School of Architecture has Designs on Energy Savings

Much of Hawaii's electricity is generated from imported fossil fuels, therefore, nearly 90 percent of all energy dollars leave the State. As part of the Rebuild Hawaii Consortium, the School of Architecture at the University of Hawaii (UH) is using its design and energy efficiency expertise to help find ways to save energy dollars and keep them in Hawaii. Stephen Meder, a professor of architecture at UH-Manoa and Rebuild Hawaii Consortium member, has spearheaded several energy-efficiency projects that target the low-income housing, educational, hospitality, and business sectors.

Early Successes

In 1995, the UH School of Architecture established an energy-efficiency program on the university's main campus, which consolidated its billings from Hawaiian Electric Company, Inc. (HECO) and ended up saving the university about $12,000 a month. Through this successful project, a subcommittee on energy education was established. The subcommittee identifies where the university can save energy dollars. Initial estimates show that the main campus has the potential of saving over $2 million a year through energy-efficiency programs.

In 1999, the UH School of Architecture, in cooperation with the State Energy Office at the Department of Business, Economic Development and Tourism (DBEDT), sponsored workshops on energy-efficiency mortgages (EEMs). Hawaii utilities HECO, Maui Electric Company (MECO), and Hawaii Electric & Light Company (HELCO) initiated an ENERGY STAR® labeling program for EEMs and solar hot-water heaters, allowing low-income homeowners to qualify for mortgages with lower points, or initial investments at time of home purchase. To date, 3500 homeowners have installed systems and qualify as ENERGY STAR partners.

Making Rebuild America Part of the Education

The Fall 2000 semester saw three Rebuild America partnership projects as part of the School of Architecture's design curriculum. Two projects are aimed at assisting the State of

Passersby learn more about efficient lighting and other business equipment technologies at the Green Office display, which was developed by Stephen Meder.

Hawaii's low-income housing agency to serve its clients. Once needs within the community were identified and addressed, School of Architecture design professors, Amy Anderson and Mark Anderson, tailored their studios to design 20 energy- and resource-efficient, low-income

PARTNERSHIP FACTS:

- **Targeted Buildings:**
  University and college, low-income housing, hospitality, and business
- **Total Energy Savings:**
  University of Hawaii - approximately $720,000 over the past five years ($12,000 a month)

- **New & Notable Innovations:**
  Sponsored energy-efficient morgtage workshops and to date, 3,500 homeowners have qualified as ENERGY STAR partners

  Assisting the low-income housing community to design energy- and resource- efficient homes

close-up

REBUILD AMERICA

U.S. Dept. of Energy
Rebuild America

homes for the Maili II project and to develop a large scale community plan and schematic building design for the Kuhio Park Terrace housing in Honolulu. In each case, the purpose is to give the Housing & Community Development Corporation of Hawaii (HCDCH) a greater variety of options from which they may make more informed decisions and to extend students' energy-efficient design education.

The third project is with the Maui Community College (MCC). In this case, MCC Provost Clyde Sakamoto and Maui Institute of Sustainable Technologies Director, Don Ainsworth, looked at the School of Architecture's Green Office and "Greening the Campus" programs and saw those initiatives as perfect complements to their existing energy-efficiency and sustainable technologies work. Two graduate students, Dean Johnston and Steve Peterson, enthusiastically accepted the project and are developing innovative designs for a small complex of buildings that will house offices and meeting spaces on the Maui campus.

"We believe that there are tremendous energy and resources to be saved in this sector, as well as an opportunity to educate visitors on energy efficiency and what that means in making Hawaii a desirable visitor destination."

— Stephen Meder, UH School of Architecture

Green Projects

Three "green" projects emanating from the School of Architecture are under consideration by the Rebuild Hawaii Consortium. The first initiative, Greening the Campus, is an effort for educational institutions to identify and follow pollution prevention activities to save resources and energy, and allow environmental learning in all relevant courses and activities. On March 5, 1999, Anthony Cortese, President of Second Nature, which advocates environmental sustainability in higher educa-

tion institutions, presented two half-day workshops on greening Hawaii's campuses, focusing on ways to save resources, energy, and school budgets. The Consortium is now encouraging Hawaii's Community Colleges to support the Greening the Campus program.

The Green Office Project revolves around a mobile display featuring energy-efficient office appliances that lead to smart energy use, recycling, and indoor air quality. First shown at the Building Industry Association, the display was sponsored by DBEDT and the School of Architecture and is currently administered through the Honolulu Chapter of the American Institute of Architects' Energy & Environment Committee. Presentations to professional and trade groups accompany the display.

The Hawaii Green Hotel Campaign and Demonstration Project plans to work with the hospitality industry to increase energy and resource efficiency by promoting clean energy production, and in turn, reducing pollution and enhancing economic strength. Facilities, such as the Grand Wailea Hotel, are becoming more interested in learning about replacing or upgrading inefficient HVAC systems, electric hot water heaters, pumps and controls in swimming pools, golf course irrigation systems, and outdated lighting systems.

TO LEARN MORE ABOUT THE UNIVERSITY OF HAWAII-SCHOOL OF ARCHITECTURE, CONTACT:

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