

# The Challenges Of Custom Installations.

*Everything You Need To Know But Don't.*

by Paul Emmons



**Paul Emmons is a consultant to Polk Audio and has been involved in the custom installation industry for more than thirty two years. He was a charter member of the CEDIA Board of Directors. Paul can be reached at paul@paulemmons.com. To learn more about the CEDIA, go to www.cedia.org.**

It's Friday evening and everyone is running a little late. Party guests have started arriving, and the hostess asks her husband if you could put on some music. Holding a platter full of ribs, and already on his way outside, he has a harried look. She smiles, then walks over to the wall switches, which are next to the dining room door, and presses a button. Classical music begins to play in the kitchen. Her husband comes back from the barbeque and says, "How about something a little more up beat?" The hostess pushes a few more buttons, and

one of their favorite jazz albums begins to play. The sound is rich and full and fills the room, seeming to come from everywhere. She presses a button a few more times, advances the music to the third cut, and turns up the volume. With one more press, the same music begins to play throughout the house, as well as on the patio.

When the couple's best friends arrive, the kids all head to the den. The host and hostess' son presses a button on a handheld remote. *The Incredibles* begins to play on the big screen television and through the surround sound speakers. The music playing in the rest of the house is unaffected. Later that evening, one of the new guests to the house asks the host, "Where are the speakers?" When she points out the flush mounted speakers in the ceiling, the guest seems to have a hard time seeing them. "Wow, they really sound great," he says, impressed. "Thanks," the hostess says, happy to have been able to create a great evening of entertainment and music.

**Polk Audio's Custom Install LC265i Speakers have raised performance standards.**

The scenario I've just painted is not only possible today, it is common. The growing sophistication of home entertainment systems, not to mention the array of new sources that have literally been placed at our fingertips in the last few years, have turned a specialized cottage industry into today's fastest growing segment of the home entertainment business. I'm talking about custom installations and especially multi-room systems. The demand for these virtually invisible high-quality systems is soaring, and it's a fact that your options have never been more exciting.

But it's also clear that with the growing number of choices, and the growing sophistication of home entertainment systems, many of us are feeling a little overwhelmed to put it mildly. Where do you begin? Whom do you contact? Just how do you get a handle on a custom installation project for your home? This article will help put the major issues in perspective for you. I hope it puts you on the right track toward the system you've always wanted. First a little history to give you some perspective.

## The Good Ole Days Weren't So Good

You only have to go back a couple of decades to discover that custom home entertainment system installations were once viewed as "good enough" solutions that couldn't deliver the same sonic quality as "freestanding" or traditional music systems. Back then, all custom systems were, to varying degrees, a compromise between quality, function and cosmetics. What's more, prior to the mid 1980's, there were almost no products manufactured specifically for custom installation. The only alternatives for anyone who wanted a high quality, built-in speaker system were to cannibalize floor standing speakers or to literally install a complete bookshelf speaker into a wall or ceiling. Ultimately, the choices available to installers and their clients were extremely limited, regardless of how much the client was willing to spend.

## CEDIA Is Born. Customers Benefit

In the fall of 1989, a small group of home entertainment industry professionals (manufacturers, rep firms, specialty audio retailers, custom system designers and installers) got together with the intent to form a trade association centered on the business of custom installation. This group came to be known as CEDIA, the Custom Electronic Design and Installation Association.

Until CEDIA was formed, the vast majority of custom installers worked for very small high-end specialty audio retailers, with very limited access to

Until CEDIA was formed, the vast majority of custom installers worked for very small high-end specialty audio retailers, with very limited access to



training, resources or expertise outside their own direct experience. Installers learned almost exclusively on the job. There were no agreed upon standards, centralized training or resources for information beyond the customer service departments of manufacturers (who generally didn't have any concept of what "custom installation" was). The best installers were craftsmen who generally worked alone, or at most with limited interaction with others in their very specialized industry. With the formation of CEDIA, all that changed.

In the beginning, CEDIA's goals were to share knowledge and experience among those involved in custom work and to communicate the needs of clients and dealers to manufacturers of audio/video products. The association later evolved to include custom system designer and installer training, certification, networking and tradeshow. Today, CEDIA is a large and well respected international organization with more than 3,000 member companies worldwide.

As important as CEDIA has been to the custom install industry, and ultimately to consumers, the evolution of audio components and speakers is also responsible for the rising demand for today's sophisticated entertainment systems.

**This Ain't Your Parents' Stereo System**  
Even two decades ago, Stereo or "Hi-Fi" systems were fairly simple compared with today's equipment. All systems were

"analog." Basically, only a few sources existed (turntable or record player, AM/FM tuner, cassette deck, broadcast TV and video tape). And all systems pretty much consisted of the same components: source, switcher, amplifier and speakers. From the cheapest to the most sophisticated systems, ultimately the differences were primarily in the quality (and cost) of components, number of rooms included, labor and cabinetry.

My how things have changed. Today's systems are vastly more complicated than in the past. Systems are usually a hybrid of both analog and digital sources, with many new formats, including CD, MP3, DVD, SACD, D-VHS, FM, Digital Radio, Internet Radio, Media Center PC. Systems can be multi-room, multi-source, multi-zone, two-channel, surround sound (5.1, 6.1, 7.1, 7.3). Today's audio processing formats include Dolby,® Pro-Logic,® Pro-Logic II,® DTS,® THX,® all with multiple and ever improving standards. I hope you're already beginning to see the advantages of working with a professional.

**In-Wall Has Never Sounded Better**  
It's only fairly recently that speaker manufacturers, such as yours truly, have dedicated extensive research and design to the unique sonic challenges of "in-wall" speakers (i.e., bass loading, limited or non-existent cabinet volume, non-symmetrical speaker placement, variations in construction materials, etc.). As a result, there is no real qualitative difference between in-wall speaker systems and surface mounted or floor-standing designs when it comes to creating stunning sound. Most home entertainment equipment manufacturers now have an extensive line of products specifically intended for custom installation. And most of those products have been designed from the ground up for the unique requirements of home installation, with the same rigorous design procedures, as their freestanding products. "In-walls" no longer represent a compromise.

### Choosing A Custom Installer

If you're considering having custom installation work done, here are some things to consider:

Local specialty audio/video dealers are often a good place to begin. Many have a custom installation department. It doesn't need to be a very large department (actually, smaller departments can be just as competent). Well established local architects and builders may also be able to recommend designers and/or installers they have worked with before.

### Consult The CEDIA Directory Of Certified Professionals

CEDIA is an integral part of the custom installation industry. Consumers, builders, architects, interior designers, all of them recognize CEDIA as a professional resource. Through education conferences and training programs, members can obtain continuing education in both technical and business skills to enhance the professionalism of their employees and the growth of their business. The CEDIA certification program is currently comprised of Installer Level I, Installer Level II and Professional Designer. You're assured that members are established and insured businesses with bona fide qualifications and experience in this specialized field.

### Make Sure They Have Extensive Experience In Your Type Of Installation

The installers you choose should specialize in custom home entertainment installation (as opposed to an electrical contractor who moonlights with "stereo" installs or mass-market retail salesman who "can install it for you").

### They Should Be Willing To Supervise Your Installation From Beginning To End

You want to select someone who will be responsible for the whole job. This person, who may be the designer, installer or project supervisor, is what is known as the "Single Point of Contact."

*continued on page 16*

## An Overview Of Custom Home Installation Types:

Every job is the same in that it's different. But there are basically three types of installations, and yours will fall under one of these. Each presents its own challenges and opportunities.

### New Construction

This is the easiest from an installer's point of view and thus the most economical. Installers have many more options for wiring, device placement, etc. Use this as an opportunity to wire for everything you may want to do now and in the future. For example, perhaps you do not want to install speakers in the bathroom(s) or patio now. However, it would be prudent to run speaker/control cable from the main equipment location to most rooms or areas, without installing any equipment, just in case you may want to upgrade in the future. The cost to run only cable is very low as "wire is cheap" and the installers are already there. Attempting to retrofit additional rooms and run the same cable after the house is finished will be much more expensive.

### Major Remodel

This can be almost as flexible as new construction, depending on the level of destruction. At minimum, most areas will be accessible and new plaster and paint following installation provide for many options.

### Existing Construction

These are the most difficult. Options are limited by access for running cable and installing devices (attic access, crawl space availability, single story vs. multi-floor; single family residence vs. condominiums and town homes, all have an effect on what is possible). Most designers and installers will do their level best to do the installation with minimal need for plaster and/or paint contractors to repair walls. If damage must be done to walls in order to accommodate wiring and speakers, you should plan for a drywall and paint contractor to do the repairs.

CHECK OUT—  
**custom**  
INSTALL  
**speakers**  
www.  
**polkaudio**  
.com/homeaudio  
/products/hidden

## Custom Installations

continued from page 13

This is the person you will deal with throughout the course of your installation project, which, depending on how ambitious your project is, could last more than a year.

Many very qualified individuals operate from home offices with no retail space. However, they should have extensive industry references and a close relationship with one or more major retailers in your area. They should be insured and have good credit references.

A competent installation firm will have extensive client references. A few clients should be willing to talk with you. Installers should also have a portfolio of pictures, proposals and engineering specifications of jobs they have done in the past. Look for professional certification, though it does not guarantee

you'll be happy with the outcome of your installation.

### The Process You'll Go Through

Typically, the first step is a walk through with your system designer at your residence. You should discuss what you might like to have done, including options, access, wiring, equipment locations, rooms, etc.

Within a few days or weeks, the designer should provide you with a written proposal that includes detailed specifications of work to be done, an equipment and materials list, itemized prices and terms of sale agreement. The system designer may then meet with you and go over the details of the proposal. You should have a thorough understanding of the capabilities of the system and how it will operate.

You may go through one or more revisions on the proposal until it meets with your expectations and budget. At that point, you'll need to provide a

deposit, generally covering the initial work to be done and some percentage of the equipment amount.

### Some Final Housekeeping Issues

Equal emphasis should be made for both function and cosmetics. Choose the highest quality components that you can afford, especially for items that are permanently installed into the walls of your home, such as speakers. The installation labor costs can often exceed the cost of the equipment itself. If you later decide to install higher quality speakers, the cost of removing the old ones and installing new ones can be very expensive.

### Become A Serious Control Freak


One item you may be purchasing as part of your system are custom remote controls and/or in-room system controls. You should be able to get some "hands-on" experience with these controls, whether in a showroom or in your home. I would even insist on this, as it's important to be comfortable with the sophistication of the controls and to consider ease-of-use for anyone in your household who may interact with the system.

### Remember, Your System Comes Together One Step At A Time

The initial phase of the job will be the pre-wire (run cable, install plaster rings and equipment enclosures, etc.). If a new construction or remodel, the next phase will come after walls are in (Trim Phase). The Final Installation Phase will follow most of the contractors and really should not be done until you are ready to move in. Following this will be power-up, system programming, testing, troubleshooting and operating instruction. In some cases, these will be divided into separate phases, depending on the complication of the job. In many cases, progress payments and deposits will be required prior and/or following each phase of the project.

Once an installation agreement has been reached and work has begun, all changes to the original agreement, no matter how small, should be in writing. This is known as a "Change Order." Usually, the change order references the original agreement with the specification(s) to be changed and a dollar value (plus or minus) of the change. This protects both you and the contractor.

Often, equipment and materials are delivered or installed at the job site at various times throughout the job. Each time equipment is delivered to you or the job site, a delivery receipt should be signed, detailing the equipment delivered and serial numbers for any items that have them. This is important to assure both parties as to who is responsible for the equipment detailed in the agreement at any point in time. Once the installation is complete, you should get instructions on how to operate each function of your system, documentation (equipment owner's manuals, simplified operating instructions, warranty cards, etc.); contact information for service and repairs also needs to be provided.

As you can see, creating a custom-designed and -installed home entertainment system can be a very involved and challenging experience. But it's one that rewards those who love truly great listening and viewing experiences. With the incredible sophistication of today's systems, virtually invisible, sonically amazing, and with the application of exciting new sources, the opportunity to fill any room in the house with high-quality audio and video is a dream that more and more people are making come true. 

## Questions To Ask When Designing Your Home Entertainment System

*How do you entertain? Sounds simple, but consider:*

**Would you like to have music playing through out the house during a party? Would you like to be able to play different types of music (sources) in different rooms at the same time? Would you like to watch a DVD in the Master Bedroom while having music playing in other rooms? Would a child's room be used, now or in the future, as a guest room or home office? Would you like to be able to have music playing outside on the deck or patio, while playing a movie in the Den? Would you like to have high quality music without seeing the speakers? Would you like to be able to control which CD is playing throughout the house from a small control panel in each room? Who in the household will be operating the system?**

*These are just a few of the questions you need to answer when deciding what type of system you want.*

Audio.  
accessories  
available:  
[http://shop.  
polkaudio.com](http://shop.polkaudio.com)