

local



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Solar panels line the roof of a Hana preschool classroom, the first energy-independent building in the state's public school system.

HANA TAKES LEAD IN GOING 'GREEN'

Students boost their skills in designing and building the first off-grid classroom in the state school system

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Hana High and Elementary School is helping lead the way for public schools in energy efficiency and renewable-power generation with the recent addition of a portable classroom powered entirely with solar energy.

Students in the East Maui community's building program for at-risk youth recently designed and constructed an off-grid preschool classroom, which holds the distinction of being the first energy-independent building in the state's public school system.

Under the watchful eye and tu-

telage of contractor-turned-teacher Rick Rutiz, students and recent graduates in the Ma Ka Hana Ka 'Ike program handled every phase of the project, from the building's foundation and roof — equipped with two dozen photovoltaic panels — to the murals decorating the exterior walls. The wooden structure also features a natural ventilation system in the roof, skylights that use the sun for natural lighting, a large wraparound lanai and built-in storage space under the building.

"We had participation from half the high school in one way or another," said Rutiz, founder and executive director of Ma Ka Hana Ka

'Ike, a Hawaiian proverb meaning, "In working, one learns."

"We worked with licensed contractors all the way through," he said of the portable classroom, which was completed in July. "Everything was done above code."

The nonprofit program, now in its 17th year, provides hands-on learning for high schoolers who struggle in a traditional classroom setting.

The portable classroom is just the latest example of a Ma Ka Hana Ka 'Ike project meeting community needs. Since 2000, Rutiz said, Hana youth have constructed 18 facilities at the school — including classrooms, offices, laboratories and pavilions — as well as more than 40 projects for other Hana nonprofits, 32 cottages for kupuna residents and more than 50 handi-

cap-access improvements throughout the community.

Students enrolled in the school's wood shop and building course receive class credit for the work. Those who work on projects after school hours or on school breaks are paid by the nonprofit.

"When kids choose to work after school, they get compensated in both a minimum wage salary and, on top of that, they get what we call 'tool money' — \$4 an hour toward any tool they want to purchase, which accumulates," Rutiz said. "The tools that we get are highly subsidized by all the manufacturers, who help us immensely. So the kids are able to outfit themselves with super-high-end tools at probably 50 percent of the store

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prices."

Rick Paul, the school's principal, said Rutiz's program is a huge asset for the school.

"They talk about ensuring kids are career- and college-ready — I mean these kids are doing real construction," Paul said.

But being a small, rural school, Hana doesn't benefit from the state's per-pupil funding formula the way larger campuses do. "We started running out of buildings and we have the capability to build things, but we don't have the money," Paul said.

To help the school expand its early-childhood education offerings, Ma Ka Hana Ka 'Ike two years ago sought grant funding from

the Legislature to construct two classrooms. The nonprofit ended up with about \$87,000, according to Rutiz, a fraction of the request. The program's students instead converted an existing classroom for the school's infant and toddler program to use, and put the grant money toward the preschool portable.

"IT'S A BEAUTIFUL facility, state-of-the-art," Paul said of the portable. "And it cost under \$100,000. Portable classrooms are usually \$300,000 to \$400,000 and those won't hold a candle to this classroom."

James Day, a Hana High sophomore who helped with the preschool classroom project, said he's most proud of the building's natural cooling system. The students incorporated a cupola in the roof to draw out hot air.



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Solar panels cover the classroom roof and the cupola, which draws hot air out of the building.

"It's like a natural ventilation system," he said. "If it gets too hot, the hot air rises and escapes through the jalousies so it's naturally cool."

Day credits the program for getting him interested in the construction field as a possible career.

"Honestly, I'm not much of a school kind of guy. I would rather work," he said.

"This class, you get hands-on experience with everything and it's more easy for me to learn. Getting credits for this is — it feels really nice that it's actually

going toward school."

Kaleb Estrella-Pu, a junior at Hana High, said he's most proud of the solar-energy system that students built for the portable classroom.

"The solar is amazing. It gives the building a lot of power," he said. "That's important so we don't have to depend on electricity in the room to power anything."

Having a renewable-energy source on campus is especially critical for an isolated community like Hana, where power outages routinely hit the school due to aging infrastructure.

ESTRELLA-PU credits the building program for helping him excel in other classes and providing him basic construction skills that he hopes to use later in life.

"I'm not really good at textbook work, but this (class) is easy for me. It's hands-on versus book

work," he said. "It's helped me with other classes, especially in math, like with fractions, because we learned how to use a tape measure."

Officials hope the off-grid project will serve as a model for other school projects.

"We are fortunate when private groups partner with our schools to provide services," Dann Carlson, the Department of Education's assistant superintendent for school facilities and support services, said in a statement.

"This project goes in line with our objectives for the department on a global scale regarding electrical efficiency and renewable energy."

Rutiz said Ma Ka Hana Ka 'Ike can help lead the way.

"Part of the statement we're trying to make is that we can do this elsewhere," he said. "We would be happy to lead the way on this."