



Packard Foundation Headquarters

*Largest Net Zero Energy, LEED Platinum building in California—
Alpenglass powered by Heat Mirror® plays important role in energy efficiency.*



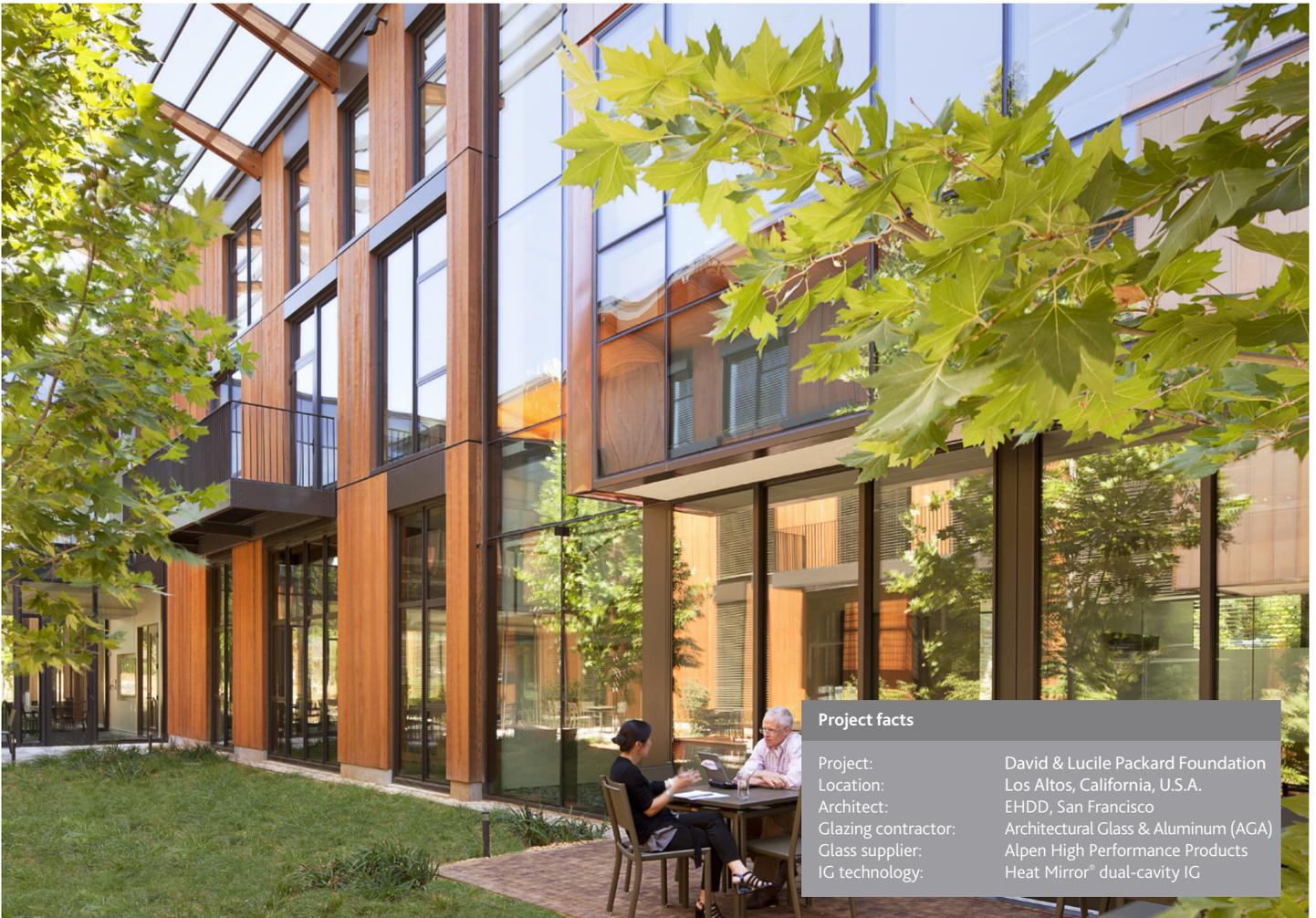
Since opening its headquarters in Los Altos, Calif., in July of 2012, the David and Lucile Packard Foundation has achieved Net Zero Energy Building certification for its ability to be self-sustained by its own energy sources and LEED Platinum certification for green building design, construction, operations, and maintenance. By providing natural light, thermal insulation, and noise reduction, Alpenglass with Heat Mirror® plays a major role in the Packard Foundation's ability to conserve energy.

Designed by San Francisco-based EHDD architecture firm, much thought and planning went into the design of the building to be a model of energy efficiency—not just for its architectural beauty but for its ability to use recycled and sustainable materials. Construction started from the ground up with innovative sustainable practices that support the Packard Foundation's values of conserving and restoring the earth's natural systems.

The first task was to clear the 1.5-acre site for the 49,000-square-foot building. This was accomplished by DPR Construction, the general contractor on the project, who recycled 95% of the construction waste from the teardown of the buildings on the site, earning the project the maximum LEED points for Construction Waste Management for redirecting materials from going into a landfill.

The Packard Foundation's new headquarters is constructed with postconsumer products, including plate metal window panel systems produced with 39% postconsumer content. The exterior blends stone, vertical wood paneling, and highly insulating glass walls and windows that open to a courtyard. Designed to produce as much energy on-site as needed, the narrow building takes advantage of daylight as well as the California climate. Light sensors work with the curtain wall and window systems to automatically dim during daylight hours. Operable windows aid in ventilation, as well as heating and cooling, by letting occupants know the best times to open or close the windows.

Contract glazier, Architectural Glass & Aluminum (AGA), selected and installed Alpenglass with Heat Mirror®, which uses a suspended coated film (SCF) located midway between two plates of glass to increase thermal insulation without adding weight. For the Packard project, the Heat Mirror IG used low emissivity (low-E) glass from Cardinal Industries with argon gas to fill the two interspaces between the central film and glass panes. These dual-cavity windows allow daylight in but keep heat out to maintain a comfortable interior temperature, practically eliminating the need for heating or cooling.



Project facts

Project:	David & Lucile Packard Foundation
Location:	Los Altos, California, U.S.A.
Architect:	EHDD, San Francisco
Glazing contractor:	Architectural Glass & Aluminum (AGA)
Glass supplier:	Alpen High Performance Products
IG technology:	Heat Mirror® dual-cavity IG

"Insulating glass to Alpen—specifically Heat Mirror glazing—is a wavelength selective filter," explains Robert Clarke, a commercial marketing manager with Alpen High Performance Products. "It's not saying that any portion of the light spectrum—infrared (IR) heat, visible, ultraviolet (UV)—is good or bad; it's simply saying that Heat Mirror® technology provides architectural freedom

for designers and engineers by enabling them to either block or pass the optimal amount of each to achieve the overall aesthetic and performance goals. It really separates architectural function and form. That is, you can choose a building design and then with some independence, engineer the glass to complement comfort, heating, cooling, and UV control—that's the true

elegance of Heat Mirror® IG, providing architectural freedom.”

Other energy-saving features of the Packard

Foundation headquarters include:

- Deep balconies and overhangs to shield the sun and reduce HVAC use
- Rain gardens to divert storm water runoff from entering overloaded sewer systems
- Water collection for flushing toilets and irrigating indigenous landscaping
- Partial green roofing that provides a natural bird habitat and helps with water collection
- Video conferencing in most meeting rooms to provide alternatives to reduce carbon emissions of destination transportation
- 292-kilowatt photovoltaic roof panels that allow the foundation to manufacture 100% of its own renewable, carbon-free electricity

All are contributing factors for the Packard Foundation headquarters’ Net Zero Energy Building and LEED Platinum certification.



Windows that insulate like walls!

Alpenglass with Heat Mirror® is an extremely high-performing, energy efficient glass system which dramatically improves thermal insulation and indoor comfort compared to standard insulating glass (IG) units. The technology suspends up to three films in the airspace of an insulating glass unit to create multiple airtight chambers that deliver best-in-class insulation performance for windows. Standard insulating glass with low-e coatings typically delivers a thermal insulating performance of R-3 while Heat Mirror® insulating glass can achieve an R-value up to 20!

Recognized by

- Popular Science as one of the “100 Best Inventions of the Millennium”

Key Heat Mirror® attributes

- Provides center-of-glass insulation performance ranging from R-5 to R-20
- Offers superior winter heating and summer cooling due to its multicavity design
- Blocks 99% of harmful UV rays
- Reduces condensation buildup on glass during winter
- Has the same weight as dual-pane glass—about 33% lighter than triple-pane glass

Next Generation
Heat Mirror® IG



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