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dwel: Wooler Mills House

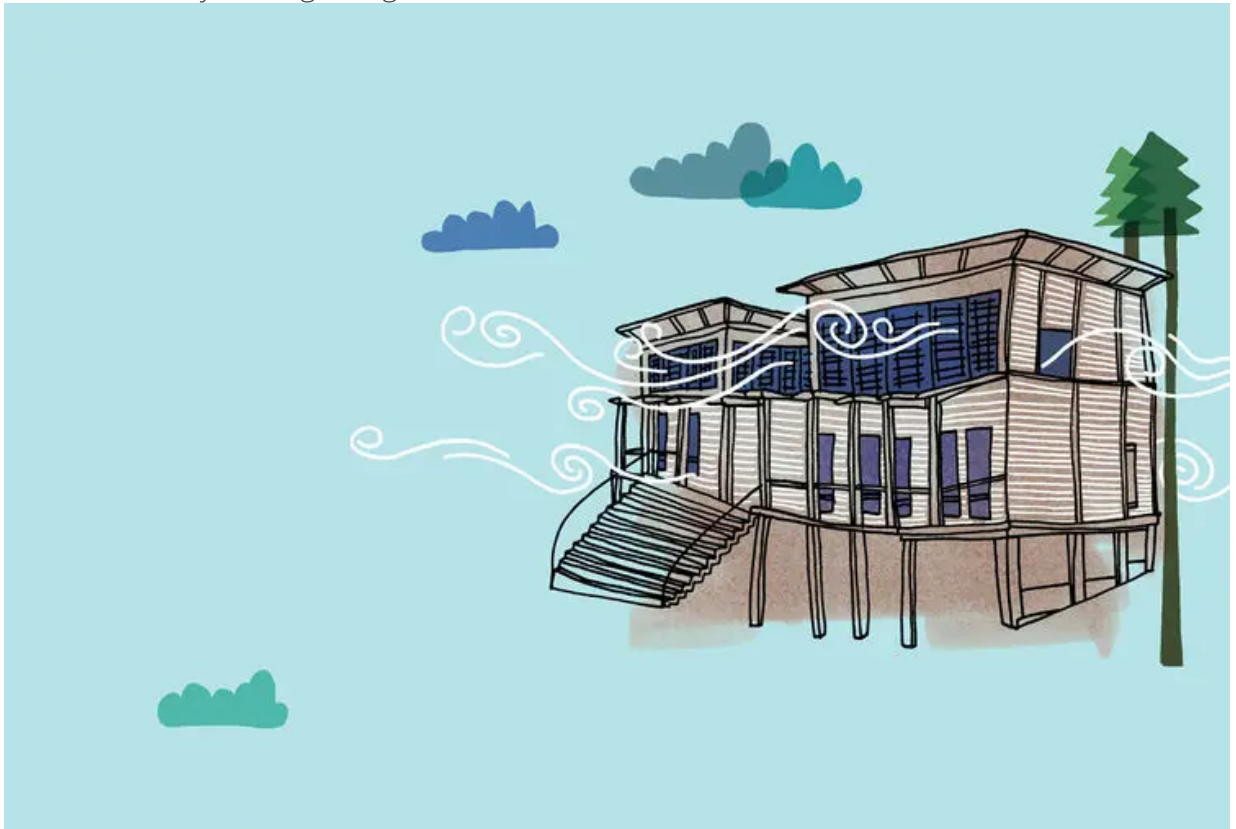
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The first misconception about going solar is that it is expensive.

PROJECT

Wooler Mills House

ARCHITECT Hays-Ewing Design Studio



The second is that it requires insanely complicated panels, transformers, and batteries. "We needed something simple, a way to use solar to cool the house more than anything," explains Christopher Hays, principal of Hays + Ewing Design Studio, which he runs with his wife, Allison Ewing. "That's how we were drawn to a passive solar setup."

Passive solar systems use sunlight to warm or cool a house without the use of electrical or mechanical equipment, and are organized around the creative use and placement of materials such as heat-retaining concrete floors, sun-blocking louvers, and ventilation systems that naturally distribute air throughout a room or house. Because they use no

during each month. Fixed louvers were installed over windows to provide shade areas during summer. As the sun moves in winter, direct sunlight flows into south rooms, providing heat. For south-facing windows, Hays and Ewing installed three-foot overhangs and light-filtering trellises. High-density Plycem panels work like concrete to retain daylight heat and distribute it in the house throughout cool nights, keeping the architects warm inside the house.

Using natural convective currents, fresh air flows through the living areas downstairs and exhausts through the second-story windows. Windows upstairs at each end of the east-west-running hallways allow for cross ventilation.

“Since this is a passive system, it doesn’t completely take care of the temperature in the house,” explains Hays, “but it does protect a large degree—and that makes it totally worth it.”

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