



# Fact Sheet

for the Applied Research and Development building

Gross square feet: 59,821

Architect: Burns, Wald-Hopkins Architects

Contractor: Kitchell Contractors, Inc.



The Applied Research and Development Building showcases the latest innovations in high-performance construction technology, energy efficient design and use of renewable energy resources. It is designed to meet the highest “Platinum” rating of the U.S. Green Building Council’s Leadership in Energy and Environmental Design system.

## Energy efficiency

- A 160-kilowatt photovoltaic system donated by APS provides at least 20 percent of the electricity for the building.
- A back-up heating system uses roof-mounted solar thermal panels.
- Unique “enthalpy wheels” installed in the air-handling units extract heat from the exhaust air to pre-heat fresh air from the outside.
- A heat exchanger installed between the outgoing air handlers and incoming air ventilation captures heat from the building that otherwise would be lost.
- Sunlight provides more than 75 percent of the lighting for occupied spaces.
- Automated shade controls regulate solar gain to keep building temperatures within a comfortable range.
- All result in reducing energy needs by 60 percent.

## Construction

- The building was designed by Burns, Wald-Hopkins Architects, a Tucson-based firm that is nationally recognized for its commitment to green building design and technologies.
- 90 percent of waste materials generated from the construction of the building were recycled instead of being sent to the landfill.
- About 30 percent of the materials used were made from recycled materials, including insulation made from recycled denim jeans.
- 57 percent of the materials used were produced, manufactured or harvested

locally. Wood used in the building was certified to be harvested from a renewable forest-management system.

- The building’s concrete is mixed from 40 percent fly ash (waste from coal-fired electric plants), keeping this material out of landfills and reducing the need for cement. Cement manufacturing is a significant source of greenhouse gas emissions.

## Reduced building impact

- Site preparation minimized disturbance to the local landscape.
- Storm water runoff is reduced with the use of innovative pervious concrete paving.
- To reduce erosion from and contaminants in runoff, storm water for this building and adjacent commercial businesses is captured and held on site.
- Landscaping is designed to collect and filter pollutants.
- The living or “green” roof on the conference unit is designed to insulate the building, reduce the “heat island” effect typical of large roofs and maintain a native vegetation cover that requires little or no supplemental irrigation after initial establishment.

## Water efficiency

- Indigenous landscaping reduces irrigation requirements by 50 percent.
- Reclaimed water replaces potable water for landscaping irrigation and flushing toilets.
- Low-pressure faucets, waterless urinals and low-volume toilets reduce water needs by 60 percent.

