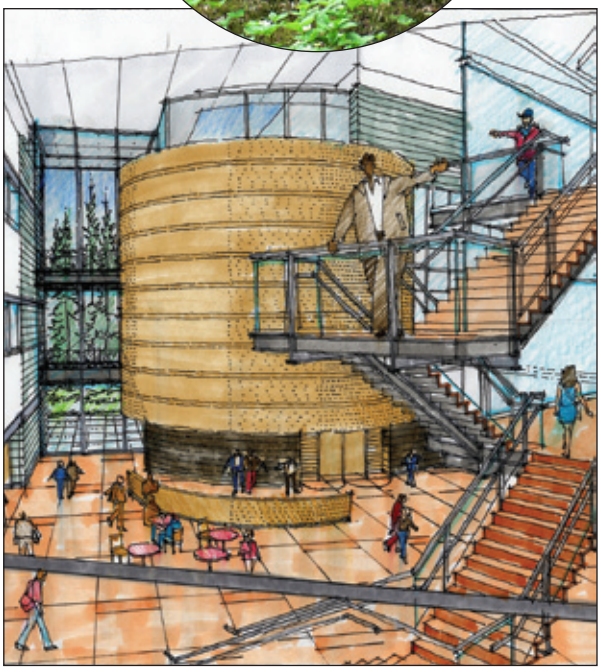
UAA BUILDS GREEN

30 Truckloads of asphalt diverted away from the landfill

90% Rainfall captured on sight (during average year)

0 Heat load effect

Sustainability in Action: New ConocoPhillips Integrated Science Building Goes Green



Protecting the Natural Environment

Before construction began on the new ConocoPhillips Integrated Science Building (CPISB), the location and footprint of the building were carefully planned to limit the disturbance of the surrounding natural environment and to enhance the efficiency of the building envelope. One of the primary strategies to ensure the natural environment could be protected was by using a sediment-control plan before construction began and then updating it throughout the construction process. The asphalt from the old parking lot was reused for fill material on-site, native drought-tolerant plants were used in landscape design and the stormwater runoff system was designed to promote infiltration and reduce the amount of impervious (e.g., asphalt) cover. The stormwater system captures and filters 90% of the average annual rainfall, reducing the impact on stormwater drains and adjacent wetlands. The CPISB roof will also reduce the cooling load of the building as well as the heat-island effect for the city. We know this because the solar reflectance index (SRI) is equal to or greater than 78. The SRI measures the amount of reflectivity and emissivity of radiation from the sun and is the recognized standard to calculate effectiveness.

Reducing Energy Consumption and Carbon Emissions

The new CPISB not only integrates long-standing UAA measures in energy efficiency, but it is one of the first new buildings constructed with the energy

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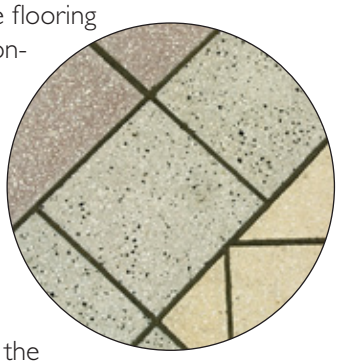
policy in place. The south-facing windows of the large atrium draw sunlight from the low solar angle of the sun in the winter to enhance lighting and reduce heating loads. Mechanical lighting is zoned with automatic control devices such as photocell sensors and occupancy sensors. T5 fluorescent lamps are used in most locations, with additional energy-efficient lighting integrated throughout the facility. Premium-efficient motors are used on all HVAC equipment, heat-recovery systems are integrated into the ventilation of the building, and science labs have variable air volume fume hoods. Labs are also equipped with high-efficiency chillers with non-ozone depleting refrigerants.

Materials Use: Integrating Healthy and Environmentally Sound Preferences

In both new facilities and renovations, UAA integrates environmentally preferable materials into its construction projects. In the CPISB, resilient tile flooring contains post-industrial waste products, is PVC-free, and contains no halogens, plasticizers, asbestos or chlorines. It also emits no VOCs. Resilient tile flooring is more durable than traditional flooring products and requires less maintenance and surface treatment. The carpet flooring contains 25% recycled material and the carpet backing contains 40% recycled material. The carpeting has also received the U.S. EPA Presidential green chemistry award and passes the Carpet and Rug Institute's Green Label Plus requirements. At the end of its lifecycle, the carpet will go back to the manufacturer to be recycled. This kind of forward thinking is part of UAA's effort to develop a zero-waste ethic. Ceramic tiles were another flooring material with recycled content used in the CPISB. The ceramic tile is certified by SCS to have 55% recycled glass content. The rolled rubber flooring contains no harmful asbestos, cadmium, CFCs, formaldehyde, halogens or PVCs. It resists growth of bacteria and has low maintenance requirements. Wall paneling and casework are made from bamboo, and adhesives used are emission free. The white maple doors are FSC certified and do not contain urea formaldehyde. Acoustical ceiling tiles contain a minimum of 44% recycled content and the interior paint contains zero VOCs, is low odor, anti-microbial and manufactured without silica. These materials serve as a few examples of the environmentally preferable building materials UAA uses in new construction and renovations.



Individual Responsibility

While UAA has integrated many environmentally responsible features into the new CPISB, users of buildings can have a large impact on the eco-footprint of the building. Use of lighting only when necessary, and using the minimum amount needed are two important ways each UAA community member can make a difference. Another is to be conscientious about the level of ventilation needed to be safe yet energy efficient when using variable speed ventilation hoods. Two more ways are to take advantage of recycling receptacles and to take care of the space you use in the CPISB, because this will substantially reduce the wear and tear on the building.

"This building is a legacy for UAA from many groups of people who helped to create it. The science staff and faculty identified the need and developed the program. The administration supported the project and saw that it was adequately funded. The architects and their consultants designed it to meet the needs of the users. The contractor and their subs built it. Everyone who contributed to this project deserves to be proud of their accomplishment."

– Mike Smith, Director, Facilities Planning & Construction –

Key Players

UAA Facilities
College of Arts & Sciences

UAA Sustainability

UAA is committed to teaching sustainable practices through classrooms, research and community service. UAA leads by example, advancing sustainability in daily operations and long-term planning, and coordinating efforts with the communities we serve. To learn more about UAA's efforts, visit www.uaa.alaska.edu/sustainability.

Green Star

Green Star's Internship Program assisted UAA in developing this series of case studies. Green Star is a local non-profit dedicated to assisting, certifying and recognizing businesses committed to resource efficiency and environmental leadership. To learn more about Green Star, visit www.greenstarinc.org.

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Last Updated: 4/6/09