

# LIVERMORE - PLEASANTON GREEN FIRE STATION

4 GETS THE GOLD *Green Building Earns the Highest Leed Rating in County*



## When the City of Pleasanton broke ground,

a few years ago to build Fire Station 4, it also broke new ground in another sense. The 7,500-square-foot fire station was the first LEED-certified

emergency services building in Alameda County, and at the time of construction had the highest LEED rating in the nation for an emergency services building. LEED, which stands for Leadership in Energy and Environmental Design, provides a nationally accepted benchmark for the design, construction and operation of high performance green buildings. Station 4, which is home to twelve firefighters from the Livermore-Pleasanton Fire Department, also currently boasts the highest LEED rating within County boundaries for any building type.

As part of StopWaste.Org's Green Building in Alameda County program, green building experts were brought in to help with the LEED rating process. StopWaste.Org also provided a grant to help pay for additional design time, high recycled content products, and LEED documentation and commissioning services. The City had required that the station be designed to LEED Silver standards to demonstrate to local building owners that building green was achievable and affordable. But once design was underway, says fire marshal Eric Carlson, the project team discovered that LEED Gold, an even higher level of performance, could be attained without a significant cost increase.

## FAST FACTS

**COST**

\$3.2 million

**LOCATION**

1600 Oak Vista Way  
Pleasanton, California

**PARCEL SIZE**

2.25 acres

**BUILDING SIZE**

7,545 sq. ft.

**BUILDING TYPE**

Emergency Services

**COMPLETION DATE**

August 2005

**OWNER/DEVELOPER**

City of Pleasanton and  
Livermore-Pleasanton  
Fire Department

**ARCHITECT**

RRM Design Group  
Oakdale, California

**GENERAL CONTRACTOR**

Blackshear Construction  
Benicia, California

**CONTACT FOR MORE INFO**

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What's more, many of the station's green building measures will provide ongoing operating cost savings to the Fire Department and the City of Pleasanton. "We were aggressive in looking for opportunities to go even greener," Carlson says, "and it helped that we had a really good general contractor who worked hard to find green products and materials that wouldn't cost more or would even save money."

## ■ What Makes it Green ■

### SITE CONSIDERATIONS & SOLUTIONS

Prior to construction, the 2.25-acre site was used for construction staging and vehicle storage for nearby residential developments. The soil had been heavily compacted, topsoil was virtually nonexistent, and the few plants growing there were non-native or invasive species. Restoring the site by preserving open space and planting appropriate vegetation were key goals. The design incorporates many principles from StopWaste.Org's Bay-Friendly Landscaping program, which advocates a whole systems approach to the design, construction and maintenance of the landscape to support the integrity of the San Francisco Bay watershed. "The bioswales and low-water use landscaping have been very well received by our residential neighbors," says Carlson. "We've shown that you can make the landscaping look great and still conserve water."

- **Vegetated Bioswales.** Stormwater and the minor irrigation run-off from the site is directed to a network of grassy swales that retain water on-site. This maximizes groundwater infiltration and delays the flow of water into the City's system during heavy rains. The meandering swales are planted with a variety of grasses and sedges that remove contaminants and organic matter and naturally clean stormwater as it flows through.
- **Low Water Use Landscaping.** Hardy, drought tolerant plants were selected that are estimated to reduce irrigation water demand by more than 50% compared with conventional landscaping plants. The entire landscaped area is irrigated by a centrally controlled, automatic system programmed to deliver only the amount of water that is needed. To maximize water delivery to plants, the site is hydrozoned, which means that plants having similar water needs are grouped together.

### IMPROVED INDOOR ENVIRONMENTAL QUALITY

- **Low-Emitting Products.** To improve air quality and reduce negative health impacts on occupants, low-VOC adhesives, paints, carpet, composite wood and natural linoleum products were selected. A nontoxic cleaning policy has been adopted to keep the indoor air free of pollutants from cleaning products.
- **Building Flush-Out.** After construction was substantially completed but prior to occupancy, the entire building had 100% outside air flushed through it to remove any lingering indoor air contaminants from the construction process and materials.
- **Daylighting.** The building design takes advantage of natural lighting by using windows on two sides of most rooms and clerestory windows in the hallways and apparatus bay. Good daylighting reduces the need for electric lights and provides an appealing atmosphere for living and working.

## GREEN at a GLANCE

### SUSTAINABLE SITES

- Restored 2.25 acres with native and adapted plants
- Oil/water separator for parking area to reduce water pollution
- Cool roof (SWD's Kool-Kote)

### WATER EFFICIENCY

- Indoor water use reduced by 32%
- No-water urinals (Waterless Co.'s Kalahari)
- 1.5 gallon per minute showerheads (Bricor)
- Water conserving landscape saves over one million gallons of water per year

### ENERGY & CLIMATE CHANGE

- ENERGY STAR® bathroom fan, refrigerator, dishwasher and washing machine
- Energy performance exceeds Title 24 by 15%
- 12.8-kW photovoltaic system (BP panels, SunnyBoy inverters, installed by Light Energy Systems)
- High efficiency heater (Carrier, 94.1 AFUE, 58MVP series)
- Weatherstripping on exterior doors, including truck bay
- Fundamental and additional

### MATERIALS & RESOURCES

- 42% recycled flyash in concrete (RMC Pacific)
- Floor tiles contain 48% post-consumer recycled tiles (Terra Green's Traffic)
- Wall tiles 70% recycled content (Dal-tile's Eco Tile)
- 25% recycled content fiberglass insulation with no added formaldehyde (Johns Manville)
- 72% post-consumer recycled content rubber athletic flooring (EcoSurfaces)
- 72% recycled content ceiling acoustic tiles (Armstrong's Cirrus)
- Carpet tiles with recycled content 38% recycled content (Collins & Aikman's Infinity Powerbond)

### INDOOR ENVIRONMENTAL QUALITY

- Low-VOC paint on interiors (Kelly-Moore's Enviro-Cote)
- 75% of the spaces have natural daylight
- No-added formaldehyde MDF for site-built casework (Ashland Glass & Millworks)

**ENERGY EFFICIENCY & REDUCED CARBON FOOTPRINT**

- **Photovoltaic Awning.** A 12.8-kilowatt grid-tied solar electric system generates enough electricity to provide roughly 22% of the station's electricity needs. The system doubles as a shade structure for the parking area.
- **Carbon-Dioxide Reduction.** A variety of green building and Bay-Friendly strategies incorporated into the Station resulted in carbon dioxide emissions reductions of nearly 34 tons. That's equivalent to taking six cars off the road, or eliminating yearly auto emissions for half of the Station's firefighters.

MEASURE	CO <sub>2</sub> REDUCTION
Building commissioning energy savings	1.8 Tons
Recycled 75% of C&D waste	12.4 Tons
Energy efficient equipment and appliances	8 Tons
Renewable Energy - 12.8 kW photovoltaic system	4 Tons
Indoor and outdoor water conservation	1.4 Tons
Bay-Friendly Landscape strategies	6.2 Tons
<b>TOTAL – EQUIVALENT TONS OF CO<sub>2</sub> SAVED</b>	<b>33.8 TONS</b>

Source: Climate Action Plan for Alameda County, ICLEI - Local Governments for Sustainability, 2007

