
THORBURN ASSOCIATES INC.
ACOUSTIC AND TECHNOLOGY CONSULTANTS
Design and Engineering
eNewsletter

April 2006

In this issue:

- Greetings – TA Celebrates 14 years!
 - Where We'll Be – AEP, CSHE, AIA, InfoCOMM
 - Twisted Means to an End – Advantages of Category 5 Cable in AV Installations
 - Sound Health
 - Take a Walk on the Wild Side – North Carolina Wildlife Resources Commission, Wildlife Education Center
 - Ceiling-mounted Microphones
-

Greetings

April 1, 2006—Today Thorburn Associates is 14 years old, no foolin'! Spring has sprung but before we know it, our rain will be over and summer will be drying out the green hills. Take a moment to appreciate the here and now. Fourteen years has been a whirlwind of challenge, growing pains, gaining new friends, and sometimes holding our breath, anxious about what comes next. As they used to say – it is the best "E-ticket ride" around!

As we stand before the fourteen candles on the cake, ready to start the celebration, we wish health and happiness for every one. A great big THANK-YOU to those who've hired us, worked with us, supported us, and helped us make it through – here's to a future filled with successful projects!

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

Where We'll Be

If you plan to attend any of the following events, and would like to set up a meeting, just let us know.

The Association of Environmental Professionals (AEP) meets in Newport Beach, CA, April 9 - 12. Some great guest speakers, including William Fulton, are presenting as well as some fantastic opportunities to see the progress being made on behalf of the environment and local natural habitats. The kayak trip to the Upper Newport Beach Ecological Reserve makes this conference a must!

The California Society of Healthcare Engineers (CSHE) will hold its 35th Annual Institute April 19 - 21 at the Crown Plaza Union Square in San Francisco. "Bridging the Gap Between Technology and Healthcare" is the theme. TA will be exhibiting, so if you need additional information please contact us.

American Institute of Architects (AIA) National Convention and Design Exposition is coming up June 9 -11 at the Los Angeles Convention Center. TA will be exhibiting in booth #2913. If you need a free pass to the Design Exhibition, just let us know.

Presenting at InfoCOMM International in Orlando: June 6 - 10. Last year 725 exhibitors and over 26,000 people attended. Continuing to support the industry, TA's Designers and Engineers will be out in force, so register for one of the following classes or give us a call if you'd like to hook up during the conference.

JUNE 6 - Seminar: ST8 - Super Tuesday: Digital Signage, 8:00 AM- 3:30 PM. Speaker: Eric Cronwall, CTS-D. Description: Digital signage is one of the most recent things to hit the AV and IT industries. Part display technology, part network infrastructure, and part content creation and management, there are many aspects to digital signage – some not for the faint of heart. As a follow up to last year's many sessions on digital signage, some of the industry's heavy hitters are collaborating to bring an in-depth look at the market, and to help those who are planning to wade into digital signage. Recognized industry leaders will be sharing their war stories during this case study-based session. Participants in this session will come away being able to: plan for digital signage technology requirements; identify and create a core group of champions within an organization to foster a successful system; and avoid the pitfalls from which many digital signage integrations suffer.

JUNE 7 - Seminar: W1 - Introduction to Acoustics, 8:00 AM- 12:00 PM. Speaker: Steven J. Thorburn, PE, CTS-D, CTS-I. Description: Gain a basic knowledge of essential acoustical concepts. Learn definitions for common terms and explore the opportunity to put this knowledge to use making basic measurements and calculations. Learn to measure background noise, calculate reverberation times, and determine the location of echoes. Acquire a lasting tool in the form of a detailed CD-work book that can be referenced for years to come. Bring your scientific calculator to help with on the spot calculations (specifications can be found at www.ta-inc.com/masterclass.htm).

JUNE 7 - Seminar: S84 - How to Issue an RFQ and RFP for AV Designers, 1:30 PM- 3:30 PM. Speaker: Steven J. Thorburn, PE, CTS-D, CTS-I. Description: Learn to issue RFQs and RFPs to AV system designers and contractors, for both design/bid/build and design/build project delivery methods. Receive checklists and review multiple samples of real world documents that have been submitted to and by an AV engineering office. Learn what to look for in qualifications and bids.

JUNE 8 - Seminar: S38 - Defining the Perfect Teaching Station, 8:00 AM-10:00 AM. Speaker: James Horn, CTS-D. Description: How do you define and build the perfect teaching station for college and university classrooms, seminar rooms, and auditoriums? Join this overview of the design process for teaching stations and educational spaces. Learn to develop a successful teaching station, while addressing differing educational situations and needs. Examine the elements of the evolving teaching station, discuss ideas with your colleagues, and review the important steps in the design process for your perfect teaching station. Share input on "real world" issues encountered by those meeting the divergent needs of designers, end-users, and maintainers of equipment. Explore critical design issues including teaching station definition; physical locations and sizes; equipment inclusion; user needs; and construction, security, ergonomics, and ADA issues.

JUNE 8 - Seminar: W5 - Advanced Acoustics, 8:00 AM-12:00 PM. Speaker: Steven J. Thorburn, PE, CTS-D, CTS-I. Description: Gain a deeper understanding of acoustical design through the hands-on evaluation of a large boardroom and a 300-seat auditorium/lecture room. Explore topics including even distribution of low frequency room modes, wall constructions to control noise, absorption, echo control, HVAC noise and vibration control, and why some room finish materials are more efficient at reverberation and echo control than others are. Each

participant receives a detailed workbook on CD-Rom. Bring your scientific calculator to help with on the spot calculations (specifications can be found at www.ta-inc.com/masterclass.htm).

JUNE 8 - Seminar: W7 - Presentation Facility Design and Integration, 8:00 AM-12:00 PM. Speaker: Derek Meares, CTS-D. Description: Explore issues in new facility planning and design, and existing facility renovation. Learn proper image size, viewing angles, and sight lines for AV spaces. Topics include audio, video and lighting integration, acoustics, ADA issues, project coordination with architects and other trades.

Twisted Means to an End – Advantages of Category 5 Cable in AV Installations

Category 5 (Cat-5) cables are typically used in computer cables and connectivity products for building and maintaining computer networks, telephone systems, and video applications. The “category” classification identifies the quality of the cable and manufacturing standards as well as installation standards. It consists of four twisted pairs of copper wire terminated by RJ45 connectors. Cat-5 cabling supports frequencies up to 100 MHz and speeds up to 1000 Mbps.

Now, instead of using standard audiovisual wiring, which tends to be bulky and expensive, you have the option of using Cat-5, which functions the same way as standard data network cables. Cost savings are found in smaller interface plates, smaller conduit sizes, and overall installation labor. This provides a viable solution to historical renovation since wall and floor penetrations are minimized which can reduce the impact of installing cabling.

However, when used with audiovisual products such as projectors, there is a cost overhead because transmitters and receivers are required at either end (unlike standard cabling which doesn't require the transmitters and receivers). The transmitters and receivers convert the video signal to allow transmission over the Cat-5 network cable.

This cost overhead can be significantly less than a project that requires floor boxes and conduit, especially when there are associated architectural issues or high installation costs. A project in a high labor cost area, i.e. San Francisco or New York, can use Cat-5 cables for an overall cost savings despite transmitter and receivers.

The downside is that Cat-5 cables are limited in resolution and cable length – up to 100 feet for standard and 1500 feet for long-distance transmitters.

Sound Health

Music can reduce stress, enhance relaxation, reduce muscle tension, and evoke an emotional response. A fast, upbeat tune gets your pulse racing; a leisurely one can slow down the pace.

Hospitals are inevitably places that produce stress. Patients and family members are coping with emotions due to trauma, injury, and pain. Compounding the situation is the unfamiliar sounds of elevators, paging systems, beeps, buzzers, and other patients with their family and friends—a cacophony of noise that increases stress.

Of course, your friendly acoustical consultant can provide a sound isolation design to minimize the impact of outside noise, but the fundamental need of a body to relax, to regroup in order to better heal comes from a doctor's care – and music. Scientific studies have shown the value of music therapy on the body, mind, and spirit of children and adults. A [Time Magazine](#) article “Music and the Mind”, published in the November 14, 2005 issue, focused on the benefits of music therapy in patients with dementia and

Alzheimer's disease. According to the article, "more and more nursing homes and hospitals are finding that working with a music therapist can make a big difference". The American Cancer Society states that a number of clinical trials have shown the benefit of music therapy for short-term pain, including pain from cancer.

An acoustical environment that promotes healing may sound futuristic but some hospitals are already equipped with a television channel that does just that. The Continuous Ambient Relaxation Environment® (C.A.R.E.) broadcasts relaxing music and images designed to bring some peace to the often chaotic and stressful hospital world. The images of mountains, landscapes, close-ups of flowers and riverbeds and other natural images move slowly and do not include people. The instrumental music is original, so that it will not bring up any associations. Acoustically, the music also helps to mask the surrounding hospital noises.

A healing environment isn't just for hospitals. Try listening at home or the office and let the music work its magic.

Take a Walk on the Wild Side

North Carolina Wildlife Resources Commission, Wildlife Education Center

The North Carolina Wildlife Resources Commission moved into their new building this past September. The 5-story structure on the University of North Carolina campus in Raleigh brings together previously scattered Commission departments. Amid the usual offices and administrative areas is a highly technical Wildlife Education Center with the ability to broadcast classes statewide.

On two levels, the Wildlife Education Center includes: an auditorium, a classroom, laboratories, exhibits, a small studio, and a control room. The classes and workshops are open to everyone and are, in most cases, free of charge. Varying workshops will include: wildlife photography, canoeing, fishing, fly-tying, map-and-compass, outdoor cooking, and hunting.

Some of the conservation education programs feature the building itself. Selected as a pilot project in the State's High Performance Buildings Program, the Wildlife Commission's new building has received national recognition for incorporating sustainable building features that incorporate reusable and renewable resources, provide natural lighting, complement the natural characteristics of the site, cause minimal environmental impacts, and use energy efficiently.

Thorburn Associates provided the design for audiovisual technology needed for the Education Center and the Boardroom. The Boardroom is designed as a presentation facility; enabled with video, DVD playback, PowerPoint, and projection. The classroom enables a local instructor to engage a live audience while simultaneously reaching schools around the entire state of North Carolina. The instructor can control these long distance learning applications from the lectern or an operator can control the feeds from the adjacent studio.

The studio contains a lectern, plasma screen, camera, and blue screen (to allow superimposing the instructor's image over another image—similar to a television weatherperson's image superimposed over the satellite weather map). The combined/superimposed image can then be broadcast statewide.

The control room coordinates all aspects of the distance learning program as well as a remote feed fiber optic connectivity to sites on the surrounding grounds, such as the proposed pond and other natural sites. Educational shows with live animals and the ability to interact and ask questions of the instructor will dynamically teach children and spark their curiosity.

The auditorium serves as a larger presentation room as well as the ability to show a timed, high definition movie as introduction to the Center. The auditorium is also equipped with long-distance learning capabilities.

The new Wildlife Resources Commission building facilitates a more efficient means of doing business by creating one place to house various departments. The Education Center, when fully operational this summer, will educate across the state the wonders of North Carolina wildlife in a highly technological approach.

Ceiling-mounted Microphones

When you need to hear clear speech in a large room and table microphones are not an option, consider Tandberg Audio Science ceiling-mounted microphones.

Speech intelligibility is paramount for meeting areas, classrooms—any large space where the sound must be amplified in order to reach the audience. A great deal of extraneous sound can compete with the spoken word: ventilation noise, scraping chairs, footsteps, and rustling papers, for example. The Tandberg Audio Science is directional to better control what the sound system picks up.

Because rooms are often reconfigured for other functions, these ceiling microphones allow flexibility without the need to fuss with table mounts or moving any cabling.

One Tandberg ceiling microphone can replace up to six conventional microphones because it has a reach of 14 feet. With no hardware to knock over or distract, the technology doesn't interfere with the event. No wires to tangle and trip on means less damage and wear on the equipment.

While we don't recommend ceiling mounted microphones for every application, working with an Audiovisual consultant early in the design process can help insure the successful integration of a ceiling mounted product with the architectural style.

STAY SUBSCRIBED & TELL A COLLEAGUE

If you change your e-mail address, remember to re-subscribe – just follow this link:

<http://www.ta-inc.com/eNewsletter.htm>.

Feel free to pass this eNewsletter on to your friends and colleagues. If you are getting this second hand and want your own copy – just follow the link above.

Feel free to quote any part of this newsletter, just give us credit, and let us know how and where the quote will be used.

TO UNSUBSCRIBE

Follow this link <http://www.ta-inc.com/eNewsletter.htm> and click on the unsubscribe link; if you have any problems drop us a note at eNews@TA-Inc.com.

THANK YOU FOR READING OUR eNewsletter

We publish our eNewsletter about once every two months. We are always looking for new topics and ideas. Please drop us a note at eNews@TA-Inc.com with any comments or suggestions.

Copyright 2006

THORBURN ASSOCIATES INC.

ACOUSTIC AND TECHNOLOGY CONSULTANTS

Design and Engineering

Corporate Office: Castro Valley, California Tel: 510-886-7826

Regional Office: Burbank, California Tel: 818-569-0234

Regional Office: Morrisville, North Carolina Tel: 919-463-9995

TA@TA-Inc.com General Information Email Address

www.TA-Inc.com Web Site

eNews@TA-Inc.com Newsletter Issue

