

STUDENT DESIGN COMPETITION 2006

TCAA
TECHNICAL COMMITTEE ON
ARCHITECTURAL ACOUSTICS



ACOUSTICAL SOCIETY
OF AMERICA

NCAC
NATIONAL COUNCIL OF
ACOUSTICAL CONSULTANTS

ANNOUNCEMENT

The Acoustical Society of America's Technical Committee on Architectural Acoustics and the National Council of Acoustical Consultants is sponsoring a student design competition to be judged and displayed at the 151st meeting of Acoustical Society of America in Providence, Rhode Island, June 5 - June 9, 2006.

The Student Design Competition is open to students in the disciplines of Architecture, Engineering, Physics and other curriculums that involve building design and/or acoustics. This competition is intended to encourage students to express their knowledge of architectural acoustics and noise control in the design of a facility in which acoustical considerations are of significant importance.

PARTICIPATION AND REGISTRATION

Entries may be submitted by individual students or teams of a maximum of three students. Undergraduate and graduate students are encouraged to participate.

Students intending to enter the competition must register by sending an email to Norm Philipp (normp@yantis.com) on or before **April 3rd, 2006**. In the email, please indicate your name(s), school, and faculty advisor. Provide the email addresses of the faculty advisor and one team member to serve as contact for the entire team, but also please provide e-mail addresses for all team members.

PRESENTATION FORMAT AND SUBMISSION PROCEDURE

Entries are to be poster presentations. Submissions shall be presented on up to three (3) separate display boards with maximum dimensions of 22x28 in. (56x71 cm) per board. (Note that this requirement has changed since previous competitions. The overall dimensional area of presentation has not been significantly altered. The modified size is intended to ease handling and reduce shipping costs.)

Design and layout of the submissions should account for the presentation style. The font size, amount of narrative text, and number of graphs should be appropriate for poster viewing. A thoughtful viewing and analysis of the presentation should be possible in 5 to 8 minutes.

Separate sheets with design details, calculations or other documentation may not be attached to the boards. The judges will not review such information.

Presentation boards should be suitable for wall or easel display. Means of attachment to the wall or easel will be provided by the competition (submissions need not include Velcro or pins). Please denote, either on the rear of the boards or on an included sheet, the orientation and arrangement for the presentation boards.

In an opaque envelope affixed to the back of EACH display board, provide the name, address, phone, email addresses, school affiliation and advisor/sponsor of all participating team members.

Presentations should be wrapped in opaque paper for submission to the competition. Wrapping will not be removed until the submissions are displayed for the competition. Please package display boards securely to prevent damage during shipping.

Entries must be received not later than May 26, 2006 at the following address:

Ben Markham
ACENTECH
33 Moulton Street
Cambridge, MA 02138

However, students entering the competition and also attending the Providence meeting may bring their posters to the meeting. Please email either Norm Philipp (normp@yantis.com) or Bob Coffeen (coffeen@ku.edu) no later than May 26th, 2006 if you are planning on bringing your posters with you to the Providence meeting. Posters presented in this manner must be available at the host hotel in Providence by 8:00 am on Tuesday, June 6.

TECHNICAL REQUIREMENTS

Design competition entries should emphasize the general building acoustical design (room acoustics, noise control, and acoustic isolation). Presentations should include architectural drawings (plans and sections) describing interior surface shapes and finish materials particularly for the Community Hall, Court Room, and Meeting Rooms; acoustical calculations; acoustical criteria; and details of construction relating to room acoustics and architectural noise control as necessary to describe and support the design. It is not necessary to prepare architectural exterior building elevations, but exterior designs may be included if desired. If acoustic analysis computer programs are used in the design, graphics and data from the programs may be displayed.

While the design of the building mechanical and electrical systems is very important to the acoustical success of a project, it is not necessary to indicate in detail the mechanical and electrical system noise control procedures that are required. However, the presenter(s) should indicate ambient noise criteria, along with general noise and vibration control procedures relating to air handling, electrical transformers, etc., and including procedures for controlling noise transmitted from the mechanical and electrical rooms to surrounding spaces.

Specific design detailing of sound reinforcement and other audio systems is not required, nor is the design of visual projection and similar systems.

JUDGING AND AWARDS

The submitted designs will be judged by a panel of five or six practicing design professionals. The panel will include acoustics consultants, and the panel will probably include an architect and/or theatre consultant.

Entries will be evaluated on technical merit, design vision, adherence to the design and program requirements, and effectiveness of presentation.

An award of \$1,250 will be made to the individual or team whose entry is chosen as "First Honors". "Commendation" awards of \$700 will be made for four other outstanding entries. Awards are provided by the Newman Student Award Fund with award funding by the Wenger Foundation in honor of Harry Wenger, founder of the Wenger Corporation, Owatonna MN.

QUESTIONS AND CLARIFICATIONS

Questions regarding the competition requirements or clarifications about the design scenario may be directed to Norman Philipp via email (normp@yantis.com) and/or Bob Coffeen via email (coffeen@ku.edu). Questions and answers deemed to affect all entries will be copied to all participants and advisors who have registered.

DESIGN SCENARIO

The City Council in a suburban community has decided to construct a new municipal building to replace its current facilities.

Program Description

The two of the major spaces in the new municipal building shall be a Court Room and a Community Hall. Each of these spaces has necessary ancillary spaces associated with them and the majority of these have been listed in the Scope of Work. The Court Room will be used primarily for criminal cases and other cases requiring a jury. The Community Hall should be designed to serve a variety of uses, ranging from City Council meetings to small ensemble musical and dramatic performances. Special emphasis should be placed on the speech and music performance aspects of the interior acoustics for the Community Hall. The Community Hall, Court Room, and their ancillary spaces are to be located together in one portion of an overall municipal facility consisting of one or two floors. The City Architect has expressed a wish to include natural lighting in the Community Hall and Court Room; therefore these two spaces should be located along exterior walls. The municipal building also contains the city offices along with several community conference rooms. Emphasis should be placed on the interior acoustics of the spaces, noise control between spaces, and noise control to the exterior of the building. Given the increasing number of law suits and overturned court cases resulting from speech privacy issues, this should be a key component identified in your recommendations.

The project is centrally located in the downtown commercial district with reasonably heavy traveled streets bordering the site. In addition to traffic noise, current noise sources in the immediate vicinity of the new municipal building include a police station and firehouse. Additionally, a new light rail system is proposed with tracks and a station located across the street from the front of the new municipal building.

Building Program (as it applies to this design problem)

Community Hall...Multipurpose hall seating 200 to 250 persons in fixed theatre type seating and with presentation platform at the front of the hall. As previously described, this hall will be used for City Council meetings, multimedia presentations, musical presentations by soloists or small musical groups, small drama presentations, and lectures.

Courtroom...litigation area, judge's bench, jury box, witness stand, and space for clerk, attorneys, and approximately 50 spectators.

Judge's Chamber...approximately 200 sq ft

Jury Room...approximately 500 sq ft

Conference/Meeting Rooms...also to be used for Attorney/Client discussion rooms, 4 required each approximately 150 sq ft

Bailiff's Office...approximately 120 sq ft

Holding Cells...4 required each approximately 100 sq ft, access to holding cells and bailiff's office from rear of building

Central Lobby...with adjacent coat room and restrooms, serves both Courtroom and Community Hall, approximately 2000 sq ft

Mechanical Equipment Room...to primarily house air handlers (it is assumed that chilled water and steam are available from a nearby City building), approximately 600 sq ft

Electrical Equipment Room...approximately 350 sq ft

Other City offices and facilities will be in the new municipal building but it is not necessary to include them in this design problem.

SUBMISSION REQUIREMENTS

Prepare a schematic design for the project. Identify noise and vibration sources and demonstrate noise control solutions (this includes speech privacy issues). Convey your design in plan, section, detail, or isometric/perspective drawings. Effectively demonstrate three-dimensional relationships and address noise control for both horizontal and vertical adjacencies. Indicate the locations for the major building components as listed above. Major circulation paths should be developed to determine functional adjacencies. Plan drawings should be provided to convey important building layout concepts and acoustic considerations.

As previously mentioned, specific layouts of building systems (mechanical, electrical, etc.) are not required. However, general noise control methods should be identified. Establish background noise criteria for each space. Address the method of supplying and returning air to the Courtroom, Community Hall, and Conference/Meeting Rooms.

STUDENT DESIGN COMPETITION 2006 TIMELINE

| | |
|----------------|--|
| December 2005 | Release of design competition information |
| April 03, 2006 | Registration deadline |
| May 26, 2006 | Deadline for receipt of shipped submissions |
| June 5–9, 2006 | 151 st Meeting of the Acoustical Society of America, Providence, Rhode Island |
| June 5-9, 2006 | Student Design Competition (exact date and time to be announced, but competition will probably take place on June 6 or 7) |

STUDENT DESIGN COMPETITION CHAIRS**Bob Coffeen**

School of Architecture
and Urban Design
University of Kansas
Phone: 785-864-4376
Fax: 913-649-7063
Email: coffeen@ku.edu

Norm Philipp

Yantis Acoustical Design
Seattle WA
Phone: 206.583.0465
Fax: 206.583.0615
Email: normp@yantist.com

Byron Harrison

TALASKE
Oak Park IL
Phone: 708.524.2800
Fax: 708.524.2818
Email: byron@talaske.com