



SIKA AT WORK SUSTAINABILITY BASE AT NASA'S AMES RESEARCH CENTER MOFFETT FIELD, CALIFORNIA

MECHANICALLY ATTACHED Sarnafil® EnergySmart Roof®
USING 60 MIL S 327 MEMBRANE IN WHITE

Sarnafil

BUILDING TRUST



SARNAFIL ROOF PART OF NASA'S LATEST MISSION ON EARTH

Outer space is not the only area where NASA does research. In fact, the Sustainability Base at NASA's Ames Research Center in Moffett Field, California, is testament to research NASA is doing right here on earth. Considered to be the "greenest" federal building in existence, the 50,000-square-foot, two-story, lunar-shaped building is designed to be "a workplace, a showcase for NASA technology and a living prototype for future buildings," according to NASA. "It is NASA's latest mission on earth."

About 200 NASA employees work at the Sustainability Base, which NASA sees as a prototype of what a 21st-century building should be. "The building and its site are designed not only for planetary well-being, but also for human physical and emotional health," NASA's website states. "The elements for human well-being include plentiful fresh air, daylight, outdoor workspaces, views of nature, natural shading, nontoxic building materials and a variety of greenery."

The facility is LEED® Platinum certified and designed to be "net energy positive," which means it generates more energy than it consumes. To this end, the Sustainability Base has a narrow width (54 feet) to allow daylight to reach desks in the middle of each floor, and windows that can be opened for natural ventilation.

Electric power is generated by on-site photovoltaic solar panels and solid oxide fuel cell technology from a Bloom Energy Box (developed for a NASA Mars project). There are also 106 geothermal wells supporting a groundsource heat pump system, and a water recovery system filters water used to flush toilets and urinals.

A ROOF LIGHT YEARS AHEAD

Selecting an energy efficient roof for the Sustainability Base led the architect to a reflective, light colored single ply membrane with solar panels. "We typically specify white roofs because those roofs have a high reflectance rating, and therefore lower heat gain," said June Grant, associate principal at AECOM of San Francisco. "Instead, the light color acts like a mirror and bounces the heat rays back, keeping the building cool."

One white roof which NASA's Ames Research Center is very familiar with is Sika Roofing's Sarnafil EnergySmart Roof. This vinyl roof is heat-weldable, creating seams that are as strong as the membrane itself. The membrane is a proven performer, due to more than 50 years in the field, and its light, reflective color, as Grant pointed out, reduces air conditioning costs. "We've specified Sarnafil roofing systems before and they have all performed well," Grant added.

"This is NASA's preferred roofing system," explained Mark McAtee, estimator and project manager at Alcal Specialty Contracting of Fremont, California. "They have a great relationship with Sika Roofing, which is why the majority of the roofs at the Ames Research Center are Sarnafil roofs."

A PROBLEM FREE INSTALLATION

Installation of the 25,000-square-foot roof was pretty straightforward, McAtee said. "It took about one month for our six-man crew to install the roof on the Sustainability Base," he remarked. "We had

PROJECT

Sustainability Base at NASA's Ames Research Center
Moffett Field, California

OWNER

NASA

ROOFING CONTRACTOR

Alcal Specialty Contracting, Inc.
Fremont, California

DESIGN ARCHITECT

William McDonough + Partners
San Francisco, California

ARCHITECT / ENGINEER OF RECORD

AECOM
Orange, California

GENERAL CONTRACTOR

Swinerton Builders
San Francisco, California

ROOFING SYSTEM

Mechanically attached Sarnafil EnergySmart Roof using 60 mil S 327 membrane in White

PROJECT SIZE

25,000-square feet

COMPLETED

June, 2011





also just purchased a window and glazing company, so we did that work as well.”

“I liked that Alcal could do the entire building envelope, including the roof and windows,” said Jack Carter, project executive at Swinerton Builders of San Francisco. “We have a long-standing relationship with Alcal and know they are very proficient at installing Sika’s Sarnafil roofing systems,” he explained. “We’ve had very positive working experiences with both companies and find Sika Roofing to be very responsive to our needs.”

“Sika’s in-progress inspections are always helpful,” McAtee added. “We really like Sika Roofing’s products and technical support. That’s why we always recommend Sarnafil systems.”

After the roofing membrane was put down, the solar array panels were installed. “The solar panels used a combination of mounting techniques. The solar panels were attached and anchored to the I-beams underneath the roof deck, which required penetrating the roof.

Fortunately, the Sarnafil system is easy to reseal,” said David Wong, utilities manager at Ames Research Center, Facilities Engineering Branch. “The solar panels were also self-ballasted to prevent them from catching the wind and sliding around.”

In a typical year, the solar panels are expected to generate about one third of the Sustainability Base’s electricity needs.

MISSION ACCOMPLISHED

Today the Sarnafil roof on the NASA Sustainability Base is performing according to plan, and has survived several winters with no problems.

“Sustainability Base is just finishing up its commissioning period,” said Steven Zornetzer, associate center director for research and development at NASA’s Ames Research Center. “To date, the building’s roof has performed as expected. It provides excellent reflectivity and all indications are that it will meet our expectations for durability.”



SUSTAINABILITY BASE AT NASA'S AMES RESEARCH CENTER



WHO WE ARE

The commercial roofing industry has relied on thermoplastic single-ply membranes from Sika for more than 50 years to achieve sustainable roofing and waterproofing solutions.

Sika is a globally active specialty chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, facades). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting load-bearing structures. Sika's product lines feature high-quality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

Our most current General Sales Conditions shall apply.
Please consult the Product Data Sheet prior to any use and processing.
ISO 14001: 2004-Compliant



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LEED® is a trademark of the U.S. Green Building Council.
Green Globes® is a trademark of the Green Building Initiative

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