CASE STUDY

GreenHome, with Help from Watt Stopper, Uses 50% Less Energy than Most Homes

Mainstream GreenHome

Raleigh, NC

Cherokee Investment Partners, a private equity fund managing institutional capital to acquire environmentally impacted properties, recently challenged itself to oversee construction of a sustainable residential project that, to prospective owners, would look and feel like a traditional home. The Raleigh, North Carolina project, dubbed the National Homebuilder Mainstream GreenHome, includes energy saving occupancy and vacancy sensors and time switches from Watt Stopper/Legrand throughout the home.

The Mainstream GreenHome, a living and evolving demonstration project that saw its first residents in 2008, has proved to be a resounding success, meeting environmental and efficiency goals and gaining public acceptance. It earned the first LEED for Homes Platinum certification in the Southeast and was awarded a 2008 Gold Energy Value Housing Award by the National Association of Home Builders (NAHB) Research Center and the Department of Energy. It has garnered recognition for outstanding contribution to education and society, including the City of Raleigh's inaugural Overall Environmental Award in 2008.

Criteria for selecting lighting controls

The creator and force behind the project, Jonathan Philips, is a recognized national leader in bringing green to the mainstream and was Senior Director and partner of Cherokee when conceiving of the project. Philips oversaw a team that researched products, materials and contractors for the home. Philips, now co-founder and Managing Director of the spin-off Anka Funds, wanted controls that were intuitive to operate, would control a wide variety of loads, were reliable and would fit with the home's decor. After examining multiple brands, he selected Watt Stopper residential vacancy sensors and digital time switches based on the look and feel, the ease of use and the breadth of the line. These controls curtail energy use by automatically turning off the connected loads, either after a space has been vacated or after a selected period of time.

"Lighting technology is a perfect example of where green building technology intersects with

Watt Stopper Products Used:

RS-250 Vacancy Sensor

RH-250 Multi-way Vacancy Sensor

RS-350 Dual Relay Vacancy Sensor

RD-200 Dimming Vacancy Sensor

RT-50 Time Switch

RT-100 Time Switch

GreenHome Learning Experience

Cherokee and Anka Funds are investment companies with a "resolve to provide superior financial, environmental and social returns for investors, partners and communities." Personnel are proud to have achieved their goals of commissioning a sustainable home, built by a conventional builder without experience in this type of construction. They proved that the process was viable and the project served as an education platform for local builders, homeowners, remodelers and real estate agents.

The GreenHome includes reclaimed and renewable materials and renewable energy sources. It is water-wise and energy-efficient, designed to use 50% less energy than a traditional home, and 70% less grid-based energy. The lessons of the GreenHome are being shared with the public, builders, architects and specifiers. Both Cherokee and the Anka Funds, along with the many builders who have toured the home, are planning to utilize the project lessons-learned to influence future development on their sites.

mainstream convenience, comfort and aesthetics," said Philips. "At Anka's Real Estate Opportunity Fund, we're taking severely distressed real assets, infusing them with capital and creativity, and repositioning them into productive and more planet-friendly uses. The use of Watt Stopper sensors illustrates how select green decisions can reduce our environmental impact while translating on every dimension to greater stakeholder and strong investor returns on capital investment."

The research team specified multiple sensors, relying on RS-250 sensors and RH-250 multi-way sensors for the lion's share of the applications. The RS-250 sensors control lighting in rooms with a single controlled load and a single switch location. The RH-250 sensors were installed in hallways, stairwells and rooms with multiple switch locations and provide 3-way or 4-way control.

The project also includes RS-350 dual relay sensors, which helped cut down on wall clutter by controlling two loads from one device in the home office, a bedroom and several bathrooms. RD-200 dimming sensors, which combine vacancy sensor control with full range dimming, were selected for several bedrooms. Porch lighting and several fans are controlled by RT-50 and RT-100 time switches that enable users to select the amount of time the lights will be on.

Selecting manual or automatic operating mode

Most of the sensors were installed with the factory default setting for vacancy sensor, or manual-on, operating mode. Sensors installed in closets, a rear entry and several staircase locations were configured for automatic-on operation. These devices turn loads on automatically when they detect movement. To prevent energy waste, an integral light sensor was enabled on several of the auto-on sensors to hold lighting off when sufficient ambient light is present.

The Watt Stopper sensors and time switches control loads including fan motors and CFL, LED and incandescent lighting. There are just a few incandescent loads in the GreenHome, and these are dimmed both for energy savings and aesthetics.

Project partners and conclusions

The GreenHome project was developed with assistance from architect Bill McDonough, the U.S. Environmental Protection Agency and Department of Housing and Urban Development, the NAHB, the Green Standard Organization and over 100 other partners.

According to Philips, the residents are extremely happy with the controls and quickly came to rely on the sensors to turn off lighting throughout the home, a big convenience in a large house with children.

Philips looks forward to working with Watt Stopper/Legrand on future projects, and to being an advocate for what he describes as, "these little cool, easy-to-install, easy-to-use, energy savers that make everyday life more convenient."