

Pacific Business News (Honolulu) - March 8, 2010
</pacific/stories/2010/03/08/story3.html?b=1268024400%5E2990791>

PACIFIC BUSINESS NEWS

Friday, March 5, 2010 | Modified: Tuesday, March 9, 2010, 12:01am HAST

West Oahu project will pioneer net zero energy

Pacific Business News (Honolulu) - by [Nanea Kalani](#) Pacific Business News

More than 300 families have applied for future lots in West Oahu in what is slated to be the nation's first net-zero-energy community.

The 18-home Kaupuni subdivision in Waianae Valley, an affordable-housing project by the state **Department of Hawaiian Home Lands**, will consume no more energy than it generates, resulting in lower electricity bills and a low environmental impact, or carbon footprint — hence, the net-zero-energy designation.

The Kaupuni project is scheduled to break ground this summer, and the first home is expected to be completed in the third quarter of this year, said DHHL spokesman Lloyd Yonenaka. The entire subdivision will be completed by the end of the year.

The DDHL was awarded a \$10.2 million block grant through the federal American Recovery and Reinvestment Act to cover hard costs for the Kaupuni subdivison project as well as part of another master-planned community project in Kapolei.

The department says it will achieve net-zero-energy status for the three-acre site using renewable power and energy-efficient technologies in each of the homes as well as incorporating traditional Hawaiian practices to support a self-sufficient and sustainable lifestyle. The site also will include a community center, aquaculture fish ponds and farm plots.

“The Department of Hawaiian Home Lands is already a builder of affordable homes, but what we’ve realized is that we need to be building homes that are affordable to live in,” Yonenaka said. “We began thinking that way and figuring out ways to reduce energy costs. It’s not a cheap thing to do, but it’s something we have to do. We expect to learn a lot from this project and it will become the basis from which we develop future projects.”

All homes will be built for LEED Platinum certification, the highest “green” rating from the **U.S. Green Building Council**. They will have solar water heating, roof-top photovoltaic panels to generate electricity, and energy-efficient lighting and appliances.

The final price tag for the Kaupuni homes has not been set. A separate Hawaiian Homes project in Kapolei is selling three- and five-bedroom homes that come with solar water heating for between \$200,000 and \$300,000.

The homes in Kaupuni will be typical of Hawaiian Home Land houses. Applicants must be at least half Native Hawaiian to qualify for a lease for a land lot. The DHHL will award 99-year homestead leases at an annual rental of \$1, with an option to extend another 100 years.

The Kaupuni project has a financial qualification as well: The subdivision is being designed for families that are below 80 percent of the area median income for Oahu. The median is the point at which half of



Rendering courtesy: State Department of Hawaiian Home Lands

This rendering identifies the various components of a net-zero-energy home.

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households earn more and half less.

“Families will have to qualify financially, as well as have a willingness to work,” Yonenaka said. “This community will have a self-sufficiency component with agricultural and aquaculture elements. Self-sufficiency will not only be applied to the homes, but also on a community level.”

Yonenaka said DHHL currently has homes in other projects that are designated for those in the 80 percent category, but this will be the first subdivision where all homes are made available to that income group. He said the requirement allows DHHL to qualify for federal funding for the project. For other DHHL projects where there is no specific income requirement, lessees must be able to qualify for a mortgage to buy a home.

During the initial design phase, DHHL and Hawaiian Electric Co. signed a formal partnership agreement to collaborate on the Kaupuni project and future net-zero-energy projects. HECO is serving as a technical consultant for Kaupuni.

“Kaupuni is a model for how we can and should build communities, combining Native Hawaiian values with modern technology,” said Robbie Alm, HECO executive vice president. “We are committed to working closely with the Department of Hawaiian Home Lands to identify opportunities, programs and resources that support this project and future projects.”

Hawaii’s year-round warm weather gives the state an advantage in designing such buildings. In Mainland states where heating or cooling is required throughout parts of the year, more energy is needed to achieve a comfortable environment.

At least 10 other states — including Arizona, California, Florida and New York — have completed stand-alone homes or commercial buildings as net-zero-energy projects. But there are no completed multifamily housing communities in the U.S. with that designation.

A project in Washington state, which proposed building a 10-unit townhouse complex, has been stalled since last year due to the financial crisis. The \$5 million project, called zHome, was to be built in Issaquah, Wash., with net-zero-energy units that use 60 percent less water than the average home and emit net-zero carbon emissions. It originally was slated for completion in October 2009, but a new completion date has not been set.

As interest in net-zero-energy homes has increased, the federal Department of Energy has created financing opportunities. The department said it will award \$40 million over the next two years to various energy research organizations and building groups to develop net-zero-energy homes that consume 50 percent to 70 percent less energy than traditional homes.

nkalani@bizjournals.com / 955-8001

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