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Seeds of Change

With a barn on Long Island, a sustainable-building magnate gives climate researchers a fitting place to think.

Created as a retreat for scientists and researchers, the Climate Barn in eastern Long Island is the brainchild of owners Jeff Tannenbaum and Nisa Geller. Working with architect Shauna McManus, they've created a net-zero-energy structure that showcases affordable, sustainable design. "We always had it in the back of our minds to do something like this," says Jeff. "At some point we wanted to build a house that totally represented our values."

Jeff Tannenbaum may very well be the sustainability movement's adopter-in-chief. The private investment fund that Tannenbaum founded in 1994 purchased carbon offsets and embraced LEED-accredited workspace design almost immediately after both concepts were developed in the late '90s. By 2017, he had created the largest independent utility-scale solar business in the United States. He had also founded a nonprofit that promotes innovative financing for energy-efficient construction and retrofits. "If you show Americans that you can solve sustainability problems profitably, you can solve them much faster," Jeff says.

Jeff and his wife, Nisa Geller, executive director of a social-justice NGO, share their good fortune with the environmentalist community as well. For the past 15 years, the couple have invited climate research leaders (among them legendary scientist and activist James Hansen, one of the first to raise awareness about global warming) to seasonal residencies at their vacation home in Sagaponack, on Long Island's East End. In 2019, Jeff and Nisa completed a 2,263-square-foot barn on the six-acre property as a live-work facility for these guests. It also boasts net-zero energy performance, "because it reflects the values and initiatives that they are working so hard to champion," Jeff says of the building, which serves as a family hangout for the rest of the year.

Known as the Climate Barn, the project replaces a 100-year-old, L-shaped garage structure that had been slowly degrading >

on the site. Connecticut architect Shauna McManus, who worked on Jeff and Nisa's primary residence in Katonah, New York, conceived a one-and-a-half-story volume in the image of a neighboring potato barn to go on the existing footprint. A good conservationist herself, McManus used a Pennsylvania barn broker (yes, that is a thing) to acquire the structural members and siding of a 19th-century barn. Local contractor John Barrows then erected McManus's design using super-efficient structural insulated panels (SIPs), reinstalled the antique timbers and siding within the interior, and clad its exterior in shingles. Four inches of extruded polystyrene foam placed underneath the barn's concrete slab floor extends the blanket of insulation entirely around the house.

Photovoltaics mounted on the barn's south- and west-facing roofs produce 14,423 kilowatt-hours of energy per year, more than enough for various electricity-powered systems. Jeff says he and Nisa leaned heavily on McManus's team and Barrows for recommendations on equipping the structure; the architect even taught husband and wife how to cook on an induction surface. Yet the clients did not always comply with suggestions: When a potential subcontractor made the case for geothermal heating and cooling, Jeff rebutted that there was no other justification to dig a basement. "I've spent my life challenging experts," says the entrepreneur, who instead signed off on an HVAC system that uses air-source heat pump technology.

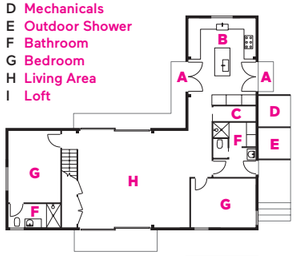
Reflecting further, Jeff says, "I didn't want to get caught in a bleeding-edge situation." Indeed, the Climate Barn breaks from the businessperson's tradition of being first to the party, because it is also intended as a reproducible nationwide model for green construction. To get the word out, the project team entered (and won) a Department of Energy Housing Innovation Award, while both McManus and Barrows are employing Climate Barn strategies in their latest commissions. And Jeff will continue proselytizing sustainability, using the Climate Barn as his pulpit: "Its message is that fully electric, fully solar, nonpolluting houses are now here. They are economical, comfortable, and beautiful." ■

"It's not spaceship stuff. It's here now, and it can save you money." JEFF TANNENBAUM, OWNER

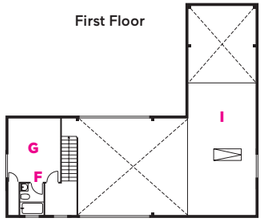
The Climate Barn N

ARCHITECT Shauna McManus
LOCATION Sagaponack, New York

A Entrance
B Kitchen
C Utility
D Mechanicals
E Outdoor Shower
F Bathroom
G Bedroom
H Living Area
I Loft

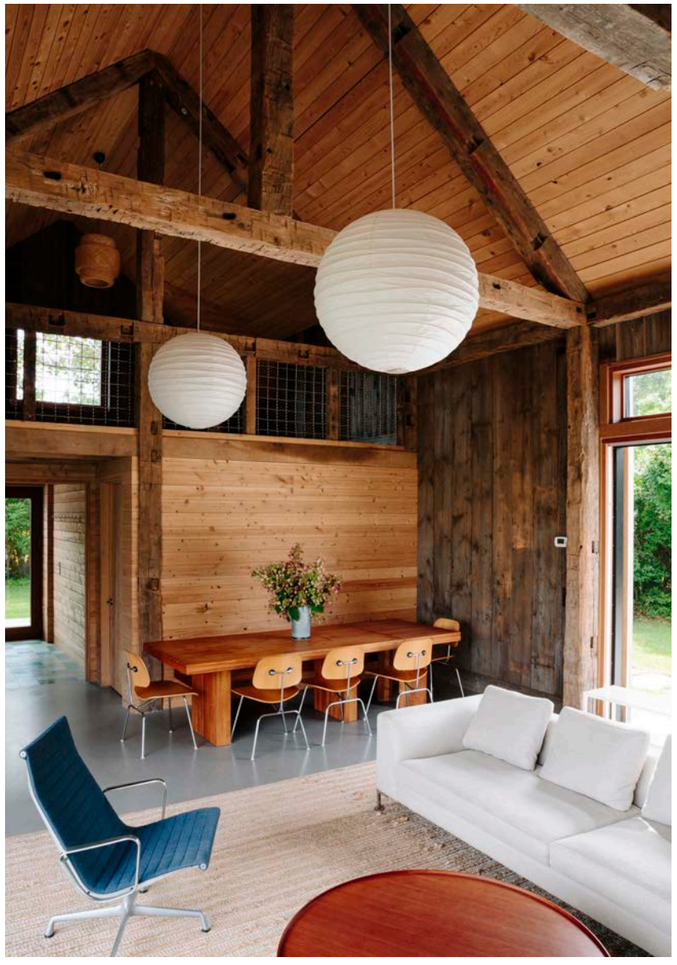


First Floor



Second Floor

ILLUSTRATION: LOHNES + WRIGHT



Triple-glazed windows and doors from Zola mitigate thermal gain (opposite, top). The all-electric kitchen (opposite, bottom) features oak cabinetry and a marble countertop. Electricity needs are more than met by an array of solar panels (above left) that produces 14,423 kWh/year. "It's a beautiful little power plant," says Jeff. The airy, light-filled interior (above right and right) is made of reclaimed timber and siding from a 19th-century barn.