

Audio Extreme Home Theater Features Custom-built Speakers



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The owners of this dedicated 700-square-foot home theater filled every inch with some of the biggest, baddest A/V equipment on the market. "He wanted impact, slam and dynamic entertainment," says custom electronics (CE) professional David Devanna from Electronics Design Group (EDG), Piscataway, N.J. "We put in the largest screen that would fit—a 154-inch display from Elite Screens—and used huge custom-made speakers and subwoofers from Klipsch to give the room the impact of something you'd expect from a commercial movie theater."

Achieving such extreme A/V, though, would test the design and engineering skills of the pros at EDG. Integrating commercial-style products in a residential space often brings with it certain challenges and special requirements. For example, to produce the bright images the homeowner demanded of the 2.35:1-format screen, the room would need a projector with a

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System Design & Installation
Electronics Design Group (EDG)
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Knight Architects
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www.knightarch.com

Builder
Baxter Construction
Hopewell, N.J.
www.baxterconstruction.com

Acoustical Engineering & Design
Acoustic Smart

high light output and precise positioning. "It's often difficult to light up screens of this size, especially when they are made of an acoustically transparent material," Devanna explains. An Epson PowerLite Pro, which EDG fitted with both a zoom lens and anamorphic lens, possessed the lighting muscle, but getting the machine into prime location proved more difficult. Based on sightline calculations, the unit would work best mounted above the doorway to the theater—less than ideal visually and ergonomically. Rather than let the projector dangle at the entrance, EDG tucked it into the ceiling, and with the help of the engineers at Epson devised a ventilation system composed of several electronically controlled fans and vents, which would keep the hot-running projector cool and in top working condition.

Fit and Finish

At first glance, the walls, ceilings and seating in this space seem more decorative than anything else. But they also play a critical role in the theater's performance. Designed and engineered by Acoustic Smart, Merrick, N.Y., the fabric wall and ceiling panels contain acoustical materials to help prevent sound from seeping into other areas and to enhance the quality of the audio reproduction. Explains Acoustic Smart owner Richard Charschan, "The acoustical treatments prevent the audio from echoing and losing detail. It also helps 'scatter' the sound so that the audio sounds just as good to the people seated in the back row as it does to people seated on the custom sofa in the front."

As for the 4-foot-high architectural speakers that would flank the screen, EDG collaborated with the architect to build out the wall studs of the theater so that the large, powerful speakers could be recessed completely within the wall. "She allocated the 18-inch depth we needed for the three front speakers and two subwoofers," says Devanna. These custom-made Klipsch speakers, plus the remaining four ceiling-recessed, residential-grade Klipsch speakers, are powered by eight Crown amplifiers (three 700-watt amps, three 215-watt amps, and two 1,050-watt amps) for an audio wallop "that's way over the top of what you'd expect from a 700-square-foot theater," Devanna says, noting that this theater's audio system is not only about playing loud, but playing efficiently. "By having lots of power from the Crown amps and speakers that are engineered to play efficiently, you can achieve volumes that are realistic without causing the system to overtax itself," he explains.

No matter how big the audio gets, though, the theater's room-within-a-room construction prevents the sound from seeping into other areas of the house, namely, the living room

directly above. A combination of a vinyl barrier, acoustic wall lining and decorative interior absorption panels effectively contain the audio.

Of course, all the best equipment in the world means nothing if you can't easily control it. To simplify the operation of the powerful theater down to a single touch of a button, EDG installed a Control4 automation system. Using a handheld Control4 remote, the owners can tap a key to rev up the Epson projector, Integra receiver and Crown amplifiers, and dim the lights. From there, they can play content from different sources, including an Oppo 3D Blu-ray player, AppleTV, and cable box. The next step involves nothing more than sitting back in a reclining Acoustic Smart chair and reveling in a massive mind-blowing, ear-blasting A/V presentation.

Photography by William Psolka