LOUVERS PLAY KEY ROLE IN PASSIVE AIR MANAGEMENT

At Stanford, they inspire sustainable building solutions and the people who work in them. The Environment and Energy Building (Y2E2) continues to perform and provide a sustainable learning environment. The four-story building contains classrooms, offices, and labs that are filled with experts and students who are motivated by the efficient building in which they work, research and advance a variety of sus tainable solutions for future generations to come.

The Solution

The building's ambitious energy goal called for more than a 50% reduction – above and beyond the ASHRAE 90.1.2004 requirement. According to the University's website, the building capitalizes on the laws of nature for heating and cooling rather than using mechanical systems. In order to meet Stanford's interest in creating a modern building, yet retain the classic look of the other structures on campus, Ruskin provided ELC6375DAX combination louvers/ dampers faced with ELF architectural grilles and a passive air management system. This provides constant airflow and outside air circulation.

How it Works

Known as the "lungs of the building" each of the four atria were treated to custom built stacked louvers to exact specifications. Each atria rises up 89 feet (24 feet and 6 inches above the roof). At night, when the outside air drops to approximately 60ºF degrees, the ELC6375DAX louvers located at the top of the atrium act like a giant siphon and pull up the warm air and allow it to discharge out of the building. The louvers are integrated into a direct digital control system that analyzes the indoor air temperature and determines which windows within the building to open to let the hot air out.

The Outcome

In an interview with KGO-TV, Dick Luthy, Stanford Civil & Environmental Engineer Chairman said that process "will let the building naturally breathe and cool down." This passive cooling system reduces the building's energy contributing to the overall goal of 56% reduced energy usage.

The creation of this building was truly a collaborative effort where experts from a variety of disciplines came together to design a passive air management system that takes advantage of one of nature's basic laws – hot air rises, cold air drops. The Environment and Energy Building is something uniquely special.

While the impact of this sustainable design will be felt daily by those who use the building, the far-reaching implications exceed anything that could be measured on a day-to-day basis.

"We felt this was one of the best investments that we could make for the next generation, and our children," said Akiko Yamazaki, Yahoo! Co-founder, while standing in one of the trademark atriums during the building's dedication. "For our children to be able to enjoy and experience what we've been blessed with, we cannot afford not to do something today."

The building was constructed to LEED Platinum Standards and continues to perform as designed earning the LEED-EBOM rating (Existing Building Operations and Maintenance).

ABOUT THE PROJECT

Architect: BOORA Architects, Portland, Oregon

General Contractor: Hathaway Dinwiddie Construction Company, San Francisco, CA

Consulting Engineers: Ove Arup & Partners, San Francisco, CA

Mechanical Contractor: ACCO Engineered Systems, Glendale, CA

RUSKIN PRODUCTS

ELC6375DAX Combination Louver, CD60 and FSD60 Dampers

- Fixed Exterior Blades with Low Leak

Airfoil Movable Damper Blades

- Special Concealed Actuator Side

Compartment

- Modulating Fail Open 24v Electric Actuators
- Aluminum Bird Screen

ELF Architectural Grilles

- Baked Enamel Kynar Finish with 20 - year Warranty
- Flange Frame and Factory Clip Angles

RUSKIN
AUTHORITY IN AIR CONTROL