



Integration.
Automation.
Imagination.

Home Theaters

BRINGING THE MOVIE THEATER EXPERIENCE TO YOUR HOME



Imagine a room in your own home that gives you the joy of going to the movies. With a Bravo AV custom home theater, you can get the movie theater experience in the comfort of your own home. A home theater is the ideal place for entertaining family and friends or relaxing after a long day at the office. Get the power of the latest technology coupled with easy use and professionally crafted aesthetics.

A home theater is a room specifically designed to experience movies, TV shows, sports, video games, and other media at the highest quality possible. Bravo AV's goal is to complement your lifestyle by demystifying the home theater and delivering to you:

- Crisp Picture
- High Fidelity, Rich Sound
- Comfortable and Inviting Environment

Designing a home theater involves many variables of various weight/significance based on your desired outcome. The factors that you need to evaluate and prioritize are (in alphabetical order):

- *Acoustics* – A large portion of the sound that you end up hearing is reflected sound. The highest quality theaters have acoustically engineered panels that help mitigate the detrimental effects of reflected sound.
- *Aesthetics*
- *Automation/User Control*
- *Electronics* – This refers to the bulk of the system’s components that will be feeding the projector. These components are discussed in the following pages.
- *Function of spaces adjacent to the theater (noise insulation)* – Would you like to be able to work in the space next to the theater even while there is a loud movie playing? Bravo AV can incorporate sound proofing methods that blend in with the aesthetics of your theater and allow you quiet in a neighboring room even though the speakers may be blaring in the theater.
- *Household Appliance / HVAC noise isolation from theater* – Theaters are often located in basements, where unused space can be utilized. Basement theaters, however, are often close to noisy machines that can interfere with the theater experience. Acoustic materials can be strategically placed to isolate those sounds and prevent them from bleeding into the theater space.
- *Independent HVAC* – Quiet air circulation with a different temperature profile from the rest of the house can improve comfort when spending extended time in the theater.
- *Lighting* – All quality theaters have remote lighting control. This allows you to control light levels from your chair.
- *Room construction and dimensions* – Wall material and stud placements play an important role in theater design and can affect the theater’s acoustic response.
- *Seating setup*
 - *Number of seats*
 - *Sight lines for each row*
 - *Seating spacing*
 - *Chair type and design*
- *Speaker selection and placement* – Depending on your surround sound selection, Bravo AV will place speakers to make sure your theater sounds its best.
- *Video/image quality* – This aspect focuses just on projector selection. Projectors are often the most expensive piece of electronic equipment, and rightly so, they play a major role in the quality of the image you see on your theater screen. In order to allow the projector to perform its best, a high-quality screen is necessary to compliment it.

All of these considerations should be evaluated within the context of your budget. With years of experience at its disposal, Bravo AV is well prepared to help you navigate the decisions regarding the design, construction, and use of your custom home theater.

A good home theater setup is the combination of electronics engineering and room design. The components of a home theater plan are as follows:

Projector: An optical instrument that projects large images onto a screen. Today's HD projectors can project incredibly detailed, bright images on screens typically around 100 to 150 inches in width. Projectors bring the grand scale you experience at the movies and allow you to observe more details in video.

AV Receiver (AVR): The audio-video receiver's primary purpose is to amplify sound from a multitude of possible audio sources as well as route video signals to your TV or projector from various sources. The AVR is the brains and brawn of your theater:

1. The Brains: A Preamplifier that switches and controls which audio and video source is selected (such as a Blu-ray player, cable box, CD player, etc.) and processes the incoming stereo or surround sound signals and distributes them to the correct speaker amplifier channels and the subwoofer output. The preamp in an AV receiver can also route video signals coming from source components (such as a Blu-ray player) and directs the video signal to the projector.

2. The Brawn: A built-in multi-channel amplifier (5 or 7 channels for traditional surround and 11 to 13 channels for Dolby Atmos) that sends the surround sound signals and power to the speaker system.

Preamplifier (Processor) & Amplifier Combo: The pre-amp and amp combo serves the same function as the AV Receiver, but the separation of the functions into two separate components allows for a higher level of audio fidelity. By separating the pre-amp or processor from the amplifier the manufacturer is able to focus more on increasing the performance and optimizing sound outputs.

Speakers: A typical theater touts what's commonly referred to as a 5.1 surround sound system, but bigger setups, such as a 7.1 arrangement, are also common. A 5.1 system consists of a center, left, right, a speaker on each side of the viewers, and a subwoofer. A 7.1 speaker setup is the same, but with two additional speakers on the back wall, behind the viewers. Recent technological developments such as Dolby Atmos, utilizing 2 to 6 strategically placed ceiling speakers, allow sound to smoothly flow between speaker channels and further immerse viewers in a virtual environment, making speaker placement a requisite for building a great theater.

- **Center Speaker:** The center speaker in a home theater setup carries most sounds and all the dialogue. Ideally, center speakers are placed within one or two feet above or below the horizontal plane of the left and right speakers and above or below the display device, unless placed behind a perforated screen.
- **Left and Right Speaker:** These are placed in front of the viewer to the left and right of the center speaker.
- **Side Surround Speakers:** Speakers located beside the listener that reproduce the surround sound channels of surround-sound-encoded audio programs.
- **Rear Surround Speakers (7.1 setup):** Speakers located behind the listener that reproduce the surround sound channels of surround-sound-encoded audio programs.
- **Atmos Speakers:** Ceiling mounted speakers utilized to develop a more immersive soundtrack based on Dolby Atmos object-oriented soundscape technology.
- **Subwoofer:** A loudspeaker dedicated to producing bass (sound with low frequencies.) Subwoofers typically add the shake and rumble to your home theater.

Please see our Dolby Atmos Speaker layout at the end of this article for more information.

Sources: Source components are devices that provide audio & video signals to your theater system. Blu-ray players, Cable Boxes, Satellite Receivers, video games and digital media servers are all great examples of sources. The source quality is an important part of the system because the AV signal can only degrade as it travels through the components that lead to your projector. Today's 4K Blu-ray and digital media servers are among the highest quality sources available to consumers today.

Wire and Cables: Wire and cables connect the entire system together. Examples of wire & cables necessary to outfit a complete home theater would be:

- **Speaker Wire** connects the speakers to the amplifier (a minimum thickness of 14 gauge copper wire is recommended. 10 gauge is preferred.)
- **Coax or RG6 Wire** is typically used for Cable TV.
- **Cat-6 or 7 Wire:** Category-6 or 7 is a communications wire used for many applications. Networking, telephones, digital music transmission and keypad communications are some basic examples of the many uses of Cat-6 or 7.
- **HDMI Cable:** (High Definition Multimedia Interface) sends both audio & video on one cable. HDMI also supports the highest quality video available on the market today.
- **Fiber:** In our current projects, fiber optic cable is run from the AV receiver to the projector to meet future video delivery needs. Traditional copper cables will not be fast enough to keep up with the data transmission needs of next generation electronics. The industry standard will soon become fiber optic

For more information on wire and cable see additional articles on the Bravo website:

- **Theater Connectivity Diagram**
- **Classification of Low Voltage Network Wire**
- **Structured Wiring Approach.**

Surge Protection: Electronic systems have become very expensive, even at the entry level. Surge protection helps to protect your expensive electronics from lightning, power surges, brownouts, blackouts, and other possible dangerous power fluctuations that can perpetuate through your home electrical system and destroy your investment.

Power Conditioning: Modern electronics have become increasingly better at displaying very high levels of detail in video and audio images. The US power grid is somewhat antiquated and not well maintained. As a result, the power coming into your home contains voltage irregularities commonly referred to as “noise”. Furthermore, within your home you have appliances and various other devices plugged in throughout the home that create noise. Power conditioning takes the incoming electricity, removes noise and interference and provides a clean power stream to your electronics, allowing them to operate at their best.

Theater Chairs: Theater chairs come in all sizes, color, firmness and styles. Many chairs have motorized options and some have heaters. We work with the best local cabinet makers, interior designers, and chair makers to give your theater the style and comfort level it deserves.

Work with Bravo

Bravo AV has years of experience and technical knowledge in the construction of custom home theaters. We will work with you to make sure your home theater is exactly how you imagined it. Your investment will provide you with years of enjoyment with friends and family.



For a more complete picture of the home theater that Bravo can provide you with, please refer to Bravo's Home Theater Series, found on the website:

- **Home Theater Acoustics**
- **Home Theater Chairs**
- **Home Theater HVAC (Heating, Ventilation and Air Conditioning)**
- **Home Theater Questionnaire**
- **Home Theater Process Checklist**

For additional resources please visit our website's Knowledge Center. Here you will find several articles on home theaters. Additionally, please check out our gallery of home theater photos. There you can find a series of 19 photos that chronical a home theater install from start to finish.

Contact Tom Curnin at 908-953-0555 or Tom@BravoAV.com. Your Professional AV Expert.

Tom Curnin, the owner of Bravo AV, is a CEDIA Professional Designer, THX certified professional home theater Level 1 and Home Acoustic Alliance trained to Level II.

Bravo AV is a HTA (Home Technology Association) Certified Install Firm