

# PROJECT PROFILE



## Ames Research Center Building N232 Collaborative Support Facility Moffett Field, California

### LEED for New Construction

**28%** Recycled Content

**42%** Reduced Potable Water Use

**51%** Less Energy

**67%** Reflective Hardscape

**91%** Construction Waste Diverted

**100%** Reduced Potable Landscape  
Water Use

## LEED® Facts

Ames Research Center  
Building N232 Collaborative Support  
Facility  
Moffett Field, CA

LEED® for New Construction – Version 2.2  
Certification Awarded April 12, 2012

**Platinum 57\***

Sustainable Sites 14/14

Water Efficiency 5/5

Energy & Atmosphere 13/17

Materials & Resources 6/13

Indoor Environmental Quality 15/15

Innovation & Design 4/5

\*Out of a possible 69 points

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## Ames Research Center Building N232

### “Sustainability Base” Lives Up to Its Name



#### PROJECT DESCRIPTION

Named in honor of Tranquility Base, Apollo 11's lunar landing site, Sustainability Base simultaneously showcases NASA technologies and serves as a test-bed for innovations in environmental design and operations. The passive-solar and native-to-place strategies reduce use of natural resources and incorporate the surrounding environment and climate into its operation. Outdoor workspaces with WiFi and pleasing views contribute to the healthy and productive work environment. The building has a geothermal system to provide radiant heating and cooling, old growth shading, solar daylighting, and natural ventilation. Interior finishes and furnishings are non-toxic, recycled, and recyclable materials. On-site energy generation includes rooftop solar photovoltaics, a solid oxide fuel cell, and solar thermal to supplement domestic hot water. Over 2,000 sensor 'points' report data, instantaneously or at intervals; and over 1,200 generate quantified information to help keep the building performance on track.

#### SUSTAINABLE SITES (14/14)

Sustainability Base encourages walking and has access to the city bus and the Center's ridesharing shuttle stops within 0.25 miles. The facility also provides bicycle storage and shower facilities for the occupants. There are 77,411 square feet of open space adjacent to the facility and 61% of the site (outside the building footprint) remains unaltered or restored with drought tolerant native plants and bioswale landscaping. The majority of the roof area (87%) is covered with materials that meet a Solar Reflectivity Index (SRI) greater than 104, and 69% of the site hardscape is paved with highly reflective material. The USGBC Campus Design strategy highlighted the Green features of the campus and contributed to the LEED rating.

#### WATER EFFICIENCY (5/5)

Potable water usage in the facility has been reduced by 42% through the installation of low-flow faucets, toilets, and urinals. Outside, landscape irrigation exclusively uses treated groundwater from a local Superfund site, reducing the potable water requirement to zero and total water use by 63% from the calculated baseline.

#### ENERGY & ATMOSPHERE (13/17)

The facility reduced energy consumption by 51% from the ASHRAE 90.1-2004 requirements through an improved thermal envelope, high-efficiency glazing, reduced lighting power density, and energy efficient HVAC systems. The facility also underwent an enhanced commissioning process. Additionally, no CFC-based refrigerants were used in the HVAC system and the total refrigerant impact score is 40 per ton – significantly less than the 100 per ton limit.

#### MATERIALS & RESOURCES (6/13)

The project diverted 313 tons of on-site generated construction waste from landfills, nearly 91% of the total construction waste. 28% of construction materials contain recycled content and 12% of all building materials consist of local materials made less than 500 miles from the site.

#### INDOOR ENVIRONMENTAL QUALITY (15/15)

The facility incorporates carbon dioxide monitoring in internal workspaces and direct airflow carbon dioxide measurements in the non-occupied areas to monitor ventilation. The facility provides 70% more fresh air than required by ASHRAE 62.1-2004. With the building height at 50 feet, triple window banks on both sides, and skylights, daylighting accommodates 96% of occupied spaces and provides direct line of sight views for 100% of regularly occupied areas.

#### INNOVATION IN DESIGN (4/5)

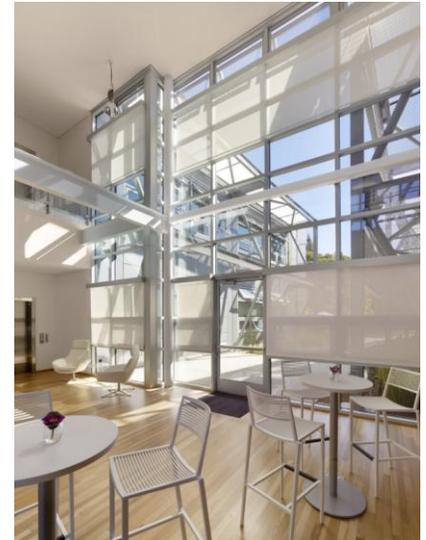
The project has received exemplary ratings and recognition for its electrical efficiencies, potable water reduction, and maximum utilization of indoor and outdoor spaces.

“The collaborative process yielded a highly sustainable and beautiful design—optimized for building performance and representative of our values.”

**STEVE ZORNETZER, NASA AMES RESEARCH CENTER, ASSOCIATE DIRECTOR**

#### AWARDS

- ▶ Real Property Innovation Award; GSA
- ▶ "Lean Green and Mean" GreenGov Award; White House
- ▶ Sustainable Built Environment Award; Acterra Business
- ▶ Best Green Building Award; Engineering News Record California
- ▶ Green Project of the Year; San Jose Business Journal



The interior of this facility was designed to maximize natural daylight, as shown here.

**Owner:** NASA Ames Research Center  
**Architect:** William McDonough+Partners  
**Architect of Record:** AECOM  
**Commissioning Authority:** Flack + Kurtz  
**Contractor:** Swinerton Builders  
**Project Size:** 49,022 SF  
**Project Cost:** \$20,600,000  
**Completion:** April 2012  
**Photography:** ©Cesar Rubio, courtesy of William McDonough + Partners

#### ABOUT LEED

The LEED Green Building Rating System is the national benchmark for the design, construction, and operations of high-performance green buildings. Visit the U.S. Green Building Council's Web site at [www.usgbc.org](http://www.usgbc.org) and the Northern California Chapter of USGBC at [www.usgbc-ncc.org](http://www.usgbc-ncc.org) to learn more about how you can make LEED work for you.