Angeles National Forest – Supervisor's Office (ANF SO)

An Innovative Example of Green Building

A green building is one that is environmentally sustainable, resource efficient, and is designed, constructed and operated to minimize the total environmental impacts throughout the building's life-cycle by performing well in key areas of human and environmental health, as listed below. LEED certification provides independent, third-party verification that a building project is environmentally responsible. The new Supervisor's Office (SO) is expected to receive LEED certification in 2014.

What Makes Our Building Green?

Sustainable Sites: The ANF SO is located in a densely populated area in Arcadia, next to the I-210 freeway (Santa Anita exit). Metro Gold Line will pass through the southwest section of the complex and the "Arcadia Station" will be opened for public use in Fall 2014. Our project site has easy access to public transit. Our parking lots provide for stalls specifically designated for low-emitting and fuel efficient vehicles.

Materials & Resources: Materials used for the project include considerable recycled content, much of which was extracted and manufactured within 50 miles of Arcadia. Portions of the redwood siding installed were recycled from an existing building that was demolished. Significant amounts of construction waste were diverted from landfills through re-use and recycling.

Water Conservation & Efficiency: In addition to a dry creek and retention pond, the landscaping is comprised of native/drought tolerant plants and water-efficient irrigation systems including a 50% reduction in potable water usage. Other aspects of water efficiency are the ultra-low-flow fixtures used in the restrooms.

Energy & Atmosphere: Most of the light switches in the facility have occupancy sensors which conserve electricity. Compact fluorescent lamps (CFLs) are used instead of incandescent lamps whenever possible. High insulation elements (cool roof, insulated walls, double-pane windows, shades) and energy efficient components (fully commissioned HVAC system with EnergyStar products, CO_2 sensors, and appliances) were used in the construction of the building to reduce energy consumption.

Indoor Environmental Quality: The building features interior offices, workstations, conference rooms, a fitness room and clearstory lobbies and hallways that maximize natural indoor lighting, reducing the need for artificial light. The windows and doors provide maximum daylighting and the mountainous outdoor views on the north-facing walls for approximately 75%-90% of spaces throughout the building.

Innovation & Design: During construction the team, which included LEED Accredited Professionals, was diligent at ensuring that products with excessive VOC (volatile organic compounds) were kept to a minimum. To reduce the exposure of building occupants and maintenance personnel to potentially hazardous contaminants (which adversely affect air quality, human health, building finishes, and environment) the cleaning staff uses only low/no VOC cleaning products.

Green Building Education: The SO building will continue to provide information to the public on its unique LEED components with publications and displays, as well as offering tours of the building. Sustainable Operations (SusOps) is a Forest Service group that currently promotes efforts to reduce the environmental footprint acros the agency by implementing sustainable actions in the areas of energy, water, green purchasing, fleet and transportation, waste prevention and recycling, and sustainability leadership.

Sustainable Operations

Creating Habits Today, Conserving Resources for Tomorrow

USDA

United States Department of Agriculture

Angeles National Forest

Supervisor's Office
701 N. Santa Anita Ave.
Arcadia, CA 91006
(626) 574 - 1613

Angeles National Forest

Supervisor's Office

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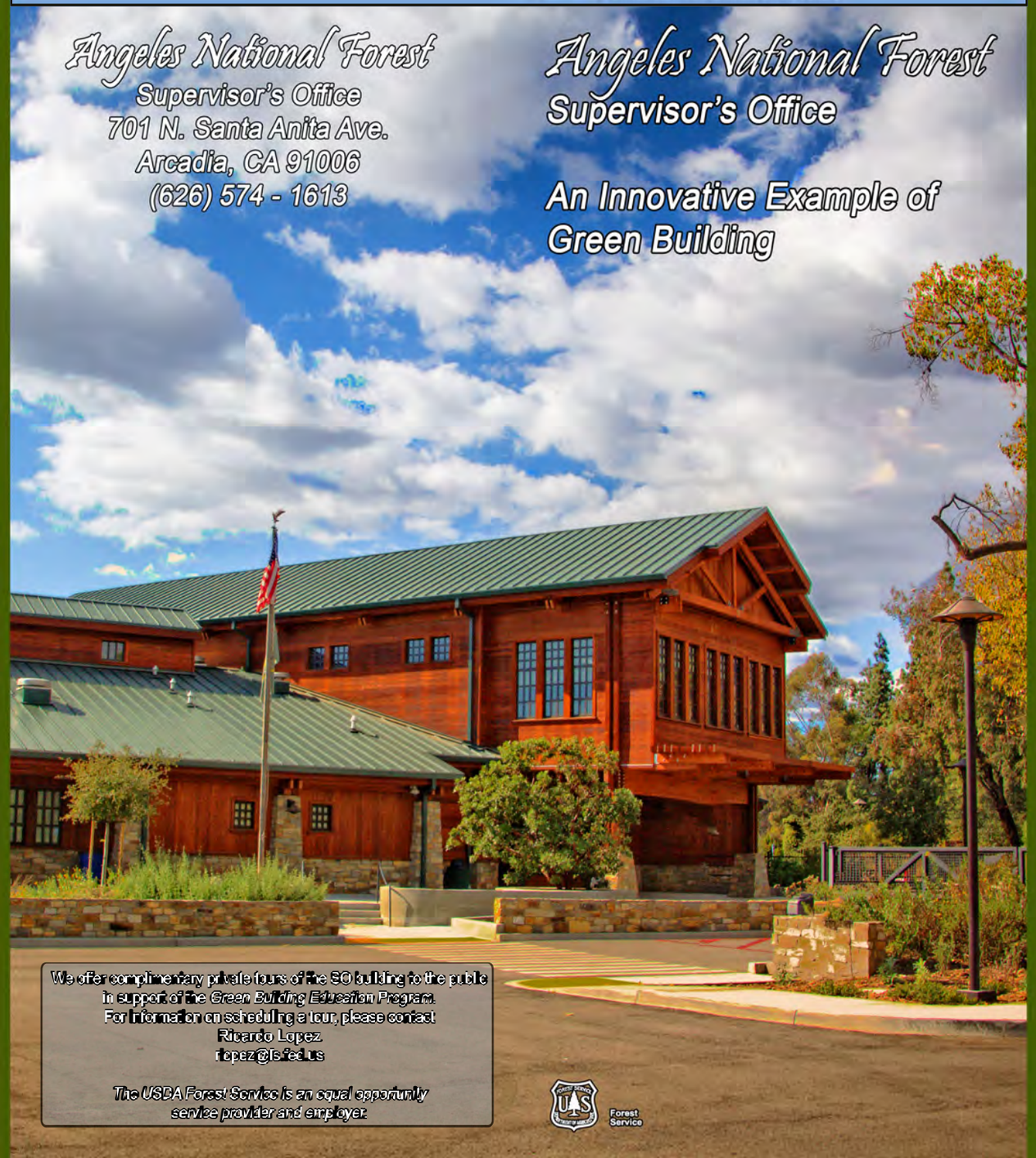

We offer complimentary private tours of the SO building to the public in support of the *Green Building Education Program*.
For information on scheduling a tour, please contact
Ricardo Lopez
rlopez@fs.fed.us

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Forest Service

About the SO Replacement Project

In 1986, the headquarters for Angeles National Forest (ANF), formally known as the Supervisor's Office (SO), was moved from Pasadena to Arcadia into "temporary" modular trailers. Arcadia became the headquarters for the ANF, staffing more than 100 employees. After 23 years and well past its service life, the modular trailers' maintenance repair costs soared and the ANF SO Replacement Project was born. The project was submitted and approved in the 2009 Stimulus bill for "shovel-ready" projects. A design-build construction contract followed in January 2010, resulting in a successful partnership between the team of HMC + Beverly Prior Architects, PW Construction, Inc. and the U.S. Forest Service.

Funded by American Recovery & Reinvestment Act (ARRA) in 2010, the project initial cost was $11.5M (stimulus funding). The overall cost of the project is $15M which includes the demolition/recycling of 4 old buildings, construction of a new SO building, remodel of an existing building for radio staff, site improvements (landscaping, parking, utilities, solar system connected to SCE power grid, storm water retention, and site drainage), exterior remodel of three warehouses, and the renovation of "Warehouse A" building which is now the Angeles Training & Conference Center (ATCC).

Major construction was completed and SO employees moved into the new 2-story building in Spring 2012. The ANF had an "open house" Grand Opening event and formally dedicated the building in December 2012. More than 300 enthusiastic visitors, dignitaries, and Forest Service employees attended the event. Tours of the building were conducted and guests were allowed to walk through the new building, the courtyard and the ATCC. Building tours to the public are given periodically and the Green Building Education program will continue to provide visitors with information on the sustainable features of this building and the concepts of LEED.

SO CAMPUS MAP & FEATURES

1. *Smokey Bear Topiary* has remained in the original post since he was given upon arriving at the SO back in 1994. An iconic symbol of the National Forest, preserving the topiary was of utmost importance even through the new construction, which had to be built around him. He stood the test of time and now welcomes staff and visitors alike to the new building.
2. *Storm Water Runoff Creek and Retention Pond* located between the SO and ATCC (see shaded areas in blue on Campus Map) you'll notice the functional and beautiful feature created using salvaged rocks from site excavation and native plants. The pond serves as a dual purpose, while enhancing the landscaping it is also a storm water management drainage system which collects, pre-treats and infiltrates storm water into the subsoils, resulting in aquifer replenishment through 100% retention from 95% of storms.
3. *Parking Lot* with capacity for 200 vehicles includes specifically designated for wheelchair accessible, carpooling, low-emitting and fuel efficient vehicles, as well as a new CNG charging station.
4. *Landscaping* features include a courtyard with shade trees, along with river and desert micro-environments. There are over 50 native and drought trees and 700 bushes on site. In addition to complimenting the overall design of the campus the variety of fruit trees promotes a healthy workplace and workforce.
5. *The Compost Bin* was installed in 2009 for employee use as part of an on-site organic composting program. When enough organic content is generated through landscape maintenance, dead tree leaves and other materials are used for composting in the manually operated tumblers located in the back lot. Once this material is manually churned, it decomposes into soil-like material called compost that is then, used to fertilize other plants on-site.
6. *Emergency Generator* is activated during power outages and provides power to some of the building in the event of a blackout.
7. *Smart Meter* monitors real-time power consumption, including energy savings from photovoltaic solar power system. This data is then reported to the Regional & Washington Offices and monitored for power use trends.
8. *SO's Time Capsule*, a box containing memorabilia, was sealed and buried behind a wall in the lunch room on December 14, 2011. It's scheduled to be opened 25 years later. Citizens will have the opportunity to uncover ANF and its staff's rich and unique past.
9. *Photo-Voltaic Modules (Solar Power)* are mounted on the south-facing roof and consists of 90 individual PV modules. Each monocrystalline module contains 60 "cells" and can produce 240 watts of power per hour. The SO system is connected to the SCE electrical grid as a power generating facility.
10. *Angeles Training & Conference Center (ATCC)* is the new facility that provides the majority of staff training to fire fighters, other agencies and SO employees, with state of the art Audio/Video system for large group presentations. This building used to be a warehouse that was used for storage. Built in the 1930s, the historic building also features dramatic natural lighting that reduces the need for indoor lighting.
11. *SO Courtyard USFS Concrete Stamp* was constructed by an ANF firefighter who volunteered labor, materials and other resources to encapsulate the USFS logo. The Forest Service "shield" is prominently seen from the balcony, along with the beautiful landscape between the SO and ATCC buildings.
12. *Trash & Recyclables* are collected from within the building at various locations and taken daily to dumpsters and recycle bins. In addition to recycling paper, aluminum and glass, the SO also collects old toner cartridges, batteries, and other components for recycling.
13. *Natural Indoor Lighting* is prevalent in both floors of the SO with clearstory views and maximized window areas along north- and south-facing walls.
14. *Mechanical Well* provides space to most HVAC equipment and is located away from office spaces, roofs and site to preserve the beauty of the building.
15. *Wellness Room & Stairs* will allow employees to participate in a wellness/ fitness program and reduce environmental impacts by not using the elevator.
16. *Metro Gold Line Foothill Extension* wil go through the the Southwwest section of our facility and the *Arcadia Station* will be open in Fall 2014.

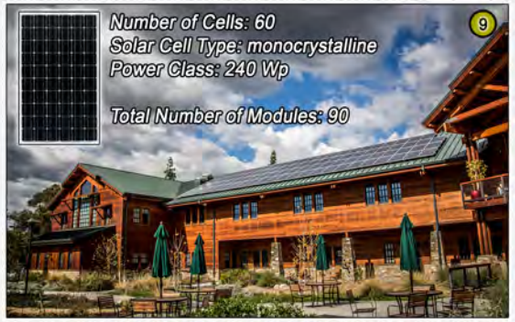
SO Bird's Eyeview

HEADQUARTERS
ANGELES
National Forest

2nd Floor

1st Floor

SO Campus Map



In the first 7 months of operation, the PV system has eliminated approximately 90 tons of CO_2 which will result in a reduction of 310,900 tons of CO_2 emission in a given year. The power reduction equates to a savings of 30,500 kWh per year, or roughly $3,000 year. The smart meter continues to monitor real time power output daily and savings initiatives such as "Power-It-Down Weekends" which are observed and reported on for power trends in the agency.

The most prominent feature of water conservation & efficiency is the beautiful landscape within the storm water runoff creek and retention pond, located in the employee parking and courtyard areas. The runoff from the parking areas collects at french drains to underground piping and eventually moves by gravity to the retention pond.

The building's interior design promotes maximum natural lighting from clearstory views, storefronts, interior workstation partitions with glass panels, and large windows (facing the sun) which allows for dramatic reduction in power savings from minimal lighting.