

Feature – Central Virginia HOME

Smart Homes:

Where Technology Meets Comfort, Convenience and Safety

By Amy Coutee

Certainly there are beautiful, warm and inviting homes all around us. But then there are homes so appealing and comfortable you find yourself unable to leave. Welcome to Frederick Wilt's Smith Mountain Lake home where, seated on the family's plush red-patterned couch, you can control the home theater and every light, thermostat, security camera and speaker in his "smart house."

"It's a convenience thing," says Wilt, a retired computer programmer who got hooked on home automation after the security system and automated lights were installed.

Once people see what automation can do, they're usually hooked, says M. Scott Francis, co-owner along with Jeremy Shelton of Innovative Electronic Systems (IES) in Hurt, Va. When Francis and Shelton founded IES, they automated Francis' Forest home to serve as its showroom. "Now that we have it, my wife, I don't think she could live without it," says Francis. "You look forward to it."

What is a Smart Home?

If you've got three or four home automation systems tied together—a security system, lights, heating and air, and audio, for example—feel free to call your house "smart." If not, a whole wave of new technology can increase your home's IQ without breaking the bank.

Smart homes, also called high-performance and automated homes, were once only for the privileged few. New technology has made them more accessible and appealing. Experts say that smart homes are eco-friendly, secure, more comfortable, have higher resale value and better equipped to integrate future technology than their standard counterparts.

In most cases, the walls of smart homes are lined with miles of low-voltage cables. The wiring, done either during or after construction, is connected to a central computer. That connection allows all of the components of the system to talk to each other. Inside the home, those cables are connected to a wide array of devices such as light switches, speakers, video cameras, motion sensors and intercoms.

If you have a choice, it's more cost-effective to put the wiring in during construction. If not, retrofitting (installing wiring in an older home) or going wireless are options. Retrofitting a home can cost two to four times as much as pre-wiring because of labor. Most professionals prefer working with wires over wireless, but wireless systems can be used for security, surveillance cameras and intercoms.

When retrofitting a house, experts recommend putting as much wiring into the walls as possible so you can add to the automation later without reopening the walls. The cost for wiring is typically based on labor and not the amount of wiring.

The cost of a smart home can vary greatly depending on the homeowner's lifestyle, the size of the house and the features. Average automation packages start in the thousands of dollars and run into the hundreds of thousands. Items can be purchased one at a time, or as a package under one management console. All of it can be controlled by computer, phone, handheld device, remote controls, wall panels and wireless tablets (about the size of a hardcover book).

Smart Lighting

"The main thing that most people like to have in their homes are lighting systems that allow them to set scenes in the house," says Fred Hickey, president and owner of Hickey Electric Heating and Air and Tri-State Generator in Lynchburg. Because lighting can change the whole mood of a house, automated lighting is particularly helpful because you don't need to run from one light switch to the next to create the perfect setting for a romantic dinner or turn off all the lights left on before bedtime. Wiring run through a computerized system allows an expert to preprogram "scenes," such as "night" or "entertainment," that dictate what each light should do. Once complete, all the homeowner has to do is pick a scene on the control panel, and a dozen different lights automatically adjust.

Automated lighting makes life easier in many ways. "It's exciting when, at the push of a button, you can light your home and not have to set your grocery bags down and fumble for your keys in the dark," says Johnnie Kelley, a sales representative for Williams Supply Lighting Galleries with locations in Lynchburg and Roanoke. "We live in such a fast-paced world that I don't want to fumble for my keys."

Sensors, triggered by pressure, motion or a person's presence, can also be placed throughout the property to turn lights on and off. They're ideal especially for young children, says Kelley. When a child gets up in the middle of the night and steps on one, the sensor triggers dimmed lights to lead the child to the bathroom or parents' bedroom. Sensors can be programmed to turn lights on or off when someone enters or leaves a room as well.

Another bonus of smart lighting is the ability to take advantage of natural light by automating draperies and blinds. Each window dressing can be preset to open and close based upon time of day, or even latitude and longitude. It can keep furniture from fading, help regulate the temperature inside the home, and save energy. Kelley says automated lighting is a green feature that is attracting more and more homeowners. The switches run lights at 90 percent power, saving energy and money.

Staying Safe

Depending on your needs, security systems can help protect the inside and outside of homes from intruders, fire and floods. They have the capability to close and open doors, control driveway gates, detect motion, record activities, send alerts to phones or email accounts, and provide a sense of safety when away from home.

Flood protection should be of particular concern for residents today, says IES's Francis. Special sensors placed on pipes leading to washing machines, dishwashers, ice makers and toilets can detect leaks and trigger the valve on that water line to turn off. The system sends an alert to the monitoring company and owner to let them know about the leak.

These systems are frequently tied to automated lighting, so that when there is a breach, all of the lights in the home can turn on or flash. In addition, when put in a "vacation" mode, the lights can be programmed to run randomly, turning on at different times on different days to make the home look lived in.

Security cameras can be installed anywhere on the property and can record images, detect motion or act as intercoms.

Experts note that when considering a company to install smart home security, ask if they are licensed by the U.S. Department of Criminal Justice Services.

Climate Control

A greater sense of security is also gained when homeowners upgrade standard thermostats to automated, says

William Jefferson, residential operations manager for Moore's at Home, which specializes in heating, air, plumbing and electrical systems in Central Virginia. An automated heating system can be accessed and controlled from any computer, in or away from the home. The program allows you to keep the temperatures low, for example, when running late or turn up the heat up so your home is cozy when you arrive back home. With this type of system, residents have greater control over the home climate and the tools they need to conserve energy.

To further safeguard the home, an automated HVAC can be programmed to alert residents of any problems via cell phone text message or email.

With this automation, you get "peace of mind and it's so much more effective," says Jefferson. "You are able to have everything at your fingertips, and you get alerts before there is serious damage."

Movies and Music

Home theaters and whole house music systems are among the most popular smart home features right now, especially with men. The results depend on what you expect from the system and the equipment. A home theater can cost as little as \$5,000—think small plasma screen and surround sound—or up to \$250,000 for the works. They allow for a connection between TVs, DVDs, VCRs, DVRs, speakers and other home automation. Most theaters include lighting controls so that, just like in a real theater, lights dim and come up at the push of a button.

The latest whole-house music systems allow people to listen to different music in each room with speakers—think jazz in the kitchen and Jonas Brothers in the kids' rooms. Residents can plug an iPod into a wall slot and pull up a playlist, or listen to internet or satellite radio. Speakers can be hidden in ceilings, in custom-made cabinets or sit singularly throughout the house.

The Sky's The Limit

"The things you can do in automation are limitless," says Hickey, who tells clients that if they can operate a computer, they will be able to operate smart home technology.

With this technology, homeowners can also feed pets, control a central vacuum, operate intercoms, monitor the pool temperature, irrigate the yard, check voice-mail, keep an eye on the housekeeper, track how long someone left a door open, turn on spa jets, increase the volume on the hidden speakers by the pool, and more. Some companies install voice-activated systems that don't require remote controls. Keyfobs can be programmed to perform a variety of functions so that one swipe of a keypad or press of a button can disarm a security system, turn on house lights or close a garage door.

"If you can think it up, we can build it," says IES's Jeremy Shelton. Once people start adding automation to their homes, it can become an addicting kind of hobby. Next on homeowners' wish lists are likely to be smart appliances such as refrigerators and new heating and cooling units. Clients will soon be able to get heating and cooling units that connect to phone lines, allowing technicians to diagnose a problem with a phone call, says Joe Starling, a comfort consultant with Southern Air Inc. Regardless of which smart item they pick, Starling recommends those with Energy Star ratings, which can mean energy savings and tax credits.

Getting Started

Though it is possible to walk into a store and pick up a do-it-yourself automation kit, experts recommend proceeding with caution.

It isn't the low-voltage cables or costly repairs that you need to be worried about; it's figuring out how to get all of the automated devices to talk to each other. This technology isn't standardized yet, which means each maker uses its own programming. Choose one maker and stick with it.

If you want to find an expert, be ready to help them help you. Decide what's important to you. Is it safety, entertainment or being eco-friendly? Get a copy of your floor plan and know what the options are if you have to retrofit. Take into consideration your age and how you entertain.

Then, visit homeowners and company showrooms. Questions to ask include how long they've been in business, if they work with a designer who can customize your lighting schemes, or if they have access to someone who can build furniture to mask things like speakers.

Make sure the expert takes time to understand your lifestyle and what your family needs. The effort is worth it, says Wilt, whose Smith Mountain Lake home's system provides entertainment and peace of mind.

"I feel very good about going someplace and being able to check in and see if things at home are happening the way that I think they should be," he says.