
THORBURN ASSOCIATES INC.

Acoustical, Technology and Lighting Design

eNewsletter

August 2011

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Welcome to the August 2011 eNewsletter!

In the next few months, we will be attending several industry events. Please look us up and stop by to say hello.

- **AIA Tennessee Conference** – Memphis, TN – August 3-5
- **AIA North Carolina Conference** – Raleigh, NC – September 8-10
- **Lodging Conference** – Phoenix, AZ – September 21-24
- **SATE Conference**– Orlando, FL – September 22-23

As always, it is our goal to make sure that Thorburn Associates is your single point of contact for all your Acoustic, Technology and Lighting Design needs. If you have an idea for our e-newsletter, questions or suggestions, please drop us a note at enews "at" ta-inc.com

Focus on Acoustics

Spray Foam Insulation

Spray foam insulation, because of its high recycled content and superior insulating qualities over loose fitting batt insulation, is being used with increasing frequency. It is even more common when a project is seeking to meet objectives outlined by sustainable building programs, such as LEED.

SAN FRANCISCO

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THORBURN ASSOCIATES
ACOUSTICAL, TECHNOLOGY, AND LIGHTING DESIGN

1.800.383.8490
JUSTASK@TA-INC.COM

Spray foam insulation comes in two different flavors: Open cell, and closed cell. These two different types of spray foam insulation are composed of different materials which react and expand differently in air, resulting in the different cell structure. In addition to being a better insulator, both types seal penetrations air-tight. This is helpful acoustically as it keeps unwanted sound from being transmitted through the wall system. However, these two types of insulation have many differences as well. Open cell foam is more expansive and can fill a ten-inch cavity in one application; closed cell foam is less expansive and is limited to two to three inches in thickness per spray treatment requiring multiple applications to fill larger cavities. The difference in expansion results in closed cell insulation being denser (2 pounds per cubic foot) than open cell (0.5 PCF). The higher density results in a higher R-value per inch of thickness.

When cured, closed cell insulation becomes rigid and does not allow sound to interact with the cell void in the [closed cell] insulation, and in the process absorb sound energy. Open cell insulation on the other hand, when cured remains flexible. The open-cell molecular structure allows sound energy to interact with the cell structure of the insulation and by physics of friction lose its energy to heat. This loss of sound energy results in an increase in sound transmission loss of the wall system when compared to an equivalent wall system that is either un-insulated or insulated with closed cell spray foam insulation.

Ultimately, the cost of spray foam insulation is higher than more conventional forms of insulation. However, it has many benefits and, when the correct kind is specified, could help your next project be a success.

Focus on Technology

Deeper Into the Cloud We Go: The Integration of AV into IT

For most of the audiovisual (AV) systems designed in the 80s and 90s, there was a clear point of demarcation between where information technology (IT) networks ended and AV systems began. Early AV systems only used analog phone lines for audio conferencing. The mid-80s brought video conferencing and a requirement for digital phone lines such as ISDN and its cousin Switch 56. Most of this bandwidth was leased or had hourly usage fees. This resulted in the operating costs being very high for companies that used the technology.

With the advent of internet protocol (IP), audio and video information could be bundled and streamed on the same local and wide area networks (LANs and WANs) as other data within an enterprise at little or no additional cost. At first, IT managers were reluctant to allow AV traffic on their networks. It took some time for the IT world to understand that allowing AV information on their networks was not a choice but a business necessity.

It did not take long for AV manufacturers to capitalize on the fact that networks could be utilized for more than just audio and video streaming. The availability of AV equipment with an Ethernet port to allow device control, management, or movement of content is increasing with each new product release. Major control system manufacturers continue to shift away from proprietary control networks to open architecture protocols.

The AV industry has been forever changed by the convergence of AV and network controls. However, content delivery over networks is still the "wild, wild west" so stayed tuned for further updates as the technology continues to evolve!

Focus on Lighting

LED Technology: Ready for Primetime?

For some time, consumers have been excited about the energy savings and efficient production of light from LED (Light Emitting Diode) technology compared to traditional light sources (incandescent and fluorescent). Most lighting design professionals, however, still approach the general use of LED technology with a bit of trepidation since many LED products have come to market prematurely with various issues. The advantages and disadvantages of light sources are:

Incandescent

A 19th century technology where a filament is heated to the point where it glow.

Pluses: Produces a warm light most people find inviting; very inexpensive to produce.

Minuses: Short life; low quality of light relative to the amount of energy used.

Fluorescent

An early 20th century technology where electrodes excite a gas inside a tube causing a glow on phosphor coatings.

Pluses: Relatively efficient light production; color quality has improved over the years.

Minuses: Tubes are not conducive to focusing (versus incandescent spotlights); concerns about toxic contents; has probably reached the limits of improvement.

LED

A late 20th century technology with more of a relationship to the components of computers than more familiar lighting sources.

Pluses: Long life; efficient production of light from energy used.

Minuses: Heat dissipation; component integration and reliability; consistency of color rendition; lack of optical assemblies to create usable real world fixtures; high price.

The good news is that LED technology is finally beginning to overcome its drawbacks. At Lightfair International, the largest United States architectural lighting conference, LED technology has been the star of the show for the last few years. Advances in LED



technology have, for the first time, made LEDs a viable option for architecture lighting of spaces in certain applications:

- Manufacturers are overcoming color temperature and color rendering issues of LEDs in a number of ways including: color mixing where red, green, blue, amber, and white LEDs are combined to create the desired color temperature; and improvements in remote phosphor technology where color is added to the light produced by the LEDs with a colored phosphor to help correct color shortcomings, essentially using some of the techniques of both incandescent and fluorescent lamps.
- Pricing for LED products is still high, so users should carefully consider the complete Life Cycle costs versus other technologies.
- An increasing variety of fixtures are now available to meet aesthetic requirements.

The current challenge is that LED technology is arbitrarily being used as the source for just about every lighting condition imaginable, even though it is not necessarily the best solution after all parameters and needs are considered. The best light source is one where the entire light fixture assembly maximizes the qualities of the light source in order to meet the project needs. LED technology may or may not be the answer, but is becoming a viable option.

Focus on Excellence

Steve Thorburn Named Educator of the Year

As an industry expert and thought leader in the AV industry, Steve Thorburn was named 2011 Educator of the Year by InfoComm International. The award was in recognition of his 35,000 plus student hours in teaching acoustics and audiovisual technology. Since 1995, Steve has:

- Taught at least two or more courses annually at the InfoComm conference
- Developed and taught multi-day sessions under the original InfoComm Institute for Professional Development (IPD) program
- Co-taught sessions with fellow faculty members of the InfoComm Academy.

Steve also participated in the development of the CTS-Installation and CTS-Design curriculum courses and designations which ultimately became industry standards. He has achieved "Senior InfoComm International Academy Faculty" status and was on InfoComm's Install School Committee and Design School Committee.

Active in the audiovisual industry for over 30 years, Steve has volunteered his knowledge, energy, time, and passion to the AV industry and InfoComm. The award was presented to Steve's wife, Lisa, at a luncheon held in June at the annual trade show, in Orlando, FL, because Steve was unavailable since he was doing what he was recognized for – teaching. Please join everyone at TA in congratulating Steve on this honor!

The InfoComm International Educator of the Year award was created to recognize an individual who has made important contributions to the professional development, education, and training of the AV industry on AV topics and values. For more information on InfoComm International visit www.infocomm.org

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THORBURN ASSOCIATES INC.

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www.TA-Inc.com

Corporate Office:	San Francisco	510.886.7826
Regional Office:	Los Angeles	818.569.0234
Regional Office:	Raleigh-Durham	919.463.9995
Regional Office:	Orlando	919.463.9995

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

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