

Affordable ENERGY MONITORING

This spec home shows how viewing your energy consumption can be easy and inexpensive.

SYSTEM DESIGN AND INSTALLATION

Electronics2you
Wilmington, N.C.
www.electronics2you.com

BUILDER

Mark Johnson Custom Homes
Wilmington, N.C.
www.markjohnsoncustomhomes.com

TED FOR CONTROL4 KIT

Peak Software
Mesa, Ariz.
www.peaksoftwarecorp.com

Home energy monitoring may be about to go mainstream. It's made it into at least one spec home, this one constructed by Mark Johnson Custom Homes in Wilmington, N.C.

It's part of a green home that the builder intends to make LEED (Leadership in Energy and Environmental Design) certified, meaning it has many eco-friendly and sustainable features, from the insulated concrete form (ICF) walls to low-flow water fixtures to a rainwater harvesting and underground irrigation system that will save \$70 to \$100

a month in water bills.

Energy efficiency features include Energy Star-rated appliances from Bosch, CFL (compact fluorescent lamp) lighting throughout, and an energy management system that's a combination of a Control4 home control system and The Energy Detective (TED) energy monitoring device.

TED is wired to the home's electrical panel to monitor the total electricity usage in the house. You enter the kilowatt-hour (kWh) electric rate you pay, and TED reports to the readout of a small

Not only is this spec home wired for a 5.1-channel surround-sound system, information on the home's energy consumption can appear on the flat-panel TV, thanks to an energy monitor tied to a Control4 home automation system.

display your kilowatt hour usage, monthly and annual spending, and your carbon dioxide usage. The information is delivered over the home's existing electrical powerline.

The Control4 system allows that information to be monitored on the TV, along with Control4 menus to operate lighting, audio/video and other systems, if they're connected.

"If you start expanding on the system with Control4 and TED, you can monitor at the appliance level," says Jason Walter of custom electronics pro Electronics2you, based in Wilmington, N.C. "The Control4 system has outlet switches, or you can do it out of the box with the TED."

Control4 and TED work together with drivers for each written by Peak Software in Mesa, Ariz. That way, the Control4 system can share the data TED collects and show it on a flat-panel TV, like the one in the living room.

For custom builder Mark Johnson, the decision to include an energy monitoring system was a natural outgrowth of the company's commitment to building a green home. "We decided on using insulated concrete forms on the exterior, and we realized what we could do with the whole house," says Kevin Johnson of Mark Johnson Custom Homes. "Once you can get a display at the laptop or TV screen, and you can see hour by hour what you're spending, that's when people will make some changes and save more energy."

The rainwater harvesting system was a large part of the project, Johnson says, because water conservation is a big issue in the community. Problems with the local sewer system helped drive that decision, making water dear to everyone. So instead of using 2,000 gallons of water to irrigate the lawn, the rainwater harvesting and underground irrigation system uses 382 gallons per watering session. **EH** —Steven Castle

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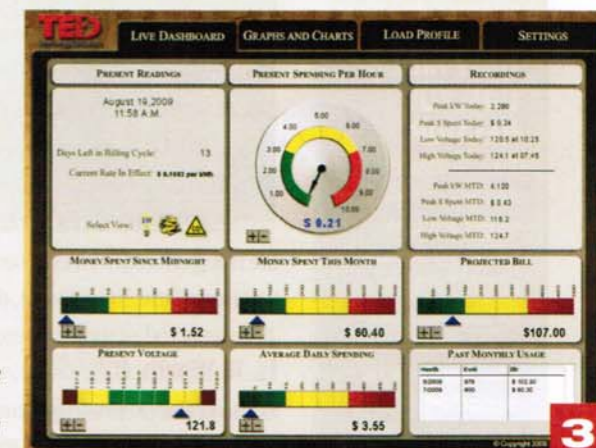
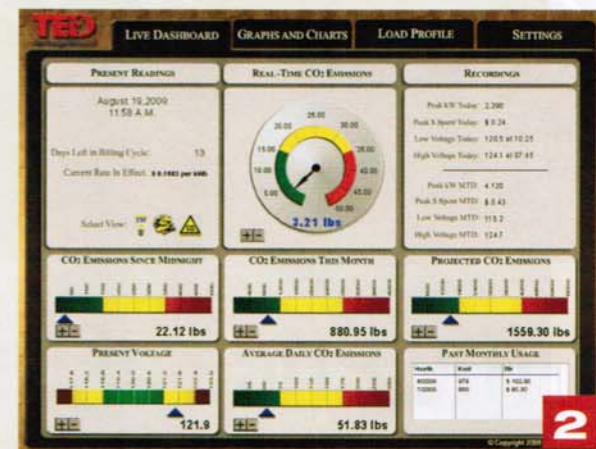
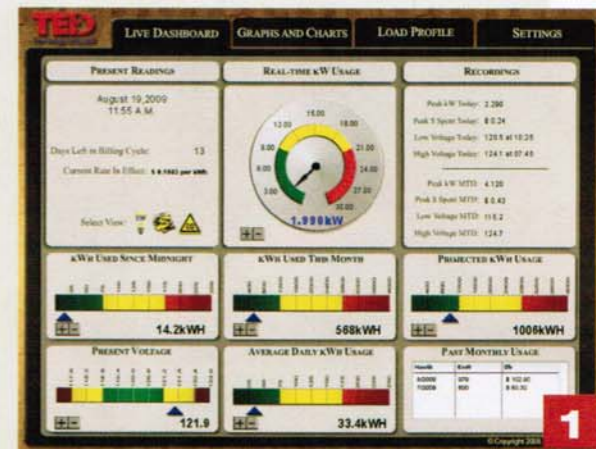
SAVING ENERGY AND MONEY

You don't need to pay a fortune to have basic energy monitoring in your home. A TED system starts at \$120, uninstalled, but does not include data logging software. Those systems start at \$165.

Using TED with Control4 requires a basic Control4 processor for \$500, plus Peak Software's TED Energy Monitor for Control4 (\$434 to \$551 for 200- and 400-amp service, respectively). Peak Software's package consists of four components:

- A Measuring Transmitter Unit (MTU) located in the circuit breaker panel using two Current Transformers (CTs).
- Receiving Display Unit (RDU) located in the home.
- Personal Meter Data Repository (P-MDR) running on a local PC or TED Energy Monitor for Control4 Server.*
- Control4 interface driver running on the local Control4 controller.

*The optional Energy Monitor Server from Peak Software can replace a PC for \$1,319. You may also have to pay for installation and programming.



1. The kilowatt hours of energy used in the home is still in the favored "green" range, with projected kWh usage on the right.
2. CO₂ emissions are shown in real-time, through the month and a projection of that month.
3. The spending dashboard shows present costs, a projected bill for that month and previous bill totals.