

Automation & Control



The Winding Road

EDG GIVES A DRIVEWAY
EYES AND EARS

Guess who's coming to dinner? Some of **ELECTRONICS DESIGN GROUP INC.**'s clients living in rural Hunterdon County, New Jersey, already know.

The security and surveillance of a long and winding driveway was of utmost importance in the retrofitting of their family's new home, called Tree Tops. They turned to EDG, based in Piscataway, New Jersey, to design and install elaborate but easy-to-operate, Crestron-controlled wireless driveway audio and visual monitoring systems as well as HVAC, fire and burglar alarms, distributed audio and a media room inside the home, which also underwent cosmetic alterations. The project garnered the 2005 Crestron Integration Award for Innovative Design for EDG.

The Crestron lineup features an AV-2 Integrated Control System, CNH Network Terminal Block, CNP-WS-75 power supply, CNP-WS-75 power supply, three CHV-TStats, two CHV-RTS temperature sensors, an outdoor temperature sensor, a TPS-2000 color touch panel, a CNX-PAD8 audio distribution processor, three CT-1000 color touch panels, an STX-1700C two-way wireless panel, an STRFGWX two-way RF receiver, a TPS-3000 with HBK-3000, and a C2n-TXM XM radio.

The 4,000-square-foot, three-story house, with an above-ground lower level, was 18 years old and virtually untouched by technology, explained EDG president Bob Gullo. "It didn't even have Internet access or cable TV, just a roof antenna," he said. "There was no useable infrastructure in terms of existing wiring. We had to consider the overall concept, ensuring that we

Electronics Design Group was hired to design and install an elaborate but easy-to-operate Crestron-controlled wireless driveway audio and visual monitoring systems for a New Jersey country house, located one-eighth of mile from the street. A sensor (above right) activated by the movement of any metal object within a 14-foot area, lets the client know any time a vehicle enters or exits his property. After an alert is sounded, it takes 20 seconds for a guest's vehicle to come into view on the client's Crestron touch panel (above right).

sited the cabling properly, not just for immediate use, but for the future. Once we found a chase way from the utility room on the lowest level to the attic, we ran a lot of spare cables."

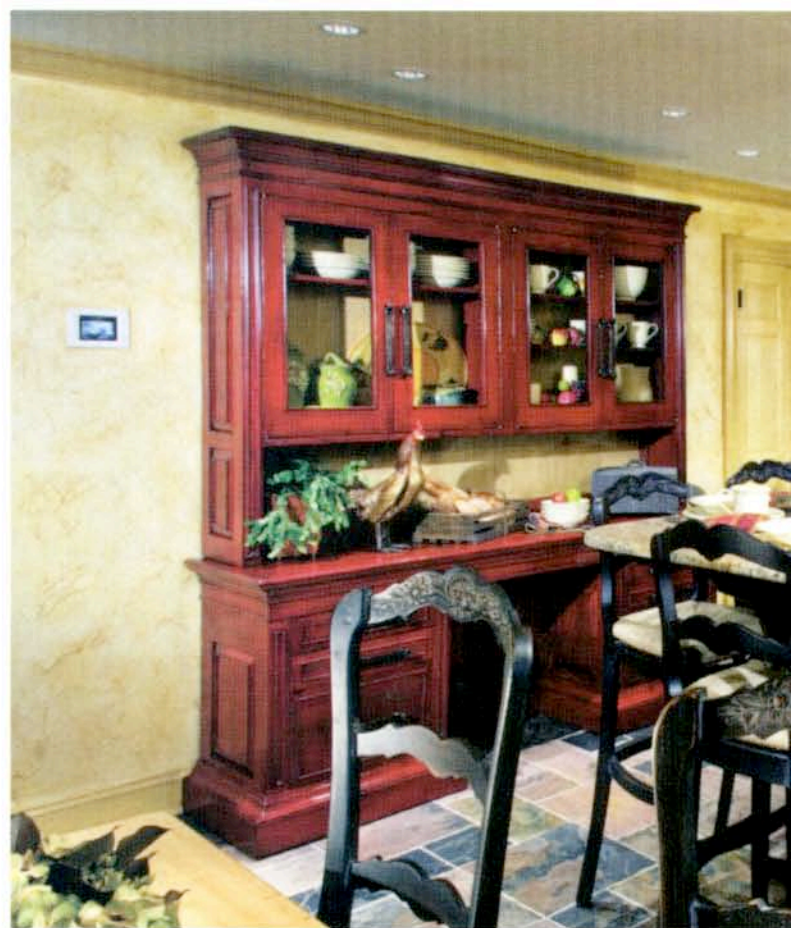
EDG's work began outside, designing a driveway surveillance system that highlights a creative implementation of Crestron technology. The client's previous home was in an urban setting, Gullo said, where it was easy to spot any car pulling into the driveway. The country house, on 6.5 acres, has a one-eighth-mile setback from the street. It shares a driveway with one other home at the street entrance, a driveway that splits into a lengthy sloping approach to the home. Due to this distance, the client was often startled when the doorbell rang, usually by someone who had taken the wrong driveway.

"This is not a well-lit area, and

there are no street lights. When it's dark, it's really dark," Gullo said. "The first thing we looked at was how we could provide some sort of visual and audible alert to the client. We were looking for places to run cable, but we quickly abandoned that thought since there were no plans to trench and provide conduits at the street. We realized that wireless was the way to go."

EDG found a wireless solution to take the alert into the house. "Because of the driveway's length, there's plenty of time for the clients to react to any approaching car," Gullo said. "We designed in an innovative application using off-the-shelf parts, and that provided limitless opportunities for creativity."

A sensor, activated by the movement of any metal object within a 14-foot area, lets the client know any time a vehicle enters or exits the property. Communicating via wire-



The cameras are viewed on a TPS-2000 in the kitchen, a TPS-3000 in the master bedroom, and from any TV in the house.

less RF transmission, the receiver, located in the attic, has four form "C" relays, which trigger a series of events.

"The signal is hard-wired to the Crestron system and closes a relay on that system to start the sequence with an audible alert for which we provided voice annunciation," Gullo explained. "The soft female monotone voice repeats the word 'driveway' three times. The clients hear it throughout the house. We used a WAV file installed on the Crestron processor, and there's at least one touch panel on each level of the home—a total of five in-wall panels that are annunciating," Gullo continued.

Once the alert is sounded, it takes 20 seconds for the vehicle to come into view. EDG installed two Silent Witness V60 Nighthawk cameras for the front of the house: one on the chimney facing the top of the driveway, another at the garage's courtyard. The cameras are viewed on a TPS-2000 in the kitchen, a TPS-3000 in the master

bedroom, and from any TV in the house. The Crestron touch panels remain on the "Garage View" for a period of five minutes, then time out to the main screen. Two additional Nighthawk cameras serve the backyard area of the house.

When the annunciation is complete, the touch panels "wake up" and page flip to camera one. "If the clients are expecting someone, they won't have to get up when they hear the alert," Gullo said. "If not, they will look. We took out all the guesswork. Even if a panel is asleep, it wakes up and page flips to camera one. Camera one flips to camera two. If they miss seeing the car on the first shot, they can see it in their courtyard. They also can call up any of the cameras. We page flip it for them, but they can go back manually."

The project was a first of its kind for EDG, and the challenge was not in implementation as much as in coming up with the application for a client who didn't want a gate. "There was a lot of tooling around, going up



front of the fireplace. Across the room, a video projector also is built into the soffit, and we used a motorized actuator to open and close the door revealing the projector. Motorized shades hidden in the soffits darken the room when needed and all speakers are ceiling-recessed with subwoofers tucked behind furnishings. In addition, a jack in the media room provides video camera and laptop connections for any game platform. Anything the clients want to see can be viewed on the projector or on the flat panel with surround sound."

In the master bedroom, a small 26-inch flat screen TV on a 180-degree motorized lift is

housed in furniture, designed to face the bed or an adjacent sitting area. In the kitchen, where the client requested good sound, EDG installed a subwoofer in the pantry area to augment the kitchen audio and give extra oomph.

"My favorite projects share similar characteristics. They're unique and creative with hidden technology and great sound, and they're simple to operate," Gullo said. "Tree Tops has all of these, and then some."

Karen Mitchell is a freelance writer in Boulder, Colorado.

and down the driveway to get the average speed, the timing," Gullo explained. "We wanted the long-range sensor to be truly reliable. We all know the limitations of wireless, and we did test after test on this blind driveway."

In addition to the CCTV and touch panel systems, EDG integrated a home security system, three-zone HVAC with Crestron thermostats, a Lutron Homeserve lighting system, also tied to Crestron, and eight zones of distributed audio complete with XM radio, FM radio, and a Request music server as well as a media room. The client, Gullo said, had fairly specific requirements for music, both inside and outdoors on various decks and courtyards.

"There are several individual outdoor zones with two subwoofers on each of the upper and lower level decks," Gullo said. "The views of hills and valleys make sitting outside with music particularly enjoyable. The living room has a localized high-end system with freestanding B&W loudspeakers."

The media room, on the main floor, has a hidden installation designed not to interfere with the room's "country club" charm, defined by dark wood-paneled walls and rich fabrics. "There's not a hint of technology, but under the hood, there's quite a bit, including a 42-inch flat panel TV behind a motorized painting above the fireplace," Gullo said. "A 100-inch Stewart screen with a 16x9 aspect ratio recesses into a wooden soffit in