Sounds

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A Newsletter from ***Stewart Acoustical Consultants***

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Celebrating 30 Years of Service

Dr. Richard Honeycutt to Assist us on Worship Spaces and Auditoriums

We are pleased to announce an affiliation with Dr. Richard Honeycutt of EDC Sound Services in Lexington, NC. Richard will be assisting us primarily on projects involving worship spaces and auditoriums. We expect him to help manage some worship space projects and provide computer modeling. He brings to us a long and rich variety of experience in acoustics, audio systems, music, and electronics. He has published many magazine articles primarily on audio topics, and two books on electromechanical devices and electronics, and taught electronics at Davidson County Community College for 19 years. Richard has been a member of the NC Chapter of the Acoustical Society of America since 1969 and is a member of AES and ASA.

Department of Defense Implements Classroom Acoustics Standard

In 2002 the American National Standards Institute developed a standard for classroom acoustics to assure a good learning environment where students can actually hear the teacher well, ANSI S12.60. Several school systems and a few states have adopted this standard in part or in full. The US Department of Defense has now adopted it for all new schools and training facilities under its control. This includes both schools for the children of military families and training facilities for military personnel. A copy of ANSI S12.60 can be downloaded free at this link. http://asastore.aip.org/ Strong progress also has been made by an ANSI working group including representatives of the relocatable classroom industry to develop a special supplement to address the unique problems of relocatable classrooms. Dr. Stewart has been a major contributor to this effort on relocatable classrooms.

Building Code Requirements for Isolation in Multifamily Residential

The requirements of the building code for residential sound isolation are poorly written and not well understood by many. An effort is beginning within the International Codes Council to develop a supplemental document to explain the code and eventually modify it. Members of the acoustical community will be involved in this effort that was initiated by Dr. Brandon Tinianov of Serious Materials.

Virginia Court Decision Strikes Down Noise Ordinances

On April 17, 2009 the Virginia Supreme Court in a case involving a night club held that noise ordinances in the state based on subjective criteria or “reasonable person” standards were vague and unconstitutional. The court essentially held that any noise ordinance in the state must have quantitative and measurable standards. This leaves many communities without enforceable ordinances until new ones can be adopted. The ruling is here
http://www.courts.state.va.us/opinions/opnscvwp/1080998.pdf

Virginia Beach Adopts New Ordinance with Strange Limits

In response to the decision by the Virginia Supreme Court, the city of Virginia Beach has enacted a new noise ordinance http://www.vbgov.com/file_source/dept/planning/3082ord.pdf. It is very strange. The limits for sound in residential areas are 65 dBA daytime and 55 dBA nighttime which would not be unusual. What is unusual is that these are specified to be measured inside the home. There is no averaging or time period indicated. Thus, the limits may have been meant to apply just to an intermittent occasional short duration sound, but with no lower limit for steady sounds someone could be producing about 85 dBA all day outside a home with levels approach 65 dBA inside. This is truly an unacceptable condition. This makes the ordinance dangerous as the producer of such noise could cite the ordinance as condoning it. Unfortunately such unusual ordinances often occur when local governments rush into them without getting competent assistance.

New Ceiling Options

Armstrong is introducing two interesting new products and we have discovered products from Certainteed Ecophon that meet special needs.

Natural Fiber Acoustical Ceiling – Armstrong has introduced a new ceiling panel that is a breakthrough in many ways. http://www.armstrong.com/common/c2002/content/files/54506.pdf The Tierra panel is only 5/8 inch thick but approaches the acoustical performance of a 1 inch fiberglass panel. Further it is a highly GREEN product, made from Jute, a natural fiber that grows very quickly. In fact it is claimed to be the greenest possible ceiling. The fiber for the panel can be grown in less than 90 days. It is very suitable for demanding applications such as open-plan offices or classrooms.

Tin Ceiling – Designers often want to have a historical tin ceiling look but the old tin ceilings reflected sound and created poor acoustical environments. Armstrong has introduced a microperforated tin ceiling panel http://www.armstrong.com/commceilingsna/article52742.html that is highly absorptive when used with fiberglass or other absorber above it. It is available in a wide variety of colors and patterns.

Glued-up Fiberglass Ceilings – Historically it has not been possible to glue highly absorptive fiberglass ceiling panels directly to a solid ceiling. Certainteed Ecophon has created fiberglass ceiling panels that can be glued up in either their Focus line or thicker more absorptive Master line. Similar panels are also available for a variety of concealed grid options.
http://www.ecophon-international.com/templates/WebProductSystemPage____8181.aspx
http://www.ecophon-international.com/templates/WebProductSystemPage____8202.aspx

United States House of Representatives Passes 21st Century Green High-Performing Public School Facilities Act on May 14th.

This was part of the stimulus package (Reinvestment Act) and had been largely removed. Prior to that, it had passed the House in 2008 in similar form. This year, there is a greater chance of success in the Senate where it is awaiting consideration by the Committee on Health, Education, Labor, and Pensions. The House version contains $6.4 billion for the first year (similar $ in the following 5 years) for giving states funding for grants and low-interest loans for schools – uses include to build, modernize and repair facilities to make them healthier, safer and more energy-efficient. This includes LEED for schools and thus acoustics. Specifically from the bill's summary "Directs local education agencies grantees to use a percentage of their grant, rising in 10% increments from 50% in FY2010 to 100% in FY2015, for public school modernization, renovation, repairs, or construction that meet Leadership in Energy and Environmental Design (LEED) green building rating standards, Energy Star standards, Collaborative for High Performance Schools (CHPS) criteria, Green Building Initiative environmental design and rating standards (Green Globes), or equivalent standards adopted by the entities that have jurisdiction over such local education agencies." In other words, at least 50% and eventually 100% must be used on green school projects. A separate guidance document approved by the House (though not a part of the bill) encourages school systems to improve classroom acoustics specifically.

LEED for Schools 2009 reference guide is available

In LEED for Schools 2009, you must meet the prerequisite for HVAC noise (45 dBA) for all core learning spaces, and must meet room acoustics requirements - for rooms under 20,000 cubic feet via calculation meeting classroom acoustics standard requirements or NRC 70 ceiling tile, for larger rooms RT must not exceed 1.5 seconds. No STC requirements for the prerequisite. For a point, you can get enhanced acoustics, but you must lower the HVAC noise to 40 dBA and meet the STC requirements in the classroom acoustics standard. You can further get an innovative design credit for taking additional measures including lowering the background noise to the classroom acoustics standard requirement of 35 dBA for all sources. The sticking point for the enhanced acoustics continues to be the STC 50 requirement and the need for extending all walls to the deck. Stud wall systems must have resilient channel or 24-26 gauge metal studs for to have a shot at STC 50. Masonry wall systems must be sand filled, or heavy masonry, and typically 8" block to achieve STC 50. Typical 6" and 8" lightweight blocks do not do it. Most owners and architects are resisting furred gypsum as a solution.

Green Acoustics Blog at http://green.sacnc.com

Please visit and sign up for our blog for more insights into LEED for schools and other green acoustics information. We provide lots of FREE useful information to better understand the acoustical requirements for green buildings, and green friendly acoustical products and materials.

Local Regulation of Airport Ground Noise

It is well known that local governments cannot regulate the noise of aircraft in flight or in the process of landing or taking off or taxiing to or from a gate. Questions have often come up about other noises originating at an airport due to ground operations not directly related to a flight. In a situation involving a ground run-up test facility to test engines at the Portland, OR airport, the FAA recognized that the local authorities had the authority to regulate the noise and require noise controls.

AIA Credit Course in Architectural Acoustics Available

Both Noral Stewart and Joe Bridger have been certified by the Acoustical Society of America as presenters of a one-hour course in acoustics that qualifies for health, safety and welfare credit through the AIA. The basic one hour course must follow slides provided by ASA but can be supplemented with the experience of the presenters and special topics of interest to a particular audience. Stewart Acoustical Consultants is pleased to provide this class on a limited basis free of charge to small groups in our office, or to larger architectural firms at their offices in the Triangle Area. We are also open to presenting the class to multi-firm groups of students at locations outside the Triangle area such as at AIA Section meetings. Please contact Noral Stewart or Joe Bridger for information.

New Product to Isolate Wall Gypsum from Resilient Ceiling Gypsum

When installing ceilings resiliently it is best acoustically to extend the gypsum on the walls above the ceiling and put the ceiling within the walls, not touching the walls. In practice and in some cases to meet fire resistance details, the gypsum ceiling is installed first and the wall gypsum installed up to it. This makes it more difficult to prevent the contact between the wall and ceiling gypsum. Keene Building Products has developed a way to assure the separation. They use the same method commonly used to isolate the perimeter of a floated floor. The product called Space Assurance http://keenebuilding.com/productsassurance3.php is attached to the top of the wall framing before any gypsum is installed. It prevents the ceiling gypsum from contacting the wall framing. Then the Space Assurance is folded up against the ceiling as the wall gypsum is installed so it is between the wall gypsum and ceiling gypsum. The excess material is then trimmed away. A crown molding can then be used to cover the crack. To avoid leaks through a wall to the adjacent room, the top of the gypsum must be sealed to the framing.

In Memory of Dr. Stan Dunn, Acoustical Consultant of Denver, NC

We sadly report the passing of Stan Dunn. Stan was a graduate of NC State who became a professor in the Ocean Engineering Department at Florida Atlantic University and established an acoustical consulting practice primarily serving clients in Florida. Since retiring from FAU, he had moved back to North Carolina and continued his consulting, though most of his work remained in Florida. One project in recent years was assisting Charlotte based National Gypsum in the development of their Soundbreak gypsum board product.

In Memory of Mr. John Handley, former Senior Vice President IAC

For 39 years John Handley worked to develop new products for noise control and markets around the world in the company that pioneered many of the metal products for noise control that we routinely use today. When the company was sold about 10 years ago many of us were disappointed that the new owners chose not to keep John though he wanted to keep working into his seventies. John was also a leader in his community and church and a nationally recognized gardener and expert on dahlias. He was truly a gentleman and friend to many in this business. John passed away in April at his home in New Jersey at age 82.