

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

December 2007

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Greetings!

Welcome to the December 2007 eNewsletter. This busy year is coming to a close and we'd like to wish all of you safe travels and Happy Holidays.

We are pleased to announce that Lance Sturdevant has joined TA in our North Carolina office as a Senior Audiovisual Consultant.

Lance brings with him over 27 years in the A/V Industry. For the past two years, Lance served as the Systems Engineer at Video Corporation of America and previous to that, as a Consultant for Cerami and Associates. He is looking forward to the collaboration and design process with new clients.

Welcome Lance! He can be reached at 919-463-9995, extension 211 or email him at: LAS@TA-Inc.com.

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

To RT60, or Not to RT60

It's surprising how often we're asked to design a space for a specific reverberation time (RT60), when in actuality it is a completely inappropriate criteria for the project. We understand that "reverberation" is just a really fun word to say, but it is very important to utilize the proper tools when analyzing the acoustical design of a space. For the case of RT60, large rooms are the key. Strictly going by size, a room can be considered "large" when it starts to reach 6,000 cubic feet.

Acoustically speaking, a room qualifies as "large" when the reverberant field dominates the properties of the room, such as loudness, clarity, balance, and intimacy. When the amount of sound that reaches your ear due to reflected sounds

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is greater than the amount of sound coming from direct sound waves, you are in the reverberant field. Within this zone, the loudness of sound is relatively constant from one position to the next, and the overall level depends primarily on the total amount of the room's absorption.

This is the major difference between large and small rooms, where small rooms are not able to develop this diffuse, uniform sound field, and are instead chiefly characterized by acoustic abnormalities due to the room's physical dimensions.

Large rooms demand a great deal of respect when designing for proper acoustics. With the clarity of sound being of utmost importance, three elements should be addressed: reverberance, background noise, and reflections (echo).

While reverberation and reflections play an important role in distributing sound throughout a room, if left unchecked reverberation can seriously deteriorate the understanding of speech and the perception of individual lines of music as sounds blur together. Excessive background noise can additionally raise the threshold of audibility in the room, masking quieter passages of music and spoken consonants that give speech its intelligibility.

Rooms where the perception of music or speech is key to its functionality – gymnasiums, rehearsal rooms, worship spaces, ballrooms, cafeterias, and corporate boardrooms – will greatly benefit from good acoustics. Good acoustic design creates a comfortable, safe, and usable environment within any large space.

Storrs Hall, a part of the College of Architecture at the University of North Carolina Charlotte, is a good example. The building has a large gallery for exhibitions, social events, educational gatherings, convocations, and meetings. The problem was that nobody within the room could hear or understand each other, so TA was brought in to review the space and provide recommendations.

Initial measurements showed a reverberation time three times longer than the space should have been designed for. Focusing on the excessive reverberation and reflections, we provided recommendations on the placement and form of additional interior finishes. With the Hall's renovations complete, the Dean of Architecture, Ken Lambla, happily informed us that at a recent meeting held in the gallery, "it was the first time we could all hear each other speak!" We're glad to have helped!

The capacity for communication and understanding is a fundamental aspect of a large room. To enjoy an excellent sounding room from day one, designing for reverberance, background noise, and reflections will provide the quality of acoustics you need for enhancing speech and music intelligibility.

Digital Signage Update

Digital Signage is gaining widespread acceptance. When Eric Cronwall, one of TA's Senior Audiovisual Consultants, first presented a technical session on digital signage at InfoComm in 2003, digital signage was in its infancy in the U.S. Back then, this new use for AV display technologies tied with networks for the creation, distribution and management of sign content was just starting to gain momentum.

In Europe and Asia, digital signage has been accepted in all markets for a number of years. We are happy to say that digital signage is now finding widespread acceptance in the U.S.

We are finding the biggest boom is in hospitality, corporate, and education facilities where electronic displays are being used in various functions as wayfinding, room scheduling, Human Resource notification and employee training.

In a recent TA project for a high-tech firm, the system used a central head-end and Universal Twisted Pair (UTP) distribution to create a flexible signage system that is used for internal marketing and Human Resources.

In three recent TA education projects, digital signage will be used for indicating class changes, event notification and wayfinding for events that bring the public on campus.

In the wake of events at Virginia Tech, there is also a renewed interest in connecting displays on campus for an integrated messaging system that can give visual and audio directions during an emergency situation. These systems are being designed to operate on the campus network and can provide discreet instructions to particular facilities.

Digital Signage has potential for use in numerous facility types: it directs people to places, it calls to action, it informs and alerts. A digital signage system is now an efficient replacement to static signage.

Project Highlight: University of South Florida Joint Military Science Leadership Center

Our military forces require more collaboration between branches than ever before. At the University of South Florida (USF) Joint Military Science Leadership Center (JMSLC) the goal is to provide the skills that facilitate that collaboration with a commitment to educate and train military officers to be prepared for leadership roles.

The JMSLC focuses on developing effective leadership in a changing environment through high quality classroom delivery, structured research, and community-based experiences. Thorburn Associates provided the audiovisual system design including systems for those classrooms.

The four-story building already had audiovisual infrastructure laid out and partially in place when TA was brought on board. TA's audiovisual design included fleshing out that system with integrated audiovisual components using Universal Twisted Pair (UTP) based signal distribution.

The first floor classrooms are equipped with projection systems to supply distance learning and videoconference capabilities as well as traditional lecturing. The central control room on this floor (a satellite control room is on the 2nd floor) allows technicians to operate the cameras in the distance-learning rooms as well as acting as the central distribution point for all AV signals on the floor. Feeds from the 2nd

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floor auditorium will allow the 1st floor rooms to be used as overflow spaces for large events.

On the second floor, the auditorium and four attached, divisible classrooms are each videoconferencing capable and equipped with three projectors in the main room. Surround sound and theatrical lighting systems are also included in the auditorium.

The third floor consists of conference and meeting rooms with videoconferencing. The main video conferencing room has dual flat panel displays, a smartboard (overlay on a plasma display that allows marking up of documents and data storage) and ceiling-mounted microphones.

The fourth floor contains the commanding officers' "war games" video conference room and offices. All are equipped with flat panel displays and set top video conference systems.

As students learn the skills to be officers in our Nation's Armed Services, they are aided by the latest technology in the classrooms.

For more information: <http://www.usf.edu/index.asp>.

Product Review: LiveWires—Custom Fit In-Ear Monitors

LiveWires, from Earpeace Technologies, is a truly unique holiday gift for the music lover in your life. Because Livewires are custom fit (an impression is made of your ear by an audiologist) these in-ear monitors are amazingly comfortable and produce exceptional sound.

In-ear monitors (IEM's) are like earbuds inserted directly into the ear. Unlike earbuds, LiveWires can be worn for many hours without falling out or causing discomfort.

With a price tag of \$249 (plus your audiologist's fees), these IEM's come in 8 different colors and can be printed with your custom logo for a bit more.

The silicone impression your audiologist makes of your ears is a fast and easy trip and usually costs around \$40 or less.

The dual driver sound from these IEM's is perfect for stage shows as well as the audiophile in your family. LiveWires are used by professional musicians including members of Steely Dan, Toby Keith, Alice Cooper, Hannah Montana and the entire orchestra and cast of ABC's Dancing with the Stars.

The fully replaceable cables have 360 degree rotating connectors allowing for greater flexibility and range of motion.

As we've mentioned in previous eNewsletters, audiologists are concerned about the increasing use of MP3 players and corresponding exposure to high sound volume created by standard "earbud" type earphones. By blocking out ambient noise, LiveWires helps prevent hearing damage and allows the user to listen at lower volume levels.

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For more information, please visit: <http://www.livewiresforyou.com/>.

A gift certificate is available for the holidays, call: 1-800-821-0131.

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