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The Sound of Music

Electronic audio, video, and lighting systems are music to one family's ears.

*by Amanda Finch
Photography by Tony Scarpetta*

Saturday in the Grey household is a day devoted to rest and reflection. Walking through the 9,000-square-foot Boston home, a visitor would have no idea that he was touring an electronic house. There are few hints of the high-tech multi-room music system, and there are no sporting events playing on the five TVs in the den entertainment center. The comprehensive security system works quietly in the background, and none of the home's 22 satellite receivers are delivering signals to the

home's multitude of monitors. ¶ It's doubtful that the automated lighting routines, which keep the house illuminated on the Sabbath, would even be noticed. Because the focus is on family: Whether they're gathered around the indoor pool or relaxing in the den, Saturday is a day to "power down."

HOME OF THE MONTH

HIGHLIGHTS

- Wall-mounted keypads control a 16-zone multi-room audio system.
- Den entertainment center boasts five TVs and a Crestron touchscreen control.
- "Sabbath" button triggers automated lighting routines.

However, carefully integrated electronic systems are a few of the keys to maintaining peace on the Sabbath in this Orthodox Jewish home. When the Greys sat down for the first time with Brad Smith and Bob Copeland from Audio Video Design (Wellesley, MA), observing strict Sabbath law was at the top of their priority list. "On the Sabbath and certain religious holidays, they can't directly interface with any kinds of electronics or mechanical products," explains Bob. However, the family wanted to incorporate whole-house lighting control, state-of-the-art entertainment equipment, and iron-clad security into their newly renovated home. The pros from Audio Video Design listened to and documented the Greys' needs to design a home system that could satisfy every member of the family, every day of the week.

LIGHT IT UP: Lighting Control

From about 4 p.m. on Friday until sunset on Saturday, the Greys have worry-free lighting control throughout their home. By pushing the "Sabbath" button on any of their LiteTouch wall-mounted keypads on Friday, they put the house into its holiday mode, instructing the system to arrange the lights automatically for the next 24 hours. "If it's a religious holiday," Bob says, "it can actually go two or three days. In that case, LiteTouch would continue to function for the duration of that period."

High-traffic areas throughout the home such as the kitchen and the den remain lit from sunset until 11 p.m. to enable general activities such as cooking, reading and getting ready for bed. Pathway lighting makes hallways and stairs safe to travel, while outdoors, lighting illuminates the landscaping. After 11 p.m., the lighting system powers down all the lights inside and outside the house. From 11 until sunrise, motion detectors outside the house and around the garage trigger floodlights automatically any time movement is sensed.

A good working relationship with his clients was key to designing the lighting routines for the holiday mode, Bob says: "You kind of have to think through someone's lifestyle to decide what lights do you leave on. What lights do you leave on long enough for reading a book but not to keep you up at night? It has



The Sony 36-inch XBR television in the master bedroom has its own dedicated satellite receiver and Sony VCR. Phast wall-mounted keypads can select any audio source for the room. Parents can listen in on sleeping children through the wall-mounted Aiphone intercom system.

taken some tweaking, but actually the designer, Mark Turner, who was responsible for the lighting system programming, has done a very good job."

SAFE HOUSE: Security System

When you have 9,000 square feet of home to protect, you need a comprehensive security system that can offer detailed feedback. Audio Video Design chose the Napco GEM-9600 system, and installed wall-mounted keypads with built-in LCDs (liquid crystal displays). Motion sensors are installed throughout the house; glass-break detectors are installed on most windows and large glass doors. In addition to detecting open doors and windows and break-ins, the system is also equipped with heat and smoke detectors to sense a fire in the house.

THE TIMELINE



Architect Adolpho Perez

PLANNING: 3 Months

Audio Video Design was introduced to the renovation of the Grey home by architect Adolpho Perez when the architectural plans and lighting layout were basically complete. The house was gutted to frame and many trades had begun their work. Three meetings were held between Audio

Video Design and the homeowners before the contract was signed.

DESIGN: Ongoing for about 1 year

The design of the lighting control system started at the quotation process to give the electrical contractor a working document to use for load schedules. Button

layouts were basically complete within seven months for Phase 1 of construction and within 14 months for Phase 2.

PRE-WIRE: 6 weeks

Because the interior of the house was completely gutted, the wiring process was easier than on most retrofit installa

When the system is triggered, the keypads don't simply state "Fire" or "Open Door." The LCD tells the Greys exactly where the break-in or fire is located: For instance, "Door Open—Kitchen" or "Fire—Basement." At that point, the Moose Interior Siren sounds, and the system calls a central monitoring station. If the station doesn't receive feedback of a false alarm, the police are summoned to the residence. "If there is something open," Bob says, "they know exactly where to go to fix it or close it. If there's a problem, we can easily identify where the problem is, so we can hopefully correct it quickly."

Once again, the Sabbath dictated certain modifications to the system. "They wanted an easy way to make sure that during the Sabbath, nothing that they did in the house would affect the status of the keypads," Bob explains. In a standard mode, the system reacts to someone walking past a motion sensor or opening a door by signaling the keypad to display "Door Open," or to switch its indicator lights from green to red.

But the religious law dictates that the Greys have no interaction with electronics. "Even if they're not in view of the keypad," Bob says, "they can't have it visually change state." So Audio Video Design designed a bypass mode for the system so that the Greys could move about the house comfortably without tripping security sensors.

TALK TO ME: Communications System

Screaming from one end of the Grey home to the other would simply not be an effective means of communication. A whole-house intercom system was a necessary feature of the phone system. Audio Video Design recommended the analog Panasonic system. While they frequently install the Panasonic digital system, the analog model offered an advantage for the Grey family: the ability to integrate more door phone stations.

When the doorbell rings, the Panasonic system phones within the house ring as well. Any member of the Grey family can pick up a phone and communicate with the visitor outside who is speaking into a door phone station at the front, rear or side entrances. Audio Video Design chose a Holosound stainless steel-finished unit for the front door to match the home's

tions. Construction demanded that the prewire take place in two stages: In the first stage, all wires were run from the basement distribution point to easy access points in each room. In the second phase of the prewire, the wires were run from the access points to the electronic components.

TRIM PHASE: 9 months

The unusually long trim phase was due, once again, to the construction demands of renovation. As soon as the dust was cleared from construction, audio and lighting control pads were installed so that the debris wouldn't cause problems with operation of the components.



In the dining room, a relaxing ambience is maintained through LiteTouch-controlled lighting scenes and soft music delivered through the Panja Landmark multi-room audio system. Speakercraft in-ceiling speakers are painted to match the ceiling.

modern architecture.

The Greys can communicate room-to-room via the telephone system's intercom feature, or listen to a room by activating the "room monitoring" function. However, when the Greys expressed interest in listening to activities in the children's rooms at night and around the pool during the day, Bob suggested an alternative solution.

SEEING IS BELIEVING: Home Theater

The crowning achievement of the Grey home is the entertainment system in the den. Mr. Grey is a devoted sports enthusiast and avid collector of sports memorabilia; seats from the Boston Garden, a piece of its parquet floor, and an extensive baseball cap collection are on display in the room.

PRE-PAINT Installation

Speakers were installed after plaster and before paint to paint-match the grilles. It required only about an hour to install each set of speakers because wiring and brackets were installed earlier in the prewire stage.

POST-PAINT

Phone, data, satellite and cable faceplates were chosen to match paint where possible. Consolidation of these connections on one plate in each area was important.

CALIBRATION: 10 days

Video, lighting, and security systems were tweaked to client specifications.

He wanted an entertainment system that would give him access to all the sporting events that satellite television has to offer—practically all at the same time. Four 32-inch Loewe televisions command one wall of the room, and underneath is a fifth screen: a 65-inch Pioneer Elite rear-projection set. A set of wired headphones matches each television, so if Mr. Grey is entertaining his buddies, they can each enjoy the audio of their separate sporting events. Wireless headsets were considered, but the multiple frequencies in the room posed an obstacle and the cost was prohibitive.

Six separate RCA satellite receivers, housed in the basement equipment room, are dedicated to the den, and any of the room's televisions can access any of the receivers at any time. In addition, the Greys have a choice of watching a DVD or videotape on any of the TVs. Niles in-wall HD speakers provide sound for the Pioneer television, and at any time, a viewer can choose to move the program from any of the smaller TVs to the big screen.

The management of all these entertainment choices is handled by a 10.4-inch Panja color touchscreen customized expressly for the Greys by the Audio Video Design team. A picture of each television appears on the touchscreen; underneath the TV is printed the name of the source to which that monitor is connected. For instance: "TV1 - DVD," "TV2 - Satellite 1." All the Greys have to do is touch the picture of the TV, and then the touchscreen asks which source should be selected. The touchscreen communicates with the AMX control system in the basement, which pulls the selected source to the designated monitor.

If the Greys want to physically control the functions of the source, they just touch "source control" and that page pops up on the touchscreen. They can control channel selection on the satellite, play/pause/stop on the VCR or DVD player, and all of the functions of whatever source they may be using at the time. The widescreen rear-projection television is high-definition-capable. A sixth satellite receiver works as a dedicated high-definition receiver to deliver high-definition broadcasts when they become available.

Audio Video Design also incorporated buttons onto the touchscreen for operating the room's lights and gas fireplace. "That's Mrs. Grey's favorite feature!" Bob says. "She told me that that's the one she shows to all her friends."

TUNED IN: Whole-house Video

As if a room with five TVs didn't provide enough entertainment, 22 satellite receivers are attached to televisions throughout the Grey house. All receivers are fed by one standard high-definition dish located on the roof. There isn't a single space in the home without satellite access.

The dressing room and master bath posed a challenge. Bob explains that there was no place in the bathroom to install a satellite receiver. "And we also had a TV in the master dressing room. Although we could have put a satellite receiver there, it



Six different satellite receivers are dedicated to the five televisions in the den: four 32-inch Loewe TVs and a 65-inch high-definition Pioneer Elite set. Four Sony headphone sets allow viewers to also hear the separate programs on each TV, while the sound for the bigger picture is pumped through Niles in-wall speakers.

still wouldn't have satisfied the need for supporting satellite in the master bath."

The solution was to install a satellite receiver and a ChannelPlus video modulator in the basement equipment room. Video modulation allows a source (satellite, DVD player, etc.) to be shared between televisions by dedicating one cable channel to the source (in the Greys' case, a satellite receiver). So any connected TV can tune to that cable channel to access that component. However, every connected television must watch the same satellite channel.

Mr. Grey decided that he would never need to watch a separate satellite program in the bathroom and the dressing room, so video modulation solved the space issues. Infrared (IR) receivers were installed in both locations, which communicate with the modulator in the basement. A simple Sony satellite remote control is used to change the satellite channel. As long as the bathroom and dressing room TVs stay tuned to cable Channel 3, they can both access the satellite receiver.

Moving Forward

The final step in the construction project will be to install an outdoor heated enclosure for a basketball court and outdoor skating rink. After that, the Greys don't plan to make any upgrades for a while, Bob says. "I think he feels like he spent more money than God," he laughs, "and he doesn't want to think about writing another check for awhile!" **EH**