

PROJECT PROFILE

Northern Arizona
University
Applied Research
& Development
Tucson, Arizona

Architect:
Burns Wald-Hopkins
Shambach

Contractor:
Kitchell

Structural Engineer:
Schneider Structural
Engineers



“Our ARD building showcases innovations in high-performance construction technology.”
— John Haeger, NAU President

NORTHERN ARIZONA UNIVERSITY APPLIED RESEARCH & DEVELOPMENT

At an elevation of 7,000 feet, this is the world's greenest high-altitude building. The university research facility earned the LEED® Platinum certification for numerous environmentally responsible and sustainable design features. Schneider Structural Engineers introduced fly ash to the concrete mix, reducing the carbon footprint of the building by 40 percent. This innovative recycling of a by-product of coal burning also helps maintain temperature and reduce utility costs.

BREAKING THE MOLD OF TRADITIONAL BUILDING

- Materials in this three-story glass and brick structure needed to withstand Flagstaff's freeze-and-thaw temperature variations and intense ultraviolet light. Schneider Structural Engineers met this challenge with expertise from engineering projects in frigid Alaska and sun-baked Southern Arizona.
- Thirty percent of the construction materials in this \$25 million research facility were recycled, including fly ash in the concrete and blue jeans in the ceiling insulation. During post construction, 90 percent of the construction waste was recycled.
- The construction cost – about 10 percent higher than traditional methods – will be offset by the energy saved.
- Energy consumption is reduced by 60 percent compared to traditional buildings by incorporating a photovoltaic solar power system, automatic shade controls, venting windows and energy-recovery ventilation.
- Natural light abounds, providing 75 percent of building's lighting needs.
- Water use is reduced by 60 percent by utilizing reclaimed water for landscaping and toilets and by installing water-efficient faucets and other plumbing fixtures.
- A naturally green roof of low-water indigenous plants further insulates the structure.
- The parking lot is the first in Arizona to use pervious concrete, allowing water to be captured in natural aquifers and used for irrigation.
- This award-winning standard-setting project is ranked in the top one percent for green buildings in the United States. It received 60 of 68 points and a platinum award from the U.S. Green Building Council's Leadership in Energy and Environmental Design rating system.
- This project also received the 2009 International Award from the Royal Institute of British Architects.

“The design principles developed and knowledge gained will allow NAU and others to build high-performance buildings for much less in the future.”

— Rich Bowen, NAU Associate Vice President for Economic Development