

California Academy of Sciences Celebrates Being Green

By Sajid Farooq
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Golden Gate Park museum earns prestigious Double Platinum LEED honor



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For its third birthday, the California Academy of the Sciences celebrated by being honored with one of the most prestigious awards out there.

Tuesday San Francisco's building with a living roof became the first museum in the world to become earn the the U.S. Green Building Council's Double Platinum LEED-certified building for sustainability.

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"What's so remarkable about this is when the academy was looking at design 10 years ago, there was an emphasis on being sustainable," said the academy's Chief Operations Officer Chris Andrews.

The living museum was designed by Italian architect Renzo Piano to fit into its surroundings in Golden Gate Park.

One of the many challenges was creating a design that was both environmentally-friendly and can practically house an aquarium, a planetarium and a natural history museum.

The rating system is a voluntary standard for evaluating high-performance, sustainable buildings. A committee gives points across a variety of sustainability categories, which if they are high enough, can earn buildings a certification of Silver, Gold, or Platinum.

The academy was evaluated across six categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation and design process.

This is the academy's second LEED honor. Before it even opened its newly reconstructed doors three years ago, the museum was received its first LEED Platinum rating for new construction.

Andrews said the academy has been working on its latest honor for a long time partly because sustainability is part of the museum's mission and because it is a natural part of the Bay Area's culture.

"To lead by example, no pun intended. It was part of the whole design process for the whole building," he said. "It's absolutely natural for the san Francisco Bay Area where people want to be on the cutting edge of sustainability."

He said the academy has a responsibility to teach the more than 5 million visitors it has had in the past three years about the challenges that lay ahead for the environment and everyone's role in that.

"When people walk in their jaws drop and the most frequent first word is 'wow,'" Andrews said. "And then we take them on a tour around the building and have them marvel at nature. And then we point at that the world they are looking at and how it is changing and there are things that we can do now."



Green Facts About the Academy

Choice of Materials

- The Academy incorporates sustainability into its office-related purchasing decisions:
- 100 percent of the Academy's computers are Energy Star rated.
- 100 percent of Academy's printer paper is composed entirely of post-consumer recycled content.
- Nearly all of the Academy's cleaning products are green-seal certified, and all custodial paper products have recycled content.
- Materials used for facility renovations and alterations (e.g., upgrades to aquarium and museum exhibits) contain low or no amounts of VOCs (volatile organic compounds).
- The Academy uses low-emission and ozone-friendly substances for refrigeration, heating, ventilation, air conditioning, and fire suppression.
- The Academy employs a prevention-based pest control program that is EcoWise Certified and minimizes the use of pesticides.

Recycling and Waste Disposal

- 60-65 percent of the Academy's waste is diverted from the landfill into recycling or compost. This includes waste from approximately 1.5 million visitors per year.
- Electronic waste (e.g., batteries and computers) is handled by GreenCitizen, a Bay Area company that helps individuals and businesses repair, reuse, and recycle electronic.

Water and Energy

- 70 percent of staff use alternative transportation (public transit, biking, walking) to commute to work.
- The Academy's data center reduced the number of its physical servers by 41%, while simultaneously increasing the use of virtual machines. This restructuring results in energy savings of 166,000 kWh per year despite a 52% increase in computing capacity.

- Water use is 32 percent below the LEED baseline thanks to waterless urinals and low-flow faucets, toilets, and shower heads.
- Nearly 100 percent of the Academy's electricity comes from clean energy sources (Hetch Hetchy hydroelectric plant plus an on-site solar array).

Living Roof

- Nearly 100 percent of the living roof's plants and 80% of the surrounding landscaping consist of native vegetation.
- 100 percent of excess stormwater from the roof is drained into an underground chamber where it percolates back into the water table, preventing runoff from entering the city's stormwater system.
- 87 percent of the roof's surface area is vegetated, reducing the urban heat island effect.

Indoor Environment

- The Academy has implemented an ongoing commissioning plan for continually optimizing the indoor environmental quality.
- Outdoor views are available in 98 percent of regularly occupied spaces.
- Staff can control lighting in 93 per of the workspaces.
- The Academy has installed CO2 sensors, airflow monitoring, and demand-based ventilation systems.

Education

- The Academy provides green building education through a variety of channels:
- On the public floor, the Building Green exhibit highlights the sustainable aspects of the Academy building, including recycled building materials, radiant floor heating, and solar cells.
- Staff and docents provide regular behind-the-scenes tours.
- The Academy's Teacher Institute on Science and Sustainability, a professional development program for Bay Area teachers, includes green building in its curriculum.
- The Education Division offers lesson plans and teacher workshops focusing on home energy, green buildings around the world, classroom energy audits, and the living roof.
- The living roof is used for weekly public programs, citizen science projects, and research studies by high school and university students.