



## ACOUSTICAL SOCIETY OF AMERICA STUDENT DESIGN COMPETITION 2018

PRESENTED BY: THE TECHNICAL COMMITTEE ON ARCHITECTURAL ACOUSTICS, THE ROBERT BRADFORD NEWMAN STUDENT AWARD FUND AND SPONSOR THE WENGER FOUNDATION, AND THE NATIONAL COUNCIL OF ACOUSTICAL CONSULTANTS

### ANNOUNCEMENT

The Technical Committee on Architectural Acoustics with support from the Robert Bradford Newman Student Award Fund (<http://www.newmanfund.org/>), The Wenger Foundation, and the National Council of Acoustical Consultants (<http://www.ncac.com/>) is sponsoring a student design competition to be displayed and judged at the 175<sup>th</sup> meeting of the Acoustical Society of America in Minneapolis, Minnesota, May 7-11, 2018.

### ENTRY REQUIREMENTS

Entries may be submitted by individual students or teams of a maximum of three students. Undergraduate and graduate students are encouraged to participate. Participants must be registered as a student during the spring semester of 2018. Teams comprised of students from different institutions are welcome. Teams comprised of students from different disciplines are encouraged. A faculty sponsor is required. Meeting attendance is not required to participate in the competition.

### ENTRY LIMITS

Entries must be limited by each institution to three. Entries submitted by teams with teammates from different colleges within the same university will count as entries from the same institution. Up to two additional entries per institution are allowed if its entrants from the institution team with entrants from a separate institution.

### REGISTRATION

**Teams must register on or before April 1, 2018, by e-mail to the competition co-chairs at [sdc@newmanfund.org](mailto:sdc@newmanfund.org).** In the e-mail, indicate (1) your name and school; (2) the name of your teammates (if any), their school(s) (if different than your school), and their e-mail addresses, (3) the name of your faculty advisor, his or her school, and his or her e-mail address; (4) if the project will be completed (a) for credit as part of a design studio, (b) for credit as part of a non-studio class, or (c) as an extra-curricular; and (5) indicate the student participant who will serve as primary contact for the team. The primary contact will serve as a vital link for receiving information and updates on the competition. This may include answers to frequently asked questions and changes to information presented in this bulletin.



## JUDGING AND AWARDS

The submitted designs will be judged by a panel of practicing design professionals and university faculty. The panel may include acoustical consultants, architects, theatrical consultants, and educators in associated fields.

Entries will be evaluated on technical merit, design vision, innovation, and effectiveness of presentation.

One \$1,250 Wenger Prize will be awarded to the first honors entry, as selected by the judges. Four \$700 commendation awards will be made to other top entries.

At the co-chairs' discretion, the commendation awards may be categorized based on outstanding aspects of the entered designs.

Awards are made possible through a grant from the Newman Fund sponsor the Wenger Foundation.

## PRESENTATION FORMAT AND SUBMISSION PROCEDURE

Entries shall be poster presentations. Entries shall be presented on up to three (3) separate display boards with maximum dimensions of 22 x 28 inches (56 x 71 cm) per board. It is advisable to mount posters to foam core board or other rigid backer. Additional documentation or three-dimensional features may not be attached to the boards; however, this year we will allow the inclusion of a digital code such as a QR code for the inclusion of supplementary material as an option. Keep in mind that the judges will not be obligated to review such information.

In addition to the poster submission, a digital copy of each entry shall be e-mailed to the competition co-chairs at [sdc@newmanfund.org](mailto:sdc@newmanfund.org). Digital file format must be .pdf or .jpeg. If file size is prohibitive, participants may arrange other methods of file transfer with the co-chairs. Digital copy must be received on or before **Monday, May 7, 2018**. Supplementary materials (i.e. linked to QR code) may be submitted as well but must be received by the same deadline. It is advised that to ensure future viewers of your poster access to the supplementary materials that you maintain the linked supplementary information independent of the SDC.

The competition language is English.

The font size, amount of narrative text, and number of graphs should be appropriate for poster viewing. A thoughtful viewing of the presentation should be possible in about 10 minutes. 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 the orientation and arrangement for the presentation boards either on the rear of the boards or on an included sheet.

For entry in the competition, the physical presentation boards must be received no later than **Monday, April 30, 2018** at the following address:

Peggy Nelson  
Speech-Language-Hearing Sciences  
164 Pillsbury Drive SE  
Shevlin Hall 115  
Minneapolis, MN 55455



Students attending the meeting may hand-deliver their entries. Entries delivered by students must be available at the ASA meeting registration desk no later than **2 p.m. on Monday, May 7, 2018**. Students opting to deliver entries to the meeting are required to notify the competition co-chairs on or before **Monday, April 30, 2018**.

Affix an opaque envelope to the back of EACH display board. Within each envelope, enclose a loose sheet with the names, addresses, phone numbers, e-mail addresses, school affiliations, and advisor(s) of all participating team members. Please indicate summer e-mail and mailing addresses for all team members. Team member identifying information (names, addresses, etc.) will not be revealed to the competition judges. Entrants may also wish to include a layout diagram for the order in which the posters should be displayed.

Please package display boards securely to prevent damage during shipping.

#### **DESIGN SCENARIO**

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

#### **PROGRAM DESCRIPTION**

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 is to 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 heavily 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**

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. **Emphasize the design of this room. It will be weighted heavily when judged.**

Community Hall Anteroom...approximately 400 ft<sup>2</sup> [37.2 m<sup>2</sup>]. This room will function as a dressing, practice, and green room space.



Courtroom...litigation area, judge's bench, jury box, witness stand, and space for clerk, attorneys, and approximately 50 spectators. **Emphasize the design of this room. It will be weighted when judged.**

Judge's Chamber...approximately 200 ft<sup>2</sup> [18.6 m<sup>2</sup>]

Jury Room...approximately 500 ft<sup>2</sup> [46.4 m<sup>2</sup>]

Conference/Meeting Rooms...also to be used for Attorney/Client discussion rooms, 4 required each approximately 150 ft<sup>2</sup> [13.9 m<sup>2</sup>]

Bailiff's Office...approximately 120 ft<sup>2</sup> [11.1 m<sup>2</sup>]

Holding Cells...4 required each approximately 100 ft<sup>2</sup> [9.3 m<sup>2</sup>] 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 ft<sup>2</sup> [185.8 m<sup>2</sup>]

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 ft<sup>2</sup> [55.7 m<sup>2</sup>]

Electrical Equipment Room...approximately 350 ft<sup>2</sup> [32.5 m<sup>2</sup>]

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

#### TECHNICAL REQUIREMENTS

Design competition entries should emphasize the general building acoustics design (room acoustics, noise control, and sound transmission control). *The community hall and courtroom are of primary importance, so these rooms must be emphasized on the posters.* Other programmed building spaces must be included in the overall design, and they may be similarly considered at the discretion of each team in the interest of design completeness. Presentations may include plan and section drawings, renderings, 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.

Electroacoustic systems (sound reinforcement or electroacoustic enhancement systems) design is outside of the competition scope and is not required; however, it is appropriate to indicate the presence of electroacoustic sound reinforcement systems if the design approach requires it. Electroacoustic enhancement (active acoustic) systems may not be used to produce changes in the auditorium acoustical characteristics.

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 the details of the mechanical and electrical system noise control. However, teams should indicate noise criteria, along with general noise and vibration control procedures relating to air handling equipment, electrical transformers, etc. Location of mechanical and electrical rooms will be considered by the judges, as it relates to noise control.



## REFERENCES

Useful design references include:

*Concert Halls and Opera Houses: Music, Acoustics, and Architecture*, Leo Beranek, 2nd Edition, Acoustical Society of America, 2003

*Halls for Music Performance: Two Decades of Experience, 1962-1982*, Edited by Richard H. Talaske, Ewart A. Wetherill, and William J. Cavanaugh, Acoustical Society of America, 1982

*Halls for Music Performance: Another Two Decades of Experience, 1982-2002*, Edited by Ian Hoffman, Christopher Storch, and Timothy Foulkes, Acoustical Society of America, 2003

*Acoustical Design of Music Education Facilities*, Edited by Edward R. McCue and Richard H. Talaske, Acoustical Society of America, 1990

*Acoustical Designing in Architecture*, Vern O. Knudsen and Cyril M. Harris, Acoustical Society of America, 1980 (originally published in 1950)

*Acoustics of Auditoriums in Public Buildings*, Edited by Leonid I Makrinenko and John S. Bradley, Acoustical Society of America, 1994 (originally published 1986)

*Collected Papers on Acoustics*, Wallace Clement Sabine, Acoustical Society of America, 1993 (originally published in 1921)

*Deaf Architects and Blind Acousticians?*, Robert E. Apfel, Acoustical Society of America, 1998

## REQUESTS FOR INFORMATION

Please direct questions to [sdc@newmanfund.org](mailto:sdc@newmanfund.org). Note that general questions and requests for more information about the design scenario or competition will be met with follow-up to all registered teams by the co-chairs.

## COMPETITION TIMELINE SUMMARY

Friday, January 12 – Statement release

Friday, April 6 – registration deadline

Monday, April 30 – Presentation boards must be received by the individual listed in the competition announcement.

Monday, April 30 – (For participants delivering presentation boards to the meeting) notice must be emailed to [sdc@newmanfund.org](mailto:sdc@newmanfund.org) that entry will be delivered to the ASA registration desk.

Monday, May 7 – first day of Minneapolis meeting; digital submission deadline; 2 p.m. deadline for receipt of hand-delivered presentation boards at ASA registration desk

Tuesday, May 8 – Judging and open exhibition



**STUDENT DESIGN COMPETITION CO-CHAIRS CONTACT INFORMATION**

Competition primary contact will be through the e-mail address **[sdc@newmanfund.org](mailto:sdc@newmanfund.org)**.

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