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

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In this issue:

- Greetings and Upcoming Industry Events
 - Focus on Acoustics: Ceiling Treatments
 - Focus on Technology: TEA's SATE Conference
 - Project Profile: Quintiles Transnational Headquarters
 - Product Review: Pyrok
-

Greetings!

Thorburn Associates principal Steve Thorburn has been confirmed to serve a second term as president of the Themed Entertainment Association (TEA), by unanimous vote of the TEA International Board. He will formally receive the gavel in November at the TEA members meeting during the IAAPA Attractions Expo in Las Vegas.

TA will be present at the following trade events. Look us up and say "hello."

TEA's SATE Conference, Orlando, FL Sept. 24-25 (covered in this issue)

AIA South Atlantic Region Conference, Greenville, SC, Sept. 30-Oct. 4

AIA California Council - Monterey Design Conference, Pacific Grove, CA, Oct. 9-10

Educause Annual Conference, Denver, CO, Nov. 3-6

Architecture Exchange East, Richmond, VA Nov. 4-6

DBIA Design-Build Conference and Expo, Washington, DC Nov. 5-7

IAAPA Attractions Expo, Las Vegas, NV, Nov. 16-20

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

Focus on Acoustics - Ceiling Treatments

Note: TA provided this article for the August 2009 issue of [Buildings](#).

Good acoustical design is an integral part of making a space fulfill its purpose. Whether we're looking at retail space, a restaurant, open-plan offices, a videoconference room, a theater, a courtroom, an educational space, medical space, or another facility space, the



implementation of an acoustical ceiling is one of many practical ways to help achieve acoustical success. It can provide necessary absorption, reflection, or isolation and can be cost effective and environmentally friendly as well.

Aesthetics don't need to be sacrificed for the sake of good acoustics (nor vice versa). There are many product options on the market compatible with a wide variety of design approaches. As awareness of the importance of acoustics grows, the need for new acoustical solutions is required for new or unique applications. Manufacturers are continually working to provide products that are attractive to their client base. For instance, there are numerous fabric- or plaster-faced ceiling products that have the appearance of gypsum board. These products maintain a high acoustical performance while allowing more design freedom. They avoid the 2-foot by 2-foot grid look and replace it with the seamlessness of sheetrock. Other products – for instance, those made of perforated wood – can provide a warm feeling while being acoustically helpful (and a renewable resource).

In building design, environmental quality is being taken into consideration now more than ever, often translating into spaces with higher ceilings, more window surface area, and greater airflow. This provides better lighting and ventilation, and earns LEED points, but also has the potential to increase mechanical noise and decrease speech privacy. Products with mineral fiber backing can prove especially useful in reducing the build-up of noise and acoustically isolating spaces. They provide the absorptive characteristics of an acoustical ceiling tile (ACT) while providing better sound isolation than the typical ACT.

In many design cases where acoustical absorption is necessary, a good broadband absorber is the optimal solution. This is difficult to find in many absorptive products that are attached directly to a surface because of inadequate absorptive properties at low frequencies; however, the air cavity created when suspending a ceiling grid below a structure allows great absorption at low frequencies. When coupled with an absorptive product that performs well at mid and high frequencies, it's a great broadband absorber.

Keep in mind that acoustical ceiling products are a great boon, but must be part of an overall design solution for the best results. In other words, the room still needs to be optimally designed for good acoustics. Ceiling tiles are part of the strategy, but not a fix-all.

Focus on Technology - TEA's SATE Conference

Storytelling. Architecture. Technology. Experience. These are the four basic components of a successful visitor attraction and perhaps any facility that involves a human experience.

Since the beginning of time, storytelling has incorporated props and special effects (even if just a change in the volume of the storyteller's voice) to enhance the experience. An article in the September 2008 issue of Archi-Tech magazine states that "Architecture has always been the home of storytelling. From storing books to creating places for performance, entertainment, worship, sports, commerce, and education, spaces have facilitated the creation of history, fact and fiction. Today, rather than simply serving as a home for storytelling, architecture becomes a device for storytelling as narratives are woven into its foundations." The resulting process is "Experience Design" where the successful integration of the structure of the building, digital media, and even the evolving user experience is critical to the success of the experience.

The annual SATE (Storytelling-Architecture-Technology-Experience) conference is the perfect place to delve into the four basic components of a successful project, regardless of



the intended audience. SATE welcomes attendance from everyone that has a hand in the project development process – including owners and operators, developers, architects, designers, master planners, media producers, economic/feasibility analysts, fabricators, engineers and other suppliers or consultants. It is a tremendous opportunity for learning and networking.

Through two days of discussions, case studies, workshops, and site visits, SATE unlocks the creation of outstanding projects (theme parks, museums, retail, resorts, visitors' centers and like venues). This year's SATE speaker lineup features several brilliant creatives whose leadership engendered breakthrough properties in the theme park sector - Phil Hetteema (Universal's Islands of Adventure), David & Linda Smith (Discovery Cove), Joe Rohde (Disney's Animal Kingdom), Mike West (The Simpsons Ride at Universal Studios). There will also be speakers from the museum community, notably Steven Snyder, Ph.D., of the Franklin Institute. Making the most of the Orlando location, the event convenes at the Atlantic Dance Hall on Disney's Boardwalk, and includes behind the scenes visits to Epcot and SeaWorld.

Held September 24-25, 2009, in Orlando, Florida, SATE is hosted by TEA (Themed Entertainment Association), the international trade organization of which Steve Thorburn is president. SATE is one of many worthwhile programs and activities that TEA provides to the international attractions industry. In these lean economic times it may be just what you need to revitalize yourself and your practice.

SATE brochure: www.scribd.com/doc/18820649/SATE-Info-August-09
Register for the conference: www.teaconnect.org/boxoffice_2009_sate.php

Project Profile - Quintiles

Quintiles Transnational, which helps pharmaceutical, biotechnology and medical device companies develop and market innovative therapies, recently celebrated the grand opening of its new headquarters in Durham, North Carolina. At 252,000 square feet, the new, 10-story, glass-and-concrete structure, with room for some 1,100 employees, towers above its neighbors and glows at night from the light of more than 3,000 bulbs. Thorburn Associates was commissioned by architect Gensler Associates to provide acoustical and sound masking system design services for the project.

In the 1960s, early sound masking systems simulated the sound of moving air by electronically filtering random noise produced by gas-discharge vacuum tubes, distributing the amplified noise signal throughout the office via ceiling loudspeakers. Modern day sound masking has evolved to utilize digital signal processing (DSP), robust amplifier selection, correct loudspeaker placement and proper system calibration.

The Quintiles project called for sound masking on 9 of 10 office levels. Additional design criteria involved an emergency paging system that employed not only the sound masking loudspeakers but also added dedicated paging zones on three floors as well as paging horn type loudspeakers on all four parking decks. Sound pressure levels for masking systems typically do not exceed 50dB at the low end of the spectrum and slope off to about 20dB at the high end. Paging, on the other hand, was specified at between 55dB and 65dB SPL across the entire spectrum for human speech.

To insure that speech would be intelligible, especially through the sound masking loudspeakers, TA specified enough amplification horsepower to insure that the specified



Sound Pressure Levels (SPL) for speech could be achieved. Keep in mind that sound masking loudspeakers are not mounted flush in the ceiling but suspended upside down ABOVE the ceiling. This is optimum for producing the diffuse sound field that makes sound masking work so well but tends to reduce speech intelligibility.

Because this was one of the last contracts to be let in the project funds were limited. Part of our challenge was to value engineer the system to meet the owner's budget while keeping to the schedule. We took steps to restrict the project scope without compromising the critical systems, and issued the bid package as a performance specification only. After two rounds of bidding, we took the unusual step of awarding to a vendor that was also the manufacturer. TA insured quality control through final testing and calibration of the system following installation.

Product Review - Pyrok

What does the abbreviation "NRC" mean to you? To acousticians it usually means *Noise Reduction Coefficient*, a single number rating for the absorptive characteristics of a specific material AND mounting condition at four frequencies within the range of speech. It is not, as its name implies, the difference in sound levels between two conditions or between rooms. The NRC is important in designing spaces for improved acoustic environments that enable people to better concentrate on their tasks.

Ratings range from 0.00 (a very thick concrete wall) to 1.00 which is equal to an open window. The higher the rating, the more absorbent the material/ mounting condition. Some common building materials have the following NRC ratings:

- Gypsum wall board (0.05)
- 1 inch thick acoustical panels (0.75-0.80)
- "El cheapo" ceiling tile (0.50)
- The ceiling tile we typically call for (0.95)

Pyrok Acoustement is an acoustical plaster spray applied by licensed applicators. It is available in three different product types: two for interior applications that vary in durability and absorption (0.50 NRC at half-inch thick application to 0.65 NRC at one-inch thick application) and one for wet, humid or acidic conditions (0.60 NRC at one-inch thick application).

We think well of this lesser known "green" product because of its high acoustical performance and ability to adhere to a variety of substrates including drywall, concrete, cement, and metal. It also adds a decorative appearance with a spray texture or a semi-smooth, troweled finish. Available in 12 custom color tints, it can also be painted with spray-applied, water-based paint. We used this product in the lobby of Thorburn Associates' new offices in Raleigh-Durham. If you're in the area, we invite you to stop by for a look and listen. More info: www.pyrokinc.com.

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THORBURN ASSOCIATES INC.
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www.ta-inc.com

| | | |
|-------------------|-----------------------------|--------------|
| Corporate Office: | Castro Valley, California | 510-886-7826 |
| Regional Office: | Burbank, California | 818-569-0234 |
| Regional Office: | Morrisville, North Carolina | 919-463-9995 |

| | |
|--|-----------------------------------|
| TA@TA-Inc.com | General Information Email Address |
| www.TA-Inc.com | Web Site |
| eNews@TA-Inc.com | Newsletter |

