



Going Green

NAU's Applied Research and Development building earns coveted recognition

By Thomas Bauer

When is “green” actually platinum? Northern Arizona University officials can answer that question. Its Applied Research and Development building received the platinum designation in recognition of its efforts to be green.

NAU President John Haeger has says that all future buildings on the campus will seek a “platinum” rating when possible, despite the challenges of building green at 7,000 feet, including the need for construction supplies that can accommodate northern Arizona’s “freeze and thaw” temperature variations and the intense ultraviolet light that can quickly damage materials.

“Stewardship of place is not a new concept for Northern Arizona University,” Haeger says. “Our Applied Research and Development building showcases our climate

mitigation commitment and innovations in high-performance construction technology.”

The building earned 60 out of a possible 68 points in the Leadership in Energy and Environmental Design, or LEED, rating system, making it the greenest building in Arizona and in the top 1 percent for green buildings in the United States. The designation was made by U.S. Green Building Council, a non-profit organization committed to expanding sustainable building practices.

“The ARD building uses the natural environment to operate rather than carbon-producing energy sources like natural gas or coal-fire plants,” says Rich Bowen, associate vice president for economic development for NAU. “Building green is good public policy, and high-performance environmentally responsible buildings have a greater return on investment than traditional buildings.”

Long-Term Investment

Designed by Burns Wald-Hopkins Architects of Tucson, the ARD building cost \$25 million to build. However, “the price tag is only about 10 percent higher than non-environmentally friendly buildings, and the energy-saving features will make up the cost difference in the long run,” Bowen says.

The building also was awarded the 2007 Excellence in Structural Engineering Award from the Structural Engineers Association of Arizona.

Compared to traditional buildings, ARD’s environmental features reduce its total energy consumption by 60 percent. Natural light abounds through the open design that includes an atrium area supporting collaboration among its occupants that include environmentally based

Mirrored windows line the walkway along the front of the building.



Photos by Jerry Foreman/Northern Arizona University

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Mark Wilhelm, founding member of the U.S. Green Building Council's Arizona Chapter



organizations such as the U.S. Forest Service and NAU's Center for Sustainable Environments.

The top floor of the three-story building is home to NAU's Center for Microbial Genetics and Genomics, a research facility focused on understanding the evolution, ecology and epidemiology of a number of disease-causing bacteria.

Energy sources for the 59,821-square-foot ARD building on the university's central campus include a photovoltaic solar power system donated by Arizona Public Service that provides at least 20 percent of its electricity. Automatic shade controls and a "heat exchanger" regulate the building's temperature.

"The concrete used in the building includes a mixture of 40 percent fly-ash waste from coal burning, minimizing the high-carbon release in manufacturing cement," Bowen says. "Plus, the ARD parking lot is the first installation in the state to use pervious concrete, allowing water to be captured in natural aquifers to be used for irrigation purposes."

Little Waste

He notes 90 percent of waste materials generated from the building's construction made its way to recycling rather than landfills. About 30 percent of the building's supplies are from recycled materials, including thousands of pairs of denim jeans used for insulation.

Also, 57 percent of the materials are from local producers or manufacturers. Wood used in the building was certified to be harvested from a renewable forest-management system.

The building's design includes no volatile compounds in its paint or carpet. To help insulate the buildings tem-

peratures, a "green roof" on the building's conference unit will serve as a place to grow and maintain an indigenous vegetation cover requiring minimal irrigation.

Reclaimed water replaces potable water for landscaping use and flushing toilets, and water-efficient features such as low-pressure faucets and toilets reduce total water needs by 60 percent.

Mark Wilhelm, founding member of the U.S. Green Building Council's Arizona Chapter and green building expert, says NAU is a good example of a university "going green."

"What sets NAU apart is that it is not just committed to building green; climate mitigation efforts and research are an important part of its curriculum, too," he says. "NAU is walking the walk in terms of being environmentally focused." ■

There's no shortage of natural light in the building's atrium.