
THORBURN ASSOCIATES INC.
Acoustic and Technology Consultants
Designing Quality Environments
eNewsletter

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Welcome to the December 2008 eNewsletter!

Looking ahead to the holidays and the New Year in the spirit of renewal, hope and frugality, Thorburn Associates wishes you and your colleagues, employees, family and community the very best for the coming season.

We have completed the move to our new facility in the Raleigh-Durham area. The new address is 2500 Gateway Centre, Suite 800, Morrisville, NC 27560. Phone, fax and email addresses remain the same, and the California corporate headquarters is the same.

As always, it is our goal to make sure that Thorburn Associates is your single point of contact for all your Acoustic and Technology Design services. If you have an idea, question or suggestion, please drop us a note at enews@ta-inc.com.

Focus on Acoustics: The Cocktail Party Effect

We've all been to parties - especially around this time of year as we celebrate the holidays - and noticed how noisy these events can become. As the wine runs low, the noise level often runs high, but what's really interesting is the personal acoustical phenomenon that takes place within this environment and your own ears. Despite the ambient noise level being at or above the level of your conversation, you're still able to hear and understand the person you're talking to. This is commonly known as the "cocktail party effect." Auditory information sent to the brain is bottlenecked through a series of filters, focusing on information that is important. Whether that be a conversation with a good friend at a busy bar, the story you've heard a million times from your senile old uncle, or your name being mentioned on the other side of the room, your auditory processing system is working to filter out the high level of background noise and capture those sounds that have relevance and meaning to you. So this holiday season, as the corks fly, the noise levels rise and we enjoy the company of family and friends, don't forget to observe the cocktail party effect and appreciate just how very cool the human body's very own built-in, organic auditory processing can be.



Focus on Technology: AV & IT Convergence

Convergence seizes two different technologies that originated with different purposes, and integrates them to have a common function in a common environment. In the current evolution of the Audiovisual industry, there is a convergence with the Information Technology Industry, so that IT considerations are becoming a major factor in every AV designer's work and the two industries, once having separate paths, have merged onto the same path, creating if you will a wider roadway with the potential for certain traffic problems.

In practical terms, this means that the design of an AV system, ranging from videoconferencing to centralized monitoring, is transformed from a simple engineering diagram into something considerably more intricate, while the system itself is likewise transformed in terms of networking, management and control. Convergence creates an extra degree of complexity, but the emerging benefits are rewarding – very much so for large corporations, although there are traffic issues to anticipate and deal with and quality of service can be a delicate issue.

When a network's bandwidth is not sufficient to handle a great deal of AV packet traffic, communication can be delayed or entirely dropped. This data loss is known as "latency." In videoconferencing, dropped packets will result in jitter and unintelligible conversations. There is software that helps minimize packet loss by prioritizing traffic, but software alone cannot resolve this issue. Current audio and video data simply require a large amount of bandwidth. Understanding and providing sufficient bandwidth for the various AV applications is the key.

AV control is another key part of enterprise-wide convergence. Control has little bandwidth requirements; as a result, many IT-centric network applications are becoming powerful tools to manage business assets. Proactive monitoring, reporting, and scheduling can all contribute to an increase in productivity and also support energy efficiency. Control is a simple answer for superior quality of service.

With proper organization, sophisticated systems engineering design can provide companies with efficient, enterprise level convergent solutions.

Project News Madison County Courthouse Restoration

Audiovisual systems in America's courtrooms are nothing new these days. Many of us remember the O.J. Simpson murder trial and how Judge Ito would say, "Put it on the Elmo," (Elmo being a brand of video document camera).

Most new-construction judicial facilities that Thorburn Associates has designed include some combination of sound recording, sound reinforcement, and video display. Some include permanently mounted cameras for video archival of proceedings. Others use video conferencing for remote arraignment of persons that may be jailed at a facility located several miles from the courthouse – or for remote experts unable to travel to the court facility.

One of the more fun, yet challenging projects for us was designing an AV system to discreetly complement the restoration of an 1829 courthouse in Madison County,



Virginia. This historic courthouse was built based on a design by Thomas Jefferson and the current effort to return it to its original glory is headed up by Dalgliesh, Eichman, Gilpin & Paxton, PC architects. The main courtroom layout is quite different from what we generally expect: The jury box is located directly in front of the judge's bench facing into the room, and the witness stands at a podium facing the judge and jury (instead of sitting to the judge's left.) Talk about a formal confrontation!

TA's design provides microphones for recording and speech reinforcement at the normal locations (judge, witness and counsel tables). As in all courtrooms, attorneys occasionally get up and address the jury directly. Small, surface-mounted microphones will be mounted in the railing in front of the jury box to pick up the voices of these wandering attorneys. In addition to speech reinforcement, the ability to record court sessions will be provided. An automatic microphone mixer/DSP (digital signal processor) will condition and mix the microphone signals. A wall-mounted audio connector will be provided at the court reporter's seat for portable recording equipment.

Court stenographers are still being used in many instances. However, many newer courts are implementing network-based recording software that allows recorded audio files to be digitally cataloged and archived. The Madison County Courthouse will choose their recording method.

Hiding the audio system components in this historical space was relatively simple, but video systems presented a special challenge. The video display system will be used for the presentation of video-based evidence that may originate from a computer, document camera, VHS/DVD player or other portable video player. Small, individual monitors were considered but would have cluttered the "old world" look of the Jeffersonian design. Two large, wall-mounted, flat panel displays were proposed, but one would have blocked a new window that the architect had carefully placed near the front of the room. The final solution is a large, motorized projection screen at one side of the room, and a wall-mounted video projector on the opposite wall. Sight lines, though not perfect to all observers in the gallery, will be very good for the judge, jury and counsel tables.

Completion of the renovation/restoration is slated for late 2009. As audiovisual technology system consultants, we often have to wait two or three years for our designs to come to fruition. We believe that this particular courtroom project will be worth the wait.

Product Review: Analog Signage

Let's face it: Sometimes you don't need a projection system or a monitor. Sometimes you just need a sign! But even plain old signage has been moving forward and making the most of advances in technology. An example is the nifty banner signs and related products offered by Post-Up Stand (postupstand.com). The sign is a lightweight, digitally printed banner that unscrolls to be displayed on a frame, available in a variety of sizes, single- or double-sided, that include big floor stands appropriate for trade show booths as well as small tabletop displays. There's even a battery-operated, motorized scrolling version. Tell them Thorburn Associates sent you!

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