



When uniting a homeowner with a strong desire for technology, an integrator that is able to make the systems work, and a builder with the aptitude to manage the installation and construction process with precise detail, the result is a highly technology-based home that stands out from all others on the block.

Donatelli Builders Inc., www.donatellibuilders.com, Wheaton, Ill., a custom builder specializing in new homes and renovations, completed an entire remodel on a 4,700-sq.ft., 80-year-old house in the suburbs of Chicago. The catch was the homeowner wanted all the high-tech advantages of today without sacrificing the historical integrity of the home.

Such a project would require many specialized trades coming together and a builder with the aptitude to successfully push the entire construction process forward without a flaw. With that in mind, Chris Donatelli, president, Donatelli Builders, rolled up his sleeves and did what he does best.

MARKET FOR REMODELING

One trend developing in the residential construction industry is homeowners are looking to stay put and remodel instead of purchasing new homes. This paves the way for new opportunities for builders.

“Historically, when the houses become hard to sell and people don’t have access to funds like they had in the last eight years, people tend to stay in the houses longer and improve the houses versus making it disposable,” he says.

A Remodeled Jewel Box

Donatelli Builders meets the challenge of putting advanced systems into a historical home without sacrificing aesthetics of the residence.

by: Laura Black, associate editor

The RMI (remodeling market index)—which surveys of a panel of remodeling experts quarterly to collect information about current market conditions and forecast for the future—is monitored by the NAHB (National Assn. of Home Builders), www.nahb.org, Washington, D.C. Recent RMI statistics show remodeling activity remained sluggish in 2008 with the current market conditions component dipping from 41.8 in the first quarter of 2008 to 27.7 in the fourth.

While the market for remodeling dipped last year—alongside the rest of the industry—it remained a bit more stable compared to new residential construction.

According to a Harvard University JCHS (Joint Center for Housing Studies), www.jchs.harvard.edu, Cambridge, Mass., recent report—The Remodeling Market in Transition—remodeling expenditures decline less than residential spending during a downturn, and this recession seems to be following such a pattern.

With recent legislation, the remodeling market should expect to see more activity in the coming months. The Housing and Economic Recovery Act of 2008 allocates

\$3.92 billion in grants to states and local government to redevelop abandoned and foreclosed property.

According to the JCHS, this act will offer more opportunities for renovation and remodeling as funds are given for local projects.

Donatelli concurs with this forecast, speculating ‘McMansions’—a term often used to describe large and indistinct homes—that were so popular in this area of the country throughout the past decade are going to be undesirable for buyers in the near term. This will force more people to stay in their current homes, thus prompting a more vibrant remodeling market. And the money that buyers would have invested in new properties is instead now earmarked for things such as energy-efficient appliances and technology for current homes.

“Even when people are going to want to build more conservative houses, size-wise, I think they are still going to want to make use of the technology, especially when it has to do with energy efficiency,” says Donatelli.

This particular project was a ‘complete gut project’ from the design of the house to the implementation of several new technologies. In this home, a combination of both wired and wireless technologies were used for multiroom audio, lighting control, and a home theater.

To help complete the project, Donatelli brought on Gary Trucinski, account executive, Avlet Inc., www.avletinc.com, Wheaton, Ill., who specializes in residential and commercial home technology. He has a keen knack for ensuring all the technology is wired and installed appropriately and accurately.

Speaking in generalities about the technology market, Trucinski says, “People are renovating a part of the house or finishing a lower level and that gives us the ability to put in at least some of the infrastructure. Some of the stuff we do is wireless. If we can get some of the infrastructure in one level then we can populate the rest of the house.”

When working with an older home like this, builders need to know when it is appropriate to use wireless technology versus hard wiring a home, so as not to ruin the aesthetics of the historical property.

Peter Hoagland, director, Home Lighting Control Alliance, www.homelightingcontrol.org, Warrenton, Va., has a few suggestions. He says, “With video, the signals



With advanced whole-home lighting control systems, residences can become more energy efficient and offer a greater level of convenience through features such as preset lighting scenes for each room.

are so large one still has to go hard wired. But (with) others such as security data and audio, wireless might be the obvious choice.”

In the case of this particular home, the technology varied, offering an assortment of wireless and wired. Furthermore, getting all these systems into the home, while still maintaining an aesthetically pleasing design, proved to be quite challenging.

A LOOK INSIDE

Harvard University’s JCHS reveals energy efficiency, cost savings, and maintaining structural integrity of the home are factors that will drive remodeling projects.

With this growing trend toward ‘green’ building, AHT (automated home technology) will certainly have a role to play, and this project addresses that key element.

One of the biggest energy efficiency technologies in this home is the lighting control. Working with the homeowner, the integrator chose a whole-home lighting control system from Lutron Electronics, www.lutron.com, Coopersburg, Pa. Avlet works with this technology on a lot of its projects, and it seemed to be the right fit for all parties involved.

One of the significant advantages of this lighting control system is the homeowner can preset lighting scenes for each room in the house, which means when they enter a room all they have to do is tap a button.

“I would say convenience is the biggest feature with the lighting because it is pretty sweet when you can push a button and all of a sudden get a scene or push it twice and get another scene,” says Donatelli.

The scenes are set through a central control touch panel in a hallway near the living room. The touchscreen, which is from ELAN Home Systems, www.elan-homesystems.com, Lexington, Ky., controls the global lighting scenes for the property, the surveillance cameras for up to nine zones, and also the multiroom audio.

When deciding which audio system to put into a home, the integrator and builder worked closely with the homeowner to determine specific needs and wants. They dedicated several meetings to decide which rooms would be best suited for speakers and where touchscreens would make the most sense.

What was chosen was an audio system that runs throughout the entire house, and can be controlled at the touchscreen or at multiple volume control switches in every room.

The system they chose can sync with iPods, the radio, and even a jukebox. In this case, the biggest challenge was putting quality sound in every room, yet hiding not only the wires, but also the speakers. The homeowners wanted to keep the design of the home consistent with its historical shell.

So Donatelli decided to build the speakers behind the drywall. In this case, he put the speakers in the ceiling pointing down, so they would not interfere with wall decorations and hangings.

The result is the homeowners can listen to music in the dining room and sunroom while looking at an aesthetically pleasing design rather than bulky speakers hanging from the walls.

One of the biggest projects in the house was the media room, which wasn't in the original design.

"There are six revisions of design in pretty much every home like this that we do," says Trucinski. "This was at least six levels of revision, going through every room and talking about what we are putting in and the choices."

According to Donatelli, the media room was added during one of the revisions of the design process, and it is the place where they had to spend a lot of time running and hiding wires.

Based on the room size, they decided to do 5.1-surround sound (five speakers to one amplifier) with a high resolution, retractable

projector. Donatelli also did retractable screen masking on each side of the screen, so the owner can change what screen size they want to watch.

In an attempt to not detract from the décor, this room was also tastefully crafted. Trucinski says they spent hours in that room fitting the cabinets properly, hiding wires, and making sure the screen was concealed.

Additionally this is the room where all the electronics for the whole house are stored. A media cabinet houses amplifiers for the speakers, audio and video, surround sound, XM radio, cable box, paging system, and digital video system. To protect all these amplifiers, a power clean-up surge protector with an insurance policy to cover up to \$100,000 in damages was installed.

While AHT was a large part of this home, the technology doesn't stop there. Both the homeowner and Donatelli found there was value that existed with other technology. For example sensors were installed inside the window frames on the first floor and in the basement to detect if glass is broken or motion goes through the windows. These sensors will immediately alert the homeowner that someone is in the home.

Another unique technology is the snowmelt system in the driveway, which is beneficial considering the brutal Midwest winters. Embedded within the concrete are temperature sensors and flexible radiant pex tubing, which is filled with an antifreeze and water mixture.

When the sensors detect the temperature is below 35 degrees Fahrenheit or there is snow or freezing rain on the driveway, it will send a signal to turn on two



To keep with the aesthetically pleasing design of the home's dining room, the builder hid all the cabling and wires in the walls and mounted the speakers in the ceiling—pointing down—behind the drywall.

Munchkin boilers from Radiant Heat Products, www.radiantheatproducts.com, Springwater, N.Y., pumping a hot mixture from the boiler through the tubing, melting the snow, and in turn, saving the homeowner from shoveling.

All home technology applications from multiroom audio to lighting control to snowmelt systems for driveways are becoming more desired by homeowners. Builders looking to remodel and renovate in the coming years will likely have to put AHT into homes. To do this, they will have to work as a team with integrators, and it might not always be an easy process.

THE DETAILED PROCESS

From the landscaping to the cabinetry to the technology, many specialized trades needed to come together on this home, each focusing on their individual aspect, with the builder pushing the entire process forward.

“As a builder, having to coordinate all of them was pretty packed, in terms of all the different things going on,” says Donatelli.

To help, Donatelli Builders uses project management software to help coordinate all the trades and manage the homebuilding process. But adding conflict to the equation is the fact that AHT integrators don't work like the typical trade.

“A builder many times is building a house one floor at a time after it is framed up,” says Trucinski. “The first time we come in we pull from the top (floor) to the very lower level. So we shoot right past the trade.”

While trades typically work in a more linear fashion doing one floor at a time, technology integrators need to come in, put a piece of technology in one floor, and immediately pull the wiring throughout the house.

With this in mind, builders need to make sure expensive technology equipment isn't being installed when there is still saw dust within the room. Worse yet, they don't want to be finishing up the paintwork and realize something still needs to be pulled behind that wall.

According to Donatelli, factors like these require another layer of collaboration, coordination, and management on his end. But he says the end result is worth all the added coordination.

Trucinski says, as an integrator, they are usually in a house for a year from the moment they start pulling cable to when it is turned over to the homeowner. Even with all the additional technology elements, the total turnaround time on this home was about 10 months.

From demolition to the time the owners moved in was about seven or eight months, which is extremely fast considering the involvement of home technologies. This accelerated construction schedule was able to occur without the finer details in the home being ignored in even the slightest manner.

Such results are a testament to the dedication and professionalism of Donatelli Builders and all the trades involved on the project.

“(Some builders may) want to just rush through things and they don't want to pay attention to the details,” says Trucinski. “Really the devil in our business is in the last 10%. That is where you can tell the difference between the men and the boys.

“It was nice to work with Chris because he took a personal interest. Instead of just trying to hurry quick, he was paying attention to the details to make sure we were all doing a great job.”

The key to making sure everything runs smoothly and the details are not ignored is all the players in the renovation project need to play the right role. It helps the process along when the homeowners know what they want, but can still be practical. But most importantly, it is beneficial when the builder has an underlining awareness for the technology.

In the end, the main reason the project came together so quickly is because all parties involved on the project collaborated and communicated effectively.

“Everyone was great to work with—all the vendors, the landscape architect, the architect on the project, the low-voltage technology, and the owners,” says Donatelli. “It was a very complex project, but it was very fun because the people were having a good time.”

And the outcome is an aesthetically pleasing home—representing the early 1900s era—with miles upon miles of hidden cables and high-tech features.

“We call it a jewel box in our business because it is beautiful on the outside, but when you come inside it is that much more beautiful,” says Trucinski. •



The centrally located touchscreens control the global lighting scenes for the entire property, the surveillance cameras, and the multiroom audio.