

## Rebuilding Hawaii's Schools

### *You Can't Learn Everything from Books*

Sometimes you can read all the books, listen to all the experts, plan all you want, and you still don't know how things will turn out until you go forward with a project. The Rebuild Hawaii Schools community partnership, led by the Hawaii State Department of Education (DOEd), did its homework on performance contracting, but still had to learn some lessons the hard way after trying to implement this innovative financing plan for retrofits.

The partnership's goals were straightforward: to conserve energy and increase student learning levels by improving the buildings and facilities of over 250 school buildings in the Department's educational system. Gene Fong, the DOEd Energy Project Engineer, was assigned to oversee the project. The plan calls for improvement to the buildings and facilities of 18.6 million square feet of space.

### *Retrofits Phased In*

In view of the limited available funding for repairs and maintenance of State of Hawaii school facilities, the Department of Education partnership sought to finance, replace and renovate existing old, dilapidated facilities and energy equipment by using performance contracts. It was envisioned that the monetary

savings from the decrease in energy consumption of new equipment would be used to pay for the costs of the replacement and renovation.

The work was planned to take place over two distinct phases. The first phase was a pilot performance contract for three schools on the Island of Oahu, with a combined floor space of 278,000 square feet, to determine if this approach to retrofitting schools was appropriate, feasible and cost-effective. The three schools selected for the pilot were Roosevelt High, Koko Head Elementary School and Lunalilo Elementary School. The U.S. Department of Energy's Oak Ridge National Laboratory lent technical assistance during this phase by reviewing the technologies in the proposals. Based on the results of the first phase, the second phase would be to issue similar contracts for Hawaii's remaining schools.

The Phase I energy audit conducted by a lighting contractor showed that there were sufficient cost savings from energy consumption reduction to retrofit bulbs and ballasts, but not for replacement of the light fixtures. The contract was issued to meet those specifications. When the contractor constructed a bank of light fixtures for demonstration, inspection showed that the product did not meet DOE requirements and the contract was terminated.

#### **PARTNERSHIP FACTS:**

- **Total Building Area Committed:**  
18.6 million square feet (250 school facilities)
- **Completion Date:**  
Ongoing



## *Turning the Page*

The Department of Education decided that, based on the outcome of the pilot performance contract on the three schools in Phase I, performance contracting would not be cost-effective for Phase II. The Department decided to investigate other sources of funding—including lease purchase, request for increases in repair and maintenance budgets and municipal leasing.

Municipal leasing allows a State or local government to assume some of its own risk for borrowing money, at rates much lower than prime, or what an ESCo may offer through a commercial lease. With municipal leasing, government agencies and non-profit organizations are granted tax breaks through selected financing companies.

As part of Phase II, another project was initiated to retrofit or replace the lighting at Baldwin High School on Maui Island, in partnership with Maui Electric Co. The energy audit confirmed what was found on Oahu, that saving in energy reductions would only cover the cost of replacement of lamps and ballasts (with a five-year payback period.)

Also as part of Phase II, in partnership with Hawaii Electric Light Company (HELCO), Maui School District Office, Maui Schools, Hawaii Department of Business, Economic Development, and Tourism (DBEDT), Maui Electric Company, and Hawaiian Electric Company, Inc., DOEd is conducting energy audits of the public schools on Maui with a total area of approximately 1.3

million square feet. This audit basically will determine where whole light fixtures will be replaced and where only lamps and ballasts will be replaced.

## *Textbook Learning*

The lessons learned from this project will form the basis for DOEd future action in other school districts in Hawaii. Sometimes projects that look good on paper don't work well in the real world, but even those projects are a learning experience.



### **TO LEARN MORE ABOUT THE REBUILD HAWAII SCHOOLS PARTNERSHIP, CONTACT:**

**Gene Fong**, Engineer  
Hawaii Department of Education  
1037 S. Beretania Street • Honolulu, HI • 96814  
Phone: (808) 586-3456  
Email: Gene\_Fong@notes.k12.hi.us



Visit the Rebuild America Web site at: [www.rebuild.org](http://www.rebuild.org)  
Or call the Energy Efficiency and Renewable Energy Clearinghouse at: 1-800-DOE-3732