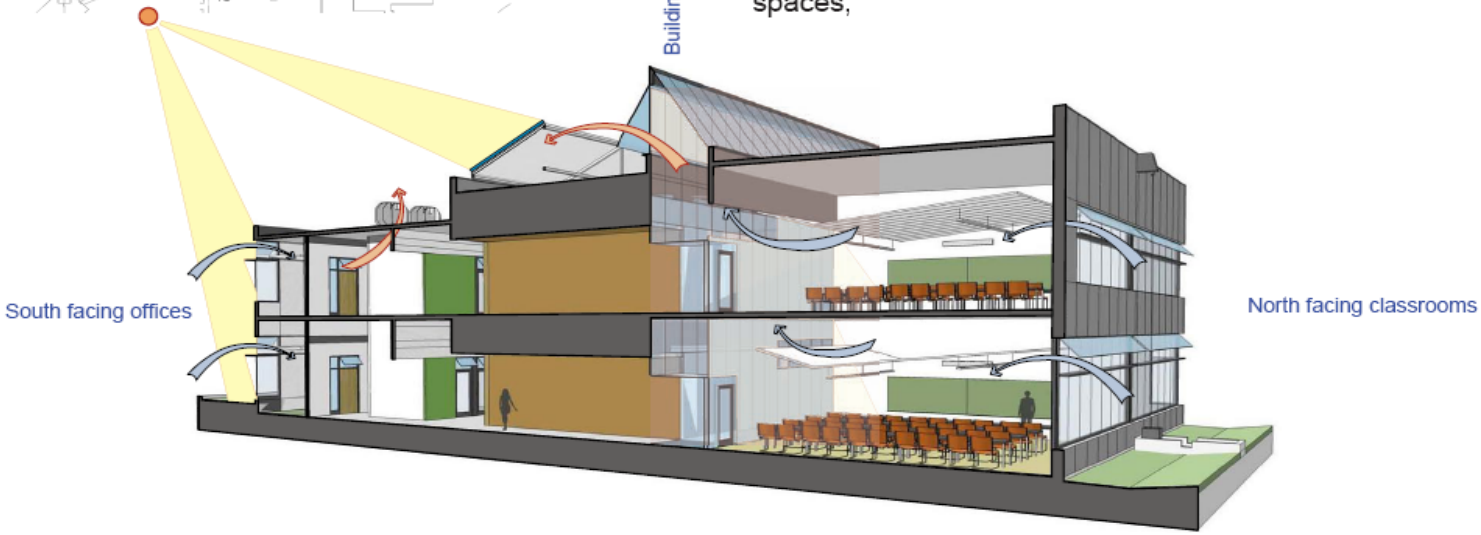
Location #4



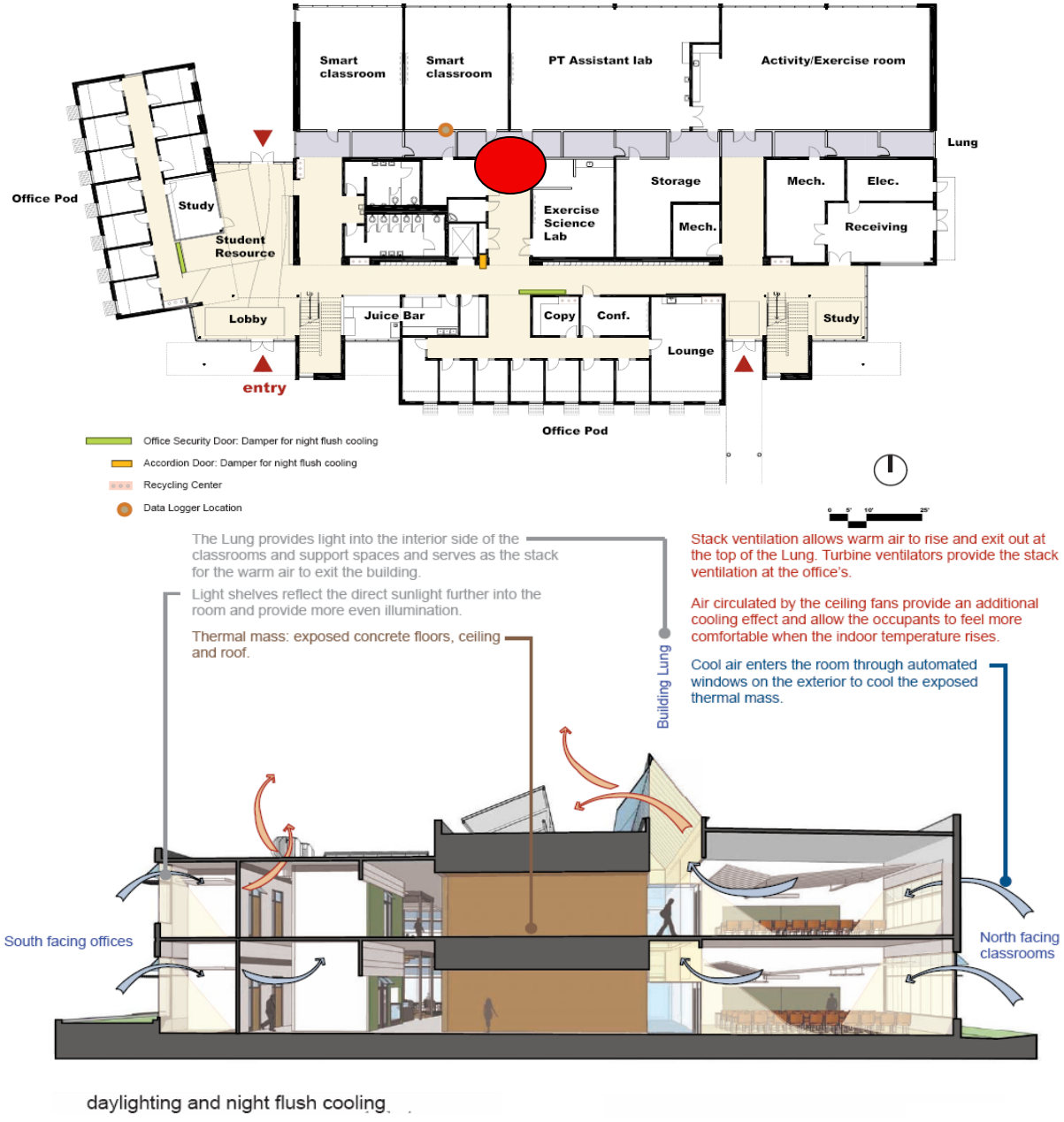


Energy Efficiency

The building orientation, and the times in which the building will be in use, allowed the design team to determine which spaces can take advantage of natural light while controlling solar heat gain. Most of the large classroom spaces are located on the north side of the building since the north light is softer and easier to control for classroom type settings, while the smaller offices are located on the south and west sides since they can handle the higher heat gain due to fewer occupants being in the space. The Lung provides daylight on the backside of the classrooms and other interior spaces,



Location #5



daylighting and night flush cooling.

Energy Efficiency

The "lung" in that bisects the building from east to west exhausts air and brings daylight into interior spaces in the building that wouldn't receive daylight in a traditionally designed building. Daylighting spaces not only saves energy, but studies show that people who work and learn in daylit spaces are more productive and get better test scores.

On hot days, the windows open at night to cool the building. The building is made with a lot of "mass" (i.e. concrete). The concrete absorbs the coolness during the night and radiates it back into spaces during the day. Reducing the need for mechanical cooling.

Because of all of these strategies, this building is designed to be a comfortable temperature on the interior without any heating or cooling when the outside temperature is anywhere between 52 to 92 degrees.

Location #6

Energy Efficiency

Ceiling fans increase air movement making it feel cooler. If you are feeling warm in a classroom, ask your teacher to turn on the ceiling fan. Ceiling fans provide good cooling and use much less energy than an air conditioner.

One of the reasons why the building is able to maintain comfortable temperatures without mechanical heating and cooling is because it is so well insulated. When it does get below 52 degrees outside and the building is in heating mode, it has radiant floor and ceiling heat. Radiant floor heat consists of tubes of water embedded in the concrete floor. The water is heated partially by the solar thermal panels on the roof of the building. Radiant heat is much more energy efficient that the forced air heat that we have in most builds and people typically find it much more comfortable.

Location #6

Materials and Resources

Examples of products with recycled content in this room include the ceiling tiles and sheetrock.

Notice that we don't have trash cans or recycling receptacles in the classrooms. Notice the signs near the door that explain the recycling system. Eliminating the trash cans from the classrooms helps us save on labor costs and encourages people to sort their discards into the appropriate containers in the hallway thereby increasing recycling.

Location #7

Restrooms

This building uses 30% less water than a traditional building. Water saving strategies include low flow water faucets & low water use toilets and urinals.

Bathrooms also include energy efficient hand dryers that eliminate paper towel waste.

The restroom partitions contain 54% post-consumer recycled content.

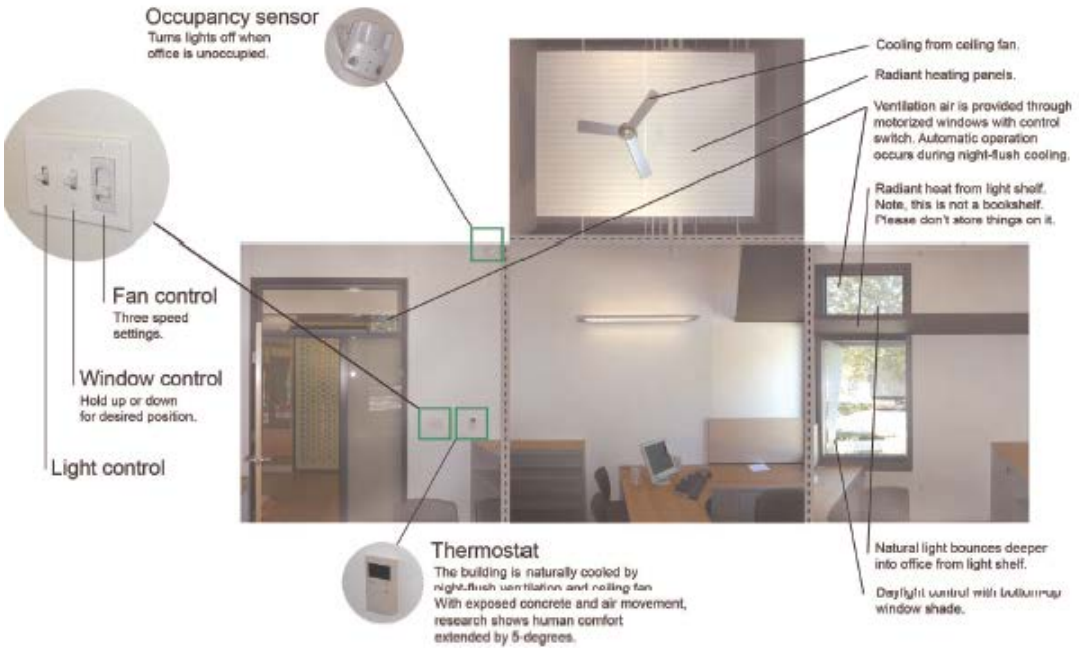
Location #8

Green Features

A few other green features of this building include:

- Coffee served at “juice bar” is fair-trade organic.
- 90%+ of the construction waste from this project was recycled.
- This project received a LEED innnovation point for our green cleaning practices.

Location #9



Occupant Control

•Offices include ceiling fans, operable windows, and radiant heating panels. These features add to the building's energy efficiency and occupant comfort.

•In this building, occupants have control over the temperature in their space than in a conventional building.

•Occupants can turn the ceiling fan on or off. Open the window. Raise or lower the blinds and adjust the thermostat.