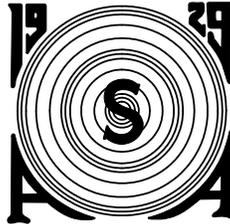


# STUDENT DESIGN COMPETITION 2005

**TCAA**  
TECHNICAL COMMITTEE ON  
ARCHITECTURAL ACOUSTICS



ACOUSTICAL SOCIETY  
OF AMERICA

**NCAC**  
NATIONAL COUNCIL OF  
ACOUSTICAL CONSULTANTS

## ANNOUNCEMENT AND DESIGN SCENARIO

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 149<sup>th</sup> meeting of Acoustical Society of America in Vancouver, British Columbia, Canada, 16 May through 20 May 2005.

The Student Design Competition is intended to encourage students in the disciplines of Architecture, Engineering, Physics and other curriculums that involve building design and/or acoustics 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 by 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 01 April 2005. In the email, please indicate your name(s), school, and faculty advisor. Provide the email addresses of the faculty advisor and of one team member to serve as contact for the entire team.

### 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 is changed from 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 design details, calculations or other documentation may not be attached to the boards; such information will not be reviewed by the judges.

Presentation boards should be suitable for wall or easel display. Means of attachment to the wall or easel will be provided by the competition, i.e., submissions need not supply Velcro or pins.

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. Envelopes will be opened only after judging is complete.

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.

For entry in the competition, entries must be received not later than 09 May 2005 at the following address:

**Updated Address!**

ASA Student Design Competition 2005  
c/o Yantis Acoustical Design  
720 Olive Way, Suite 1400  
Seattle, WA 98101  
Attn: Norm Philipp

#### **TECHNICAL REQUIREMENTS**

Design competition entries should emphasize the general building acoustics design (room acoustics, noise control, and acoustic isolation). Presentations may display drawings, acoustical calculations, acoustical criteria, and details of construction relating to acoustics and noise control as necessary to describe and support the design. If 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 for this particular design problem to indicate in detail the mechanical and electrical system noise control procedures that are required. However, the presenter(s) may wish to indicate noise criteria, and general noise and vibration control procedures relating to air handling, electrical transformers, theatrical lighting dimmers, etc.

Specific design detailing of theater equipment (rigging, lifts, etc.) or audio systems equipment is not required. However, integration of such equipment into specific acoustic design details may be necessary.

## JUDGING AND AWARDS

The submitted designs will be judged by a panel of practicing design professionals. The panel will include acoustics consultants and may include architects and theater consultants.

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

An award of \$1,250 will be made to the individual or team with the entry chosen as "First Honors". Commendation awards of \$700 will be made to four individuals or teams of other outstanding entries.

## QUESTIONS AND CLARIFICATIONS

Questions regarding the competition requirements or clarifications about the design scenario may be directed to Byron Harrison via email (byron@talaske.com). Questions and answers deemed to potentially affect all entries will be copied to all participants and advisors who have registered as of the time that the question has been answered. Questions relating to procedural matters (shipping of posters, etc.) may be directed to any of the design competition chairs as noted on page 6.

## DESIGN SCENARIO

A burgeoning theater company in a large city has brokered a deal to move its permanent home to a new theater in a downtown development project. The mixed-use development also includes office space, parking, and retail. Acoustic considerations for the project include proper site planning for noise and vibration control, speech intelligibility in the theater, and noise control and acoustic isolation detailing in the theater building.

The acoustic design is proceeding under authorizations for two different parties, the developer and the theater company. This program and scope of work for these two separate, but inter-related projects, is presented below.

Successful designs will present integrated solutions for the project, while addressing the program requirements for each client.

## MIXED-USE DEVELOPMENT SITE PLANNING

### PROGRAM DESCRIPTION

The project site is located along 28<sup>th</sup> Street between Waterfall Avenue and Knudsen Boulevard. The Watson Branch of the metropolitan subway system runs beneath the extreme Southwest corner of the site. Reference the attached site plan. An electronic drawing file (AutoCAD format) of the site plan may be downloaded from the Newman Fund website (<http://www.newmanfund.org>) or requested via email from Byron Harrison (byron@talaske.com).

All of the existing buildings on the North side of 28<sup>th</sup> Street between Waterfall Avenue and Knudsen Boulevard will be razed for the development. The following components are slated for the approx. 68,600 sq.ft. site:

- 30 story office tower
- Low-rise parking structure
- Theater building (see theater build-out program below)
- Street-level retail

The developer has placed the following restrictions on the design:

- The office tower must have a minimum footprint of 30,000 sq.ft.
- The parking structure be outside of the footprint of the office tower for security reasons, but must have direct access to the office tower.
- The parking structure must have a minimum of 90,000 sq.ft. of parking decks, inclusive of circulation. Each parking level must be greater than 10,000 sq.ft.
- The parking structure entrance must be on 28<sup>th</sup> Street, but not within 120ft of intersections with Waterfall Avenue and Knudsen Boulevard
- Retail must occupy 10,000 sq.ft. of the development at the street level. The entire street-level frontage of Knudsen Boulevard must be retail.
- A loading dock for the theater must be accessed from the alley. The backstage area must immediately adjoin.
- A mechanical equipment penthouse should be located centrally to serve as a cooling tower location for the entire development. Other local mechanical rooms for the individual buildings will be required, as well.

#### **SUBMISSION REQUIREMENTS**

Prepare a conceptual design of the project site. Identify noise and vibration sources and demonstrate noise control solutions. Convey your design in plan, section, or isometric/perspective drawings. Effectively demonstrate three-dimensional relationships and address noise control for both horizontal and vertical adjacencies. Detailed floor plans are not required and, unless specifically warranted by the program, discouraged. Block diagrams depicting different building programs are appropriate means of presentation. Show locations for mechanical equipment penthouse and theater mechanical rooms. Identify structural breaks and isolated construction systems, as necessary.

#### **THEATER COMPANY TENANT BUILD-OUT**

##### **PROGRAM DESCRIPTION**

The theater company currently performs in a found space located in a warehouse building. The current space has influenced the format of performances and the signature style of the company. However, the constraints of the space (including ceiling height, rigging capability, and flyspace) have caused limitations of production capability. With assistance from the city and a considerable capital campaign, the company will move to the multi-use development on 28<sup>th</sup> Street.

The following programmed spaces will be included.

Mainstage theater: A 600-seat flexible theater. Performance configurations will include thrust and arena (in-the-round) formats. In arena configuration, the performance area should be no less than 875 sq.ft. The performance area should have 24 ft clear above the stage to the catwalks. The Mainstage theater should be designed for non-reinforced speech. The theater should also be suitable for performance audio and effects.

Rehearsal hall/Experimental Theater: The rehearsal hall will be used for rehearsal shows for the Mainstage, but will also be used for performances or workshops of new productions. The room should be no less than 2600 sq.ft. Moveable platforms and loose seating for 200 patrons will be used for performances.

Audio Production Suite: The theater has need for in-house audio production and voice-over recording. An audio suite of no less than 450 sq.ft. should include a near-field listening and mix station, a voice-over booth, and office space for two staff audio technicians.

Lobby and other front-of-house spaces: Lobby should serve both the Mainstage and the Rehearsal hall/Experimental Theater. A box office and small gift shop should be at the street level. Coat Room and Restroom locations should be indicated.

Scene shop and production spaces: Scenic, costume, and property design shops and storage will occupy approximately 11,400 sq.ft.

Back-of-house and Administration: Dressing rooms and other support spaces for the theater will occupy approximately 8,400 sq.ft. Administrative offices will occupy approximately 9,600 sq.ft.

Mechanical and Electrical Equipment Rooms: Approximately 4,400 sq.ft. of Mechanical Electrical Equipment Rooms should be located within the Theater building.

#### **SUBMISSION REQUIREMENTS**

Using your conceptual design of the project site, further develop the theater building to a "schematic design" state. Indicate the locations for the major building components (mainstage, rehearsal hall, lobby, scene shop, audio studio, mechanical room, back-of-house/administrative areas). Major circulation paths should be developed to determine functional adjacencies; however specific layouts of front-of-house or back-of-house spaces are not required. Plan drawings should be provided, as necessary, to convey important building layout concepts and acoustic considerations.

Using the schematic design of the Theater building, further develop the design of the Mainstage, rehearsal hall, and audio studio. Plan and section drawings of these three spaces are required.

Design of the Mainstage theater should include immediately adjacent spaces, such as audience and performer entries, control rooms, and followspot locations. Presentations should indicate room volume, dimensions, methods for controlling reverberance, and methods for enhancing speech clarity for all anticipated actor orientations. Audio

system design is not required. Layouts for the two seating configuration should be shown.

The design of the Audio Production Suite should address the room shape and finishes of the audio studio and voice-over booth. Indicate the acoustic isolation methods used between the audio studio and voice-over booth and between the Suite and other adjacencies.

The Rehearsal Hall/Experimental Theater should be designed for concurrent use with the Mainstage. The known program for the Rehearsal Hall includes high-level production audio and dance rehearsal. Specific room acoustic finishes and isolation methods should be addressed.

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 Mainstage and Rehearsal Hall/Experimental Theater.

#### **STUDENT DESIGN COMPETITION 2005 TIMELINE**

November 2004	Release of <i>Announcement and Design Prompt</i>
01 April 2005	Registration Deadline
09 May 2005	Deadline for Receipt of Submissions
16 – 20 May 2005	149 <sup>th</sup> Meeting of the Acoustical Society of America, Vancouver, BC
<b>17 May 2005</b> <b>1:30 to 5:00pm</b>	<b>Student Design Competition, Session 2pAAb</b>

**New!**  
**Updated Session**  
**Date and Time!**

#### **STUDENT DESIGN COMPETITION CHAIRS**

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