

ASC New Building

400 Masthead Street
Albuquerque, NM

Not all buildings are created equal. The new Forest Service headquarters for the Albuquerque Service Center proves it. The new 101,660 square foot facility, which is registered as LEED for Building Design and Construction is a three-story, high efficiency marvel, waiting to achieve LEED Gold Certification. Beginning in 2006, all newly constructed USDA buildings must be designed and certified according to a third-party point system. The USGBC LEED Rating system is responsible for verifying sustainable building standards based on a whole-building approach. To attain sustainability, the project design team chose to focus on energy efficiency achieved by photovoltaic array on the roof, indoor environmental quality, and reducing water consumption. At the same line, the project has already received the "Designed for Energy Star" label from Department of Energy. To learn more about this state of the art building visit <http://www.usgbc.org>.

To learn more about the ways the FS is meeting sustainability goals visit our website at www.fs.fed.us/sustainableoperations or join one of our Open Mic dialogue session every third Wednesday at 1:00 pm just visit <http://www.fs.fed.us/sustainableoperations/communications.shtml#openmic> for further details, the call in number: 800-857-2016, passcode: 8091384.

Sustainable Strategies

I. Sustainable Sites (passive¹ strategies)

Site selection for any project is the first opportunity to build sustainably. The new USDA Forest Service building was constructed on a previously developed site replacing a parking lot. A centralized consolidated location also offers savings in site utilities, infrastructure and maintenance costs.

Located in an suburban environment allows the building occupants the ability to walk between at least 10 basic services such as restaurants, dry cleaners and day care facilities. Designing the paving material for sidewalks features high reflecting material to minimize the detrimental thermal effects on local habitat and wildlife. Bicycle racks, showers and car pool/van pool parking allow the occupants to reduce their dependence of fossil fuel transportation. Also included were the site lighting guidelines to minimize light pollution to the surrounding area and the night sky. The landscape takes into consideration the need for native plants and efficient irrigation practices.

II. Water Efficiency (passive and technical strategies)

This project utilizes an innovative landscape design for easy maintenance and low-water usage. Native, low-water plants along with ornamental grasses and shade trees cover the site. These strategies combined save the project over 50% in potable water usage annually. Inside the building, all restrooms are outfitted with low-flow lavatories, water closets and urinals. The combination of low-flow fixtures in the building conserves over 286,510 gallons of water a year over standard plumbing fixtures.

III. Energy and Atmosphere (passive and technical strategies)

¹ Passive systems are simple, have few moving parts, and require minimal maintenance and require no mechanical systems.

Buildings consume approximately 39% of the energy produced in the United States, according to the U.S. Department of Energy. Reducing the energy consumption within buildings preserves resources and reduces environmental pollution. The building utilizes a Water Source Heat Pump System with Energy Recovery Ventilators. Energy efficient lighting and appliances limit internal gains. Sun shades and increased insulation allow the project to achieve at least an 18% reduction in energy use.

On the roof the Photovoltaic array contribute an additional 12% to the energy reduction of the building. Total building energy saving is 30% over the standard. Interior corridor lighting fixtures are controlled through the lighting control panel, occupancy sensors and operate during normal daytime hours and turn off during unoccupied hours. Also included is daylighting sensors which do not allow overhead lighting if ambient lighting is sufficient. According to the U.S. EPA, such devices can save energy up to 46%.

The building also feature high performance insulated Low E² glazing that reduces the amount of heat gain to the building, minimizing heating and cooling costs.

IV. Materials & Resources (passive and technical strategies)

The project construction goal includes: encouraging the use of recycled content in building material, sourcing materials locally, choosing wood from forests that are managed in a sustainable manner, and diverting construction debris from landfills.

The final pre- and post-consumer recycled content reached a total of 33.9% recycle material. Of those materials, 42% were extracted and manufactured within 500 miles of the project site, supporting the local economy as well as reducing transportation impacts. Combined these materials include concrete and masonry materials, drywall, and insulation products.

Construction efforts alone diverted more than 200 cubic yards of debris from landfills. Asphalt, cardboard, concrete, metal and wood will be reused to make paving, new steel and compost for Albuquerque landscaping. Beyond construction, occupants are encouraged to contribute to the recycling effort. Recycle areas are conveniently located on each floor of the building. Each location has collection and storage of glass, metals, plastics, paper, and cardboard.

V. Indoor Environmental Quality (passive and technical strategies)

Construction can create tremendous amounts of airborne pollutants, from drywall dust to fumes from paints and sealants. In order to protect construction professionals on the job, an Indoor Air Quality (IAQ) Management Plan was created and enforced to reduce exposure of those on the job to pollutants and prevent contamination of ventilation systems. Before occupancy, as per the IAQ Plan, detailed visual inspections of all air conveyance systems were performed and the building tested for volatile organic compounds prior to occupancy. The building was then turned over as a clean and healthy environment for the employee's.

Another consideration in the quality of indoor air is the inherent volatile organic compound (VOC) content of the materials used. By adhering to various standards to determine the maximum VOC content in g/L for each adhesive, sealant, paint, coating, carpet system, and composite agrifiber installed in the building, the exposure of harmful off-gassing was significantly reduced.

VI. Innovation in Design (passive strategies)

The new ASC is committed to educating not only occupants, but also the general public, about the green features of the new building. Signage is provided throughout the building to highlight sustainable points of interest. If selected, the building may be featured in the New Mexico Commercial Green

Building Tour in 2012. Ongoing cleaning of the facility will be “green cleaning” using non toxic chemicals procedures to further enhance the well being of the occupants.

Owner: Titan Development LLC

Tenant: United States Forest Service

Architect: NCA Architects

LEED Consultant: Halcom Consulting, LLC

General Contractor: Reid & Associates

MP Engineer: ArSed Consulting Engineers, Inc.

Electrical Engineer: Northridge Electric

Commissioning Agent: Continuant, LLC

Pictures provided by: Titan Development LLC



Main entrance view



Aerial view_ photovoltaic array



Sunset at ASC building



Roof view_ Photovoltaic array



Interior view_ Conference/training room



Exterior view