

(This page) To avoid disturbing the owners' basement rec room, builder Phil Lemire built the family room/master suite addition from the top down, only removing the roof over the existing house when this roof was weathertight. For more of this house, turn the page.



Nowadays, one of the first things architect Joe Luna asks new clients is how wired their lifestyles are. More often than not, clients say "very." ■ That was the emphatic answer the owners of this renovated colonial gave. They wanted their suburban Boston home to grow not only in size but also in technological capabilities. ■ Luna's plan bookends the original house with two two-story additions; one extends the family room and adds a master suite above, the other contains a three-car garage with home office upstairs. The home office and the family room got most of the high-tech treatment, but the

Rewired

whole house was also upgraded with Cat 5 wiring, network cabling, a LAN system, and a lighting control system. ■ The biggest design challenge Luna faced was integrating a sophisticated video system into the

family room. He worked closely with the AV consultant to configure the custom cabinetry to accommodate all the AV components and provide them with the proper ventilation. Lighting the room also required extra planning to avoid reflections in the big-screen, rear projection TV. Luna minimized the use of recessed lights and spec'd tiny, low-voltage, xenon-gas lights spaced 2 inches on center in the ceiling coves to give the room ambient lighting that doesn't reflect on the screen. —LE



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Project Credits: Turner Pitt Limited, Ipsfield, Mass.; Architect: Tom Design Group, Ipsfield, Mass.; AV consultant: AV Design, Walling, Mass.; Cabinetry: Appleton Woodworking, Newbury, Mass.; Living room: 2,500 square feet; 3.5 acres; Lumber: Corti \$139 a volume; set: Photogram; film: Riva; ■ Rescues: Bathroom plumbing, tile/pull-down cables, C-rod 10 1/2; TruTV; Hella, Circle 425; Garage door: Baytec, 777-425-4494; electrical: Gentry, 777-424-8844; ■ Doors: Corning, 777-424-2333; spring for: Loxe; Hella, Circle 425; Radio Shack; ■ Moore, Circle 430; Roofing: Lusa; Feed, Circle 11; ■ Shlight; Waco; Circle 432.



in the home," he says. From a PC in Europe, a client could get on the Net and click onto his home page to see what the security cameras see, change the HVAC settings, turn lights on, and even watch channels showing on the digital satellite system.

Automation isn't always an easy sell, according to Greene of Custom Home Control. The San Diego-based systems integrator likes to ease his tech-wary clients into investing in a wired home with a little car talk. "I tell people that an automated home should be just like a luxury vehicle, only larger," Greene says. "These upscale customers wouldn't think of having a car without electronic doors and windows, so why wouldn't they want the same thing in the home?" Instead of doing a window tour of every room before they leave the house, Greene's clients press a button and the windows shut themselves. Even better, the windows can talk to the HVAC system. "When the air conditioning comes on, all the windows close," he says.

Greene is also fond of programming macros, or sequences of related activities, that kick in at the press of a button. The Good Night mode, for example, is often the clincher for customers wavering on the buying decision. Press a touchscreen controller, a telephone keypad, a button, remote control, or a PC, and a homeowner can unleash a flurry of electronic activity that ensures a restful night's sleep. The shades motor shut, door and window locks set, the security system arms, the HVAC

High Wired Acts

system sets back, and all the lights in the house shut off.

The price of an integrated home electronics system is as variable as that of home theater systems. You could spend \$1,000 for a small scale audio/video system and TV, or go

telephone systems that company executives wanted to replicate at home. "I had one customer who spent \$40,000 because he didn't want to have to learn a different phone system at home," Greene recalls. Fortunately, phone suppliers are wising up to the fact that today's home needs multiple lines and extensions just as a business does—only on a smaller scale. Phone systems from companies including Lucent Technologies, Panasonic, and Meridian run as little as

where practical. When a visitor presses the front doorbell, it can ring in all the phones in the house, and the owner can release an electronic lock with a button on the phone to allow the guest to enter.

Lighting control is another subsystem that's getting very popular on the high-end home circuit. "You can set pre-programmed scenes for a party, or press a button for a more quiet, intimate evening," says Lara of Lara Design Lighting. Lighting control systems from companies including Lutron, Vantage, and LiteTouch are bringing drama, convenience, and security to the high-end home market. Lighting systems can learn your daily lighting patterns and mimic them when you're away to give the home a lived-in look. They also can be programmed to flash both inside and out when a motion detector triggers the security system.

Professional integrators can get a house to do almost anything, the trick is to make it idiot-proof to operate. Touch-panel remote controls from Casion Electronics and Penta touch of AMX and PDAST use smart, developed for corporate boardrooms and commercial facilities to control the increasingly sophisticated array of electronics in high-end homes. "If the product is very reliable and easy to use, people will use it, enjoy it, and recommend it to others," says Waters. "If it's at all problematic or slow in operation, they won't use it." The philosophy at Multimedia Solutions is that if someone presses a button, something had better happen within one and a half seconds. "To do that right is

expensive," Waters says, "but it's the difference between doing something correctly and getting enjoyment out of it and doing something incorrectly and throwing your money away."

Paving the way for the electronic palaces of the future requires an overhaul of some of the practices of the past. Programmable lighting systems require special cabling that hops wires to a central location, as opposed to standard electrical wiring used for lighting loops in the past. Computers and phone systems require high-speed Cat 5-enhanced cable, and video systems need RG-6 coaxial cable to ensure the highest-quality video transmission. "The sky's the limit for what can be done these days," says Lara. "The standard rule is to double the length of wiring you were used to running in the past. If you were running two or three miles in the past, you're going to need six to 10 miles now."

Systems integration is a hopping business and a lot of people are reaching for a slice of the pie. It's important to work with an integrator who can be involved from the planning stage through post-construction, and who is proficient in all the various subsystems that will tie into the home network. "Homeowners will spend between 5 and 18 percent of the cost of construction to electronically outfit a home," says Waters. "The earlier a systems integrator is brought in on the job, the better off the client is."

Rebecca Day specializes in writing about home electronics.



pro-grade and (top well over \$100,000). One of Greene's most expensive systems topped the ledger at \$80,000 for automa-

tion alone. That included a card access system that mimicked the one the home owner was accustomed to at the office. "He could have done a card access system for a couple thousand dollars, but he didn't want to have to carry two cards," Greene says. Instead he ended up with a card access system designed to serve 500 employees in an office building stuffed into a residential space.

The same kind of overkill used to occur with office-level

Because the room faces north, daylight reflecting on the TV screen wasn't a problem. The TV and A/V components are set into custom maple cabinetry with faux bird door panels that give the media room a rich warmth

\$5,000 without sacrificing any of the advanced features of commercial systems.

It's not uncommon these days for a multi-tasking home to have six lines and 16 extensions, for instance. Advanced phone systems boast voice-mail, call routing, paging, intercom, conference calling, and other features typically found at the office. Electronics designers can integrate the phone system with the other electronics