

Rebuild Hawaii

Partnering with Rebuild America



Working together for energy and resource efficiency

Hot Topic: Portable Classrooms

The uncomfortable conditions for students trying to learn in Hawaii's portable classrooms is again in the news. Every few months the media releases stories on how something needs to be done to provide students and teachers with some relief from the heat. The Department of Education (DOE) is actively looking for ways it can improve the conditions inside its portable classrooms. In January, the Rebuild Hawaii newsletter (Number 8) highlighted a partnership between DOE and University of Hawaii School of Architecture to provide a cooler future for Hawaii schools. Their Portable Classroom Design Guidelines project will start this summer.

Recently, KGMB newswoman Jade Moon brought portable classrooms back into the spotlight. She did a series of news segments and wrote an article on how hot and uncomfortable portable classrooms are in Hawaii. In her editorial in MidWeek called Trying To Learn In A Hot Box she wrote about the conditions in the 25 portables at August Ahrens Elementary School, the largest elementary school in the state. Students there suffer from unbearable heat and try to complete assignments while sweat drips from their foreheads onto their papers. The Star-Bulletin has also run stories that report how bad conditions in portables can get. Teachers speak about how their students have difficulty cooling their bodies and concentrating on their schoolwork. It's been reported that students at King Kamehameha III Elementary School in Lahaina get so hot that they get sick. Temperatures in portable classrooms can reach upwards of 100 degrees and students are encouraged to bring water bottles to stay hydrated.

While air-conditioning appears to be the easy solution it is very costly and in older portables it's inefficient. Older portables are not sealed well and cool air escapes out of the gaps around doors and windows. Also, some older portables do not have the electrical capacity to support AC units. *Continued on page 3*

Hawaii's First Commercial Energy Star Building

Alii Place at 1099 Alakea Street is Hawaii's first commercial building to receive the EPA Energy Star Label. This means the building is in the nation's top 25% of all office buildings for energy efficiency while maintaining indoor air quality, thermal comfort and lighting requirements. PM Realty Group manages Alii Place and worked closely with Pacific Energy Services to help the building qualify for the EPA label.

Energy Efficient Measures at Alii Place

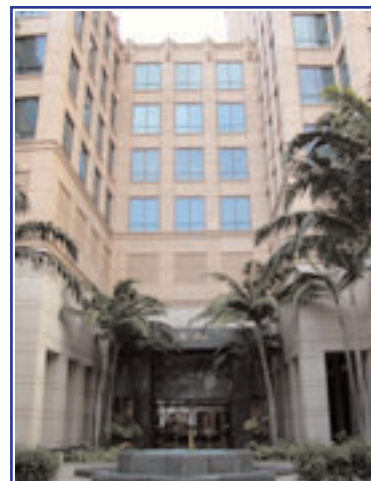
- ◆ Window Film
- ◆ Variable Air Volume Devices
- ◆ New York Chillers
- ◆ Efficient Pumps
- ◆ Energy Management System
- ◆ T8 Lights with Reflectors
- ◆ Light Emitting Crystal Exit Signs

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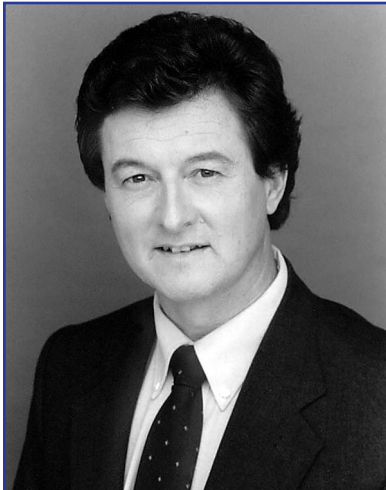
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PV Fans cooling down a Nuuanu Elementary classroom (top two black colored fans side by side).



President's Corner



*Rebuild Hawaii Consortium
President Steve Holmes*

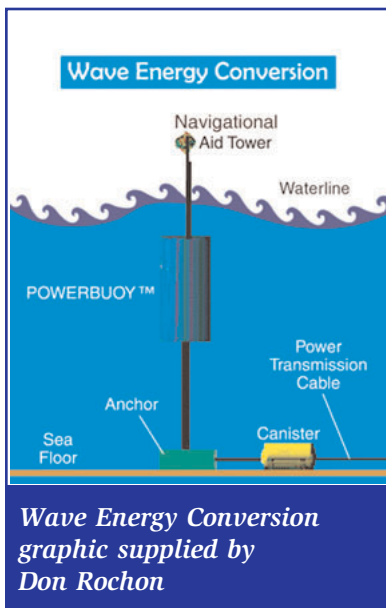
Much of the focus of the Rebuild Hawaii Consortium in the past has been the effort of federal agencies responding to mandates under the Energy Policy Act of 1992 and Presidential Executive Orders--which further ratcheted up the mandates. Because of the large federal presence in Hawaii, we have made great strides in fostering energy efficiency under the mandates. We have also seen considerable progress by state agencies and the counties.

Since the federal mandates were not accompanied with funding, energy financing and performance contracting have been two very effective and powerful tools leading to the success to date. There is a good news story here that we should be sharing with the community at large. These are the tools that can help transform our economy in Hawaii, and they do not necessarily require any up-front capital investments. A broader understanding of how these financing mechanisms work is critical to our efforts to promote energy efficiency projects.

Critical to the long-term success of Rebuild Hawaii is our ability to educate the community about these financing options. We need to stress that energy efficiency projects can proceed even in a slow economy because they can be self-financing. We should also stress the fact that these projects create jobs. We need to "sell" this important idea of projects that self-finance, don't compete with other funding needs, and, as a further incentive, can also bring in utility rebates.

These concepts have been underutilized as a marketing tool, and Rebuild Hawaii can focus its future efforts on explaining the assortment of benefits that can accrue with energy efficiency projects.

MCBH Begins Wave Energy Project



*Wave Energy Conversion
graphic supplied by
Don Rochon*

The Marine Corps Base Hawaii (MCBH) at Kaneohe is in the process of implementing a demonstration wave energy project. The project will consist of two Ocean Power Technologies PowerBuoys, wave buoys that are capable of generating 20kW of electricity each. Along with Navy and Marine Corps environmental specialists, Belt Collins Hawaii is currently conducting an Environmental Assessment (EA) for the project. After completion of the EA, the buoys could be anchored offshore from the base by early 2003. The project is intended to develop and validate the technology base required to design and reliably operate wave energy converters in the ocean. A side benefit of the project will be to connect the power generated from the buoys to an existing electrical grid that serves the base.

The PowerBuoys are 40 to 65 feet in length and will be anchored to the sea floor and ride between 4 to 13 feet below the ocean surface. As the waves rise and fall, the buoys move up and down pumping hydraulic fluid to a hydraulic motor, which turns a generator and produces electricity. A shielded underwater cable will transport the electricity to shore and into the base's electrical grid.

The project is being funded by a federal grant and sponsored by the Office of Naval Research (ONR). Through its Small Business Innovative Research (SBIR) program, the ONR has hired Ocean Power Technologies (OPT) Inc. to develop and build the system. The Naval Facilities Engineering Service Center (NFESC) in Port Hueneme, California is managing the project, with coordination and engineering support from Pacific Division (PACDIV), Naval Facilities Engineering Command at Pearl Harbor and Marine Corps Base Hawaii.

For more information, call the Marine Corps Base Hawaii Public Affairs Office at (808) 257-8840.



Portable classroom with PV panels on the roof and fan vents on the outside.

Hot Topic: Portable Classrooms

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The DOE is testing other methods to try and cool down portable classrooms including photovoltaic fans, roof insulation, floor and ceiling vents, and landscaping. At Nuuanu Elementary School PV panels were mounted on the roof and power fans in the classrooms to help vent the heat out. Teachers in these classrooms report that the fans do provide some relief from the heat with one drawback being that the fans can be noisy. Roof insulation has been installed in some portables and has proven to be an effective measure in reducing heat gain. Floor and ceiling vents were tested in one portable classroom at Waianae High. The design has shown to be effective in cooler climates but failed to make a marked difference in the hot and dry Leeward District. Landscaping is applied wherever possible but due to the expense of putting in larger shade trees this tends to be cost prohibitive.

The Portable Classroom Design Guidelines project will monitor the indoor environment of portables on the West side of Oahu. Results will be analyzed and used to develop design solutions that will increase classroom comfort levels. The design guidelines will be presented to the Department of Education to help their efforts in cooling students down and providing them with a better learning environment.



Darren Kimura (left) with ECH Vice President Duane Ashimine (right).

SBA Recognizes Darren Kimura of ECH as Young Entrepreneur of the Year

Darren Kimura, President of Energy Conservation Hawaii (ECH), was recently named the U.S. Small Business Association's (SBA) 2002 Young Entrepreneur of the Year for Hawaii. He was also recognized as SBA's Young Entrepreneur of the Year for Region 9, made up of California, Arizona, Hawaii, Nevada, and Guam. ECH is a Rebuild Hawaii Business Affiliate that offers energy services to businesses that reduce overhead, increase energy savings, and improve indoor working conditions.

Upcoming Meetings and Events

How to Create Opportunities for Distributed Energy in Hawaii Forums for Public Comment

- ◆ Wailuku, Maui: Tuesday, July 9, 2002, 2:00-4:00 PM
- ◆ Lihue, Kauai: Wednesday, July 10, 2002, 9:00 AM-Noon
- ◆ Hilo, Hawaii: Thursday, July 11, 2002, 1:00-4:00 PM
- ◆ Keahole, Hawaii: Friday, July 12, 2002, 9:00 AM-Noon
- ◆ Honolulu, Oahu: Monday, July 15, 2002, 9:00 AM-Noon

If you plan to attend please contact Anna Wenz at awenz@dbedt.hawaii.gov or phone 808-587-3801.

Environmental Purchasing and Practices Conference and Expo Greening Government and Business

Thursday, July 18, 2002
Hilton Hawaiian Village
Honolulu, Hawaii

For more information contact Cynthia McKeague at cynthia.mckeague@gsa.gov or phone 541-1776

2002 State Energy Program/Rebuild America National Conference

July 29-August 1, 2002
New Orleans, Louisiana

For more information go to www.2002conference.com.

2002 Efficient Electro Technology Exposition & Conference

October 23 & 24, 2002
Sheraton Waikiki

For more information contact Ms. Sam Nichols at snichols@hei.com or phone 808-543-4753.

Rebuild Hawaii

Rebuild Hawaii is a statewide consortium dedicated to promoting efficient energy and resource utilization.

Rebuild Hawaii is working with Rebuild America, a U.S. Department of Energy program, to help community partnerships make profitable investments in existing buildings through energy-efficient technologies.

The partnering of public and private business interests enables Rebuild Hawaii to employ innovative solutions to promote economic growth, lower energy costs, create jobs, and protect the environment.

There is opportunity for anyone to join Rebuild Hawaii. It is a voluntary program with no membership fee.

For more information contact:

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Economic Development &
Tourism
Energy, Resources, and
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Or contact:

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jenwebb@hawaii.rr.com

Visit our web site at:

www.hawaii.gov/dbedt/ert/rebuild/index.htm

Rebuild Hawaii Projects

Rebuild Hawaii currently supports the following projects:

- ◆ University of Hawaii School of Architecture Portable Classroom Cooling Design Guidelines
- ◆ Hawaiian Electric Company Energy Smart Schools project to increase awareness of energy efficiency in schools and communities on the islands of Oahu and Maui
- ◆ Hawaii County Energy Smart Schools project
- ◆ Kauai Lagoons Golf Course Energy Audit
- ◆ Na Makani Energy initiative, a community-sponsored rural project in North Kohala, Hawaii, that is planning for a "soft energy path" in the 21st century based on energy conservation and renewable resources
- ◆ Greening The Campuses, a project to implement resource efficiency at the community colleges
- ◆ Green Office exhibit and awareness program
- ◆ Workshops and technical seminars
- ◆ Multi-disciplinary programs to teach energy and resource management skills at universities and schools

Consortium Members

City & County of Honolulu
County of Hawaii
County of Kauai
County of Maui
Department of Business, Economic
Development and Tourism
Department of Education
The Gas Company/Citizens
Energy Service
Hawaii Army National Guard
Hawaiian Electric Company, Inc.;
Hawaii Electric Light Co., Inc.;
Maui Electric Company, Inc.
Housing and Community Development
Corporation of Hawaii
Judiciary
Kauai Electric/Citizens Energy Services
Hawaii Public Library System
University of Hawaii Community Colleges
University of Hawaii at Hilo
University of Hawaii at Manoa,
School of Architecture
U.S. Department of Energy, Pacific Liaison
U.S. Department of Housing and
Urban Development

Affiliates

Eco-Lite
Energy Conservation Hawaii
Hawaii Society for Healthcare Engineering
SSFM Engineers International

Rebuild America Business Partner
Academic Capital

Meetings

April 2002

Ray Carr and Clyde Young presented on the Hawaii County Department of Water Supply. Jim Dorian spoke about the Center for Asian-Pacific Infrastructure Development. Derek Sonoda provided a sneak preview of The Power CD from HECO.

January 2002

Cyane Dandridge, Strategic Energy Innovations, facilitated a Consortium planning meeting. Consortium members worked together and prioritized needs and resources, discussed goals for the future, and identified potential new projects.

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