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Cypress slashes energy costs

Innovative audit reveals way to save over \$1 million a year

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Cypress Semiconductors Inc. will cut its energy costs by 43 percent this year, thanks to an innovative audit system that better controls heating and air conditioning usage.

And Cypress' success has some other Silicon Valley companies reevaluating their energy programs.

When the \$1.1 million project is completed in June, all five buildings at Cypress' First Street campus will carry the federal Energy Star label, one of only a handful of campuses and buildings in California, says Alan Pong, spokesman for Hayward-based Ferreira Service Inc., which conducted the energy audit for Cypress.

The Energy Star label is given to companies that can keep energy usage under 16 kilowatts a square foot. Cypress was at 24 kilowatts a square foot before the retrofit and expects to come in at 11.1 kilowatts. The average Silicon Valley building is believed to be in the 25-30 kilowatt range.

Cypress expects to cut its annual energy costs from \$3.1 million in 2004 to \$1.9 million in 2005.

The project is being closely watched by several large Silicon Valley companies, including General Electric which recently signed a contract to have one of its Fremont buildings audited by Ferreira Service.

"We hemmed and hawed for a while but were impressed by what they were able to do (at Cypress)," says Dale Gee, business operations leader for GE's Fremont complex.

GE has been guaranteed a \$200,000 reduction in its \$1 million annual energy bill on its 35,000-square-foot building, Mr. Gee says. The project is expected to pay for itself in less than one year, he says.

"This is something of great interest to (facility managers) all throughout GE," Mr. Gee says. "If it works here, we will be looking to do it throughout the GE system."



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Joe Palladino, installation technician with Ferreira Service Inc., upgrades services to monitor and control energy needs.

AUDIT: Results at Cypress inspire other firms to review heating, cooling systems for savings

Other recent successes including the city of Menlo Park, which saved \$20,000 on energy costs on a 30,000-square-foot library, and nVidia of Santa Clara, which cut its energy usage by 36 percent on four buildings totaling about 500,000 square feet.

Overall, California saved as much as 5,570 megawatts during peak-use times since 2001, according to California Energy Commission records.

“Those numbers don’t lie,” says Terry Rich, executive vice president of Ancillary Services Coalition, a Southern California-based company that develops demand-relief programs for businesses. “California had one of the best conservation programs ever witnessed in the world.”

However, only about 1,200 megawatts of that is permanent, the same report shows.

Most of that energy savings came from manually turning up air conditioning thermostats, dimming lights and turning off computers when not in use. When the energy crisis ebbed at the tail end of 2002, so did many of these conservation practices, Mr. Rich says.

“There is an element of corporate responsibility to operating in Silicon Valley,” says Andrew Michael, the Bay Area Council’s vice president for sustainable development. “(Energy) is a business matter and there is a very basic compatibility... we’re spending more money for energy. Saving money interests everybody.”

What caught the attention of GE and Cypress was Ferreira’s willingness to guarantee its findings.

There are numerous companies offering energy audits, including Pacific Gas & Electric Co., but no one so far has offered to guarantee its results, says Cypress facility manager Kevin Kassekert.

Ferreira representatives were willing to guarantee Cypress the \$1.1 million savings, promising to make up the difference themselves if that savings wasn’t achieved.

“They were willing to put their money where their mouth was,” Mr. Kassekert says. “It made it a no-brainer for us.”

At a \$148,000 cost to Cypress, after a \$114,000 rebate from PG&E, Cypress experienced \$185,000 in energy savings from its 111,000-square-foot Building 6.

Current estimates have Cypress spending \$1.06 million to retrofit all five buildings that make up its First Street campus. The firm will get a \$691,000 PG&E rebate and a guaranteed annual energy savings of \$1.1 million.

Most of the savings come from installing a new direct digital control system on its heating and cooling system and modifications to the ventilation systems to better control air flow.



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Service techs Bryan Gabriel, left, and Alan Hazelberg wire a unit as part of an energy system upgrade at Cypress. The changes are part of an overhaul expected to cut energy costs in half.

Cypress has long been an energy conscious company. It has installed a 235-kilowatt solar power array at First Street that provides 13 percent of its electricity. It is the largest privately-owned sun-powered energy system in Silicon Valley.

However, the overriding reason for the audit was a simple one, Mr. Kassekert says.

“Our target was to save money,” he says. “Money is tight and we have other projects competing against this. We did it because we could save money.”

The savings for Cypress Building 6 was particularly amazing because the building is only two years old.

The building, originally designed to hold a data center as well as office space, is now being used strictly as office space. However,

the heating and air conditioning units were designed to handle the exacting nature that data centers need, Mr. Kassekert says.

Cypress is conducting an internal energy audit of its buildings in several states and the Philippines to see if it can reproduce the savings it achieved in San Jose.

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Dale Gee
GE

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