

# INTEGRATION AT HOME

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# BRILLIANT LIGHTING

INNOVATIVE AUDIO, OCEANSIDE, CA

It was a long, strange trip, but the result was much better than anyone ever anticipated. While that may be true for the winding road that leads to this hilltop home overlooking the Pacific Ocean, the description equally applies to the process of completing the lighting solution for this innovative Southern California project. After going through three different lighting designers and an untold number of change orders and system updates, the project was completed and eventually was recognized as the Integration Brilliant Lighting Award winner.

Jeff Ellis, co-owner and system programmer for Innovative Audio of Oceanside, CA, really had to keep up with all the changes. Jeff's brother and co-owner Tony Ellis says, "Jeff's flexibility as a programmer is unmatched. He dedicated an incredible amount of time to address the changes and meet the client's needs. Anyone else in his

right mind would have walked away from this project." In fact, after meeting with the client, two lighting designers refused to take the job and walked away. The third lighting designer, with whom Tony and Jeff Ellis ultimately collaborated, tried selling his own lighting system. "The customer wanted the lighting system to be integrated with the AV and other systems in the house, which was all Crestron," Jeff says, "It just didn't make sense to go outside and bring in another system."

Using Crestron's D3 Pro lighting software, Innovative Audio was able to more easily design and layout this complex lighting system. Crestron is used throughout the home to control all the indoor and outdoor lights, humidity and exhaust fans, a ceiling fan, window treatments, and garage doors. The indoor lights include line level, low-voltage incandescent, high hats, sconces, and halogens; outdoor lighting includes floods, spots,

and a projector that creates dynamic lighting patterns on the front lawn. Ethernet communication connects the AV to lighting, and the keypads are all wired with Cresnet cable. The shades, pool, and security alarm are all controlled via RS-232. Even the closet lights, which were triggered by simple jamb switches, were integrated into the Crestron control system. "I think only the kitchen appliances and the clock radio weren't on the system," recalls Tony.

The lighting system consists of 160 loads, may be controlled from 39 CLX lighting keypads, and features integrated control from 5 ML-500 handhelds or any of 10 TPS-3000 touchpanels. There are 20 shades, drapes, and sheers in the house; each is controllable individually, as a room, and as a group. The groups are organized as upstairs, downstairs, and whole house. While the size of the project is significant, the functionality of the



programming is truly amazing. "As we got into the design, the system doubled in size," Jeff explains, "but the need for control was ten times what we anticipated."

Every load, every room, and every group required independent scene selection and individual dimming control. The complexity is that there are two or three different scenes for each room in the house. Additionally, an "off" function was requested for every scene and every load throughout the house. Jeff quickly understood the need to prioritize each command because scenes would often overlap, causing commands to override or undo the previous command. "The logic and interaction between the scenes is mind boggling," says Jeff. "We needed to establish a variable to determine whether a scene is 'on' or 'off.'" The status of each individual load and every physical keypad may be monitored from the Crestron touchpanels.

With so many shared loads among different scenes, activating one scene often cancels a current scene. For example, the kitchen and living room are physically located adjacent to each other. "Relax" mode may bring the kitchen and living room lights down to 10 percent, but "Cook" mode may bring the kitchen lights up to 100 percent. The simple solution was to leave everything open and not try to prioritize all the scenes; the last scene activated takes affect. So, the living room lights remain at 10 percent, but the kitchen lights are now at 100 percent. Additional programming, however, enables the previous scene to be reinstated when the last scene is turned off. For example, if "Cook" mode is later turned off while "Relax" mode is still active, then the kitchen lights will not turn

off. Instead, the kitchen lights will revert back to the previous 10 percent level.

The HVAC and security systems are also integrated with the lighting system. There are four HVAC zones throughout the house that are controlled with Crestron TH-STAT thermostats, and several CCTV cameras that monitor areas such as driveways, gates, and entrances. The surveillance cameras are viewable from the TPS-3000 touchpanels.

Macros were programmed to fully automate these integrated systems. For example, when the "Vacation" mode is selected, the lights are on a preset schedule that is activated by the control system's internal astronomical clock, the alarm is armed, and the DVR is set to "record." When the "Vacation" mode is deactivated, the lighting schedule is not in effect and the DVR is set to "playback."

Additionally, whole house audio and video is integrated and distributed by two Crestron BIPADs and two Crestron PVIDs via three Crestron 12X60 amplifiers. Sources such as a Crestron FM Tuner, two audio servers, cable/DMX music, two



cable DVRs, and a DVD Server or DVD recorder/player may be selected in any of the 13 audio zones or 5 audio/video zones. The "Entertain" scene turns on indoor and outdoor audio throughout the house and around the pool area. Using the astronomical clock for automation, specified indoor and outdoor lights, including the pool and spa also turn on, but only when it is dark outside. Even the poolside fire pits are controlled from a

custom-fit outdoor keypads or WPR-48 waterproof remotes.

The home also includes a dedicated theater with Fiberstar sparkling star ceiling, custom sound panels, and Accoustimat sound suppression. The client can choose to view either the 61-inch plasma or 108-inch DLP projector from either the handheld Crestron ML-500 remote or the TPS-3000 touchpanel. Video Sources include a DVD recorder/player, a DVD server, and two distinct cable DVRs. Audio selections include two MP3 servers, a Crestron TTV-FM radio, and a cable box dedicated to DMX Music. The shades with blackout screens and designer lighting set the perfect mood for movie watching.

The client is especially concerned about leaving lights and equipment on in the house. He specified that nothing should be on in the house unless it is actually being used or unless he is aware of it. An "off" function is provided for every load and every scene. The "Away" mode turns off all the AV in the house. The "Shower" scene turns on the humidity exhaust fan in the master bathroom, and, after the scene is turned off, the



fans continue to run for 10 minutes and then automatically turn off.

"The client really tested our capabilities, and we in turn tested Crestron's," says Tony. "In the end, we delivered and the customer is happy. That's what matters." Kudos to the Ellis brothers and Innovative Audio for their perseverance on a long and challenging journey; the Southern California project is clearly an award-winning Brilliant Lighting design. ■

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- ★ **Audio Video Design** Newton, MA

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- ★ **Electronics Design Group** Piscataway, NJ

#### Hi-Rise Living

- ★ **Genesis Audio & Video** Irvine, CA

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- ★ **Texeleco** Buda, TX

#### Home Sweet Home Theater

- ★ **Baumeister Electronic Architects** Niles, IL

#### Brilliant Lighting

- ★ **Innovative Audio** Oceanside, CA

#### Awesome Audio

- ★ **Performance Innovation Corporation** Genoa, IL

#### Creative GUI

- ★ **Performance Imaging** New York, NY

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- ★ **Len Wallis Audio** Sydney, Australia