
2016-2017 ACSA/AISC

STEEL

DESIGN

STUDENT COMPETITION

CATEGORY I
MUSEUM

CATEGORY II
OPEN

INTRODUCTION

The Association of Collegiate Schools of Architecture (ACSA) is pleased to announce the 17th Annual Steel Design Student Competition for the 2016-2017 academic year. Administered by Association of Collegiate Schools of Architecture (ACSA) and sponsored by American Institute of Steel Construction (AISC), the program is intended to challenge students, working individually or in teams, to explore a variety of design issues related to the use of steel in design and construction.

CHALLENGE

The ACSA/AISC 2016-2017 Steel Design Student Competition will offer architecture students the opportunity to compete in two separate Categories. Category I will challenge architecture students to design a MUSEUM. The project will allow the student to explore the many varied functional and aesthetic uses for steel as a building material. Students will be exploring the ways in which design and imagination can create a popular visitor destination and a city focal point. The student must keep in mind the current needs of the city, the compatibility of the new structures with the existing surroundings, and the building's ultimate acceptability into the existing urban fabric.

Category II will be an OPEN competition with limited restrictions. This open submission design option will permit the greatest amount of flexibility with the context.

Students may not enter both Categories of the competition.

CATEGORY I: MUSEUM

CATEGORY II: OPEN

CRITERIA FOR JUDGING

Criteria for the judging of submissions will include: creative use of structural steel in the design solution, successful response of the design to its surrounding context, and successful response to basic architectural concepts such as human activity needs, structural integrity, and coherence of architectural vocabulary.

ADVANTAGES OF STEEL

Structural steel offers a number of benefits in building design including the capacity to bear great loads in tension and compression, high resiliency and performance under harsh and difficult conditions (e.g., earthquakes and hurricanes), and the ability to span great distances with minimum material. Steel can be shaped by many processes, ranging from standard rolled sections to custom castings and digitally generated components. It can be prefabricated and delivered for site assembly, and it can be erected quickly under almost any weather condition to meet tight construction schedules. Similarly, steel's wide use for building cladding highlights its durability, technical capabilities and aesthetic versatility.

Steel can be easily modified during the life cycle of a building to accommodate changing occupant requirements. As the most recycled material in the world, steel is an environmentally sound building material choice. Today, structural steel is 97% recycled with the primary source being automobiles. Architects praise the natural beauty of steel and are excited about exposing it in the design of their structures to emphasize grace, slenderness and strength, and in their building envelopes to enhance environmental performance and aesthetic character.

SPONSOR

AISC, headquartered in Chicago, is a non-profit technical institute and trade association established in 1921 to serve the structural steel design community and construction industry in the United States. AISC's mission is to make structural steel the material of choice by being the leader in structural-steel-related technical and market-building activities, including: specification and code development, research, education, technical assistance, quality certification, standardization, and market development. AISC has a long tradition of more than 90 years of service to the steel construction industry providing timely and reliable information.



Membership to AISC is free to university faculty and full time students and AISC membership provides valuable benefits. Information can be found at www.aisc.org/universityprograms under memberships.

ADMINISTRATIVE ORGANIZATION

The Association of Collegiate Schools of Architecture is a nonprofit, membership association founded in 1912 to advance the quality of architectural education. The school membership in ACSA has grown from 10 charter members to over 250 schools in several membership categories. These include full membership for all accredited programs in the United States and government-sanctioned schools in Canada, candidate membership for schools seeking accreditation, and affiliate membership for schools for two-year and international programs. Through these schools, over 4,000 architecture faculty are represented. In addition, over 500 supporting members composed of architecture firms, product associations and individuals add to the breadth of interest and support of ACSA goals. ACSA provides a major forum for ideas on the leading edge of architectural thought. Issues that will affect the architectural profession in the future are being examined today in ACSA member schools.



CATEGORY I: MUSEUM

The 2016-2017 Steel Design Student Competition challenges students to design a museum featuring exhibit areas for large scale exhibits, as well as permanent collections and changing or rotating exhibitions. The museum will become a new destination and symbol for the city. The Museum will include primary galleries, changing galleries, auditorium, as well as a public exterior garden that will provide a setting for community activities.

Students should take into consideration the following when designing the museum: it should maximize clear circulation of the public from part to part; it should be capable of expansion over time; it should be distinctly “legible” – that is, it is to be memorable enough to be photographed for postcards and emblazoned on museum memorabilia.

THE PROGRAM

The functional and programmatic requirements outlined here must be met. The area allocations, however, are suggestions only and may be altered. Solutions should observe the total gross square footage, within a range of plus or minus ten percent.

GALLERIES

Entry Lobby	1,000 sq. ft.
Ticket Sales/Information Booth	250 sq. ft.
Coat Room/Rest Rooms	1,000 sq. ft.
Primary galleries	28,000 sq. ft.

In order to accommodate the diverse manifestations of exhibits, the main exhibition gallery should be designed as a flexible, column-free space that can be divided into smaller galleries as needed. A minimum clear interior vertical dimension of 25-30 feet should be maintained throughout the space. Diagrams conveying the flexibility of the exhibition gallery should be included as part of the required drawings. The gallery should allow for the display and installation of non-traditional art and exhibits.

Changing exhibits	14,000 sq. ft.
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The changing exhibit gallery should also be designed as a flexible, column-free space that can be divided into smaller galleries as needed. Diagrams conveying the flexibility of the exhibition gallery should be included as part of the required drawings. The gallery should allow for the display and installation of non-traditional art and exhibits.

Auditorium for 250	2,500 sq. ft.
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This auditorium will allow the community and visitors an area for lectures, film screening, and social functions. The auditorium will mostly be used by the general public and will often be loaned to community organizations.

Public Exterior Space/Garden	5,000 sq. ft.
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This exterior exhibit garden is intended to highlight the site and its context of the surrounding area.

Galleries Subtotal	50,250 sq. ft.
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ADMINISTRATION

Directors Office	200 sq. ft.
4 Assistant Directors Office	150 sq. ft. each
Administrative Assistants	600 sq. ft.
Conference Room	200 sq. ft.
Board Room	300 sq. ft.
Publicity	400 sq. ft.
Administration Subtotal	2,300 sq. ft.

SERVICE

Loading Area	500 sq. ft.
Superintendent Office	100 sq. ft.
Security Office	100 sq. ft.
Breakroom/Locker Area	300 sq. ft.
Staff Restrooms	250 sq. ft.
Workshop	400 sq. ft.
Storage	2,000 sq. ft.
Electrical Room	200 sq. ft.
Mechanical Room	500 sq. ft.
Communications Room	100 sq. ft.
Service Subtotal	4,450 sq. ft.

ANCILLARY AREAS

Restaurant (150 seated)	1,500 sq. ft.
Kitchen	1,500 sq. ft.
Gift Shop	1,500 sq. ft.

MUSEUM TOTAL 62,000 sq. ft.

Total Net Square Feet
Plus 25% Allowance
For mechanical areas,
circulation, structure, etc.

77,500 sq. ft.

PARKING 250 automobiles

THE SITE

The museum should be sited on a city lot to be chosen by the faculty sponsor and/or the student. The criteria for site selection include the following:

SIZE: the site should be no larger than a single city block

CONTEXT: the site should be located in an easily reached area of the city

ACCESS: the site should be accessible by public transportation, walking, or vehicle.

It is vitally important that the site is studied and researched in detail, as this should be the springing point for the design. The eventual competition entry should clearly show how the building responds to its "site", in the widest understanding of that word. It is important that the site study reaches far beyond the aspects of the individual site, in order to determine the context for design, the programmatic brief for the building, and to inform the design process to follow. Site studies thus need to embrace the 'local' (the direct site context of the building), the 'intermediate' (since a museum has a physical relationship with places far and wide in a city) and the 'global' (the city and local culture as a whole).

CATEGORY II: OPEN

The ACSA/AISC 2016-2017 Steel Design Student Competition offers architecture students the opportunity to participate in an open competition with limited restrictions. This category will allow the students (with the approval of the sponsoring faculty member) to select a site and building program.

The Category II program should be of equal complexity as the Category I program. Submissions entering Category II must submit a written building program along with the online final submission.

RESTRICTION

To enter the open competition students may select any building occupancy other than a Museum. The structure must have at least one space requiring long span steel structure.

USE OF STEEL

Steel must be used as the primary structural material. Design proposals must contain at least one space/element that requires long-span steel structure, with special emphasis placed on innovation in steel design. The most compelling proposals will inevitably integrate the use of steel into the design of the project at multiple levels, from primary structure to building envelope and tectonic details.

INTEGRATED DESIGN

Design proposals must reflect a clear conceptual strategy, which is resolved in built form at a detailed level. The project should be developed with an integrative approach to the innovative use of building materials and systems—spatial, structural, environmental and enclosure.

Participants will develop a selected physical area of the project in greater detail considering the building's systems through larger scale drawings showing structure, environmental strategies, building envelope and interior spaces. Through rendered perspectives and elevations, the proposals should demonstrate surface qualities including material, color, texture, and light.

Together with the integrated resolution of structural, tectonic and technical issues, projects should be designed in a socially and environmentally responsible manner. Design proposals should respond to the physical context (geography, topography and latitude), climate (sun, wind, light and water), and culture (patterns of interaction rising from human occupation). Projects should demonstrate reduced dependency on non-renewable resources and the integration of environmental responsibility with the architectural vocabulary of the proposal.

CODE INFORMATION

Refer to the International Building Code and the local zoning ordinance for information on parking requirements, height restrictions, setbacks, easements, flood, egress and fire containment. All proposals must be designed to meet requirements for accessibility; for guidelines, refer to the Americans with Disabilities Act and the principles of Universal Design.

CRITERIA FOR JUDGING

Submissions must clearly represent the selected program. In addressing the specific issues of the design challenge, submissions must clearly demonstrate the design solution's response to the following requirements:

- An elegant expressive understanding of the material – steel – deployed with maximum innovative potential
- A strong conceptual strategy translated into a coherent integrated design proposal
- An articulate mastery of formal concepts and aesthetic values
- A compelling response to the physical and cultural context of the scheme
- A mature awareness and innovative approach to environmental issues
- A thorough appreciation of human needs and social responsibilities

REQUIRED SUBMISSION DOCUMENTS

Design Boards must include (but are not limited to) the following required drawings:

- Three-dimensional representations in the form of axonometrics, perspectives showing the proposal in its context, montages and/or physical model photographs to illustrate the character of the project
- Site plan showing proposal in its context of surrounding buildings and topography, together with details of access/circulation
- Building/site sections sufficient to show site context and major spatial and program elements
- Floor plans to show program elements, spatial adjacencies and navigation strategies
- Large scale drawing(s), either orthographic or three dimensional, illustrating the use and detailing of steel for building structure and/or envelope and integrated design

Submissions must include:

- Completed online registration including all team members and faculty sponsors
- Up to 4 digital boards at 20" x 20"
- A design essay or abstract (300 words maximum)
- Program summary diagram/text of spaces and areas (300 words maximum)

Incomplete or undocumented entries will be disqualified. All drawings should be presented at a scale appropriate to the design solution and include a graphic scale. The site plan should include a north arrow.

SCHEDULE

March 29, 2017:	Registration Deadline
May 24, 2017:	Submission Deadline
Summer 2017:	Winners Announced
Fall 2017:	Publication of Summary Book

AWARDS

First, second, and third prizes will be awarded in each of the two categories, in addition to a selected number of honorable mentions at the discretion of the jury. Winners and their faculty sponsors will be notified of the competition results directly. A list of winning projects will be posted on the ACSA web site at www.acsa-arch.org and the AISC web site at www.aisc.org. A total of \$14,000 will be distributed in the following manner:

Category I **MUSEUM**

First Prize Student	\$2,500
Faculty Sponsor	\$1,000
Second Prize Student	\$1,500
Faculty Sponsor	\$750
Third Prize Student	\$750
Faculty Sponsor	\$500

Category II **OPEN**

First Prize Student	\$2,500
Faculty Sponsor	\$1,000
Second Prize Student	\$1,500
Faculty Sponsor	\$750
Third Prize Student	\$750
Faculty Sponsor	\$500

ELIGIBILITY

Because the support of AISC is largely derived from steel companies whose markets are mainly in the U.S., the competition is open to students from ACSA Full and Candidate Member Schools from the U.S. and Canada, as well as ACSA Affiliate Members Schools from the U.S., Canada, and Mexico only.

The competition is open to upper level students (third year or above, including graduate students). All student entrants are required to work under the direction of a faculty sponsor. Entries will be accepted for individuals as well as teams. Teams must be limited to a maximum of five students. Submissions should be principally the product of work in a design studio or related class.

REGISTRATION

A faculty sponsor is required to enroll students online by March 29, 2017. Registration can be done for your entire studio or for each individual student or team of students participating. Students or teams wishing to enter the competition on their own must have a faculty sponsor, who should complete the registration. There is no entry or submission fee to participate in the competition. Each registered student and faculty sponsor will receive a confirmation email that will include information on how the student(s) will upload final submissions online. Please add the email address competitions@acsa-arch.org to your address book to ensure that you receive all emails regarding your submission.

During registration the faculty will have the ability to add students, add teams, assign students to teams, and add additional faculty sponsors. Registration is required by March 29, 2017, but can be changed, edited, and added to until a student starts a final submission; then the registration is no longer editable.

FACULTY RESPONSIBILITY

The administration of the competition at each institution is left to the discretion of the faculty within the guidelines set forth in this document. Work on the competition should be structured over the course of one semester during the 2016-2017 academic year.

Each faculty sponsor is expected to develop a system to evaluate the students' work using the criteria set forth in this program. The evaluation process should be an integral part of the design process, encouraging students to scrutinize their work in a manner similar to that of the jury.

DIGITAL SUBMISSION FORMAT

SUBMISSIONS MUST BE PRESENTED ON FOUR 20" X 20" DIGITAL BOARDS. ALL BOARDS ARE REQUIRED TO BE UPLOADED THROUGH THE ACSA WEBSITE AS PORTABLE DOCUMENT FORMAT (PDF) OR IMAGE (JPEG) FILES. THE NAMES OF STUDENT PARTICIPANTS, THEIR SCHOOLS, OR FACULTY SPONSORS, MUST NOT APPEAR ON THE BOARDS, OR IN THE PROJECT TITLE OR PROJECT TITLE FILE NAME(S).

DESIGN ESSAY / ABSTRACT

A brief essay, 300 words maximum, is required as part of the submission describing the most important concepts of the design project. Keep in mind that the presentation should graphically convey the design solution and context, and not rely on the design essay to convey a basic understanding of the project. The names of student participants, their schools, or faculty sponsors, must NOT appear in the design essay. This abstract is included in the final online submission, completed by the student(s) in a simple copy/paste text box.

PROGRAM SUMMARY

A program summary diagram/text of spaces and areas is required as part of the submission. All interior and exterior spaces are to be included; total net and gross areas are required.

ONLINE PROJECT SUBMISSION

The student is required to submit the final entries that must be uploaded through the ACSA Competition website at www.acsa-arch.org by midnight, Eastern Time, on May 24, 2017. If the submission is from a team of students, all student team members will have the ability to upload the digital files. Once the final submit button is pressed no additional edits, uploads, or changes can be made. Once the final submission is uploaded and submitted, each student will receive a confirmation email notification. You may "save" your submission and return to complete. Please note: The submission is not complete until the "complete this submission" button has been pressed. For team projects, any member of team projects may submit the final project.

The final submission upload must contain the following:

- Completed online registration including all team members and faculty sponsors
- Each of the four 20"x20" boards uploaded individually as a high resolution PDF or JPEG file
- A design essay or abstract
- A program summary

Winning projects will be required to submit high-resolution original files/images for use in competition publications and exhibit materials. By uploading your files, you agree that the Association of Collegiate Schools of Architecture (ACSA) has the rights to use your winning submission, images and materials in a summary publication, online and in promotional and exhibition resources. ACSA will attribute authorship of the winning design to you, your team, faculty and affiliation. Additionally, you hereby warrant that the submission is original and that you are the author(s) of the submission.

STEPS FOR REGISTERED STUDENTS TO UPLOAD FINAL SUBMISSION

1. Log in to the ACSA website
2. Click "My ACSA"
3. Click "My Competitions"
4. Locate the 16-17 Steel Design Student Competition, Click "Submissions"
5. Click "Upload My Submissions"

From here you will see a series of tabs to complete for your submission. Remember to go to the Submit tab and click "Complete this Submission" once everything has been uploaded.

RESOURCES

An intention of all ACSA competitions is to make students aware that research is a fundamental element of any design solution. Students are encouraged to research material properties and methods of steel construction, as well as precedent projects that demonstrate innovative use of structural steel.

STEEL VIDEO RESOURCES

these online streaming Steel Video Resource are from Professor Terri Meyer Boake from the University of Waterloo, School of Architecture on Architecturally Exposed Structural Steel (AEES). These videos are provided from the American Institute of Steel Construction (AISC), Association of Collegiate Schools of Architecture, and Professor Boake.

- www.acsa-arch.org/resources/faculty-resources/teaching-resources/steel-video-resources

STEEL CONSTRUCTION REFERENCES

- AISC website: www.aisc.org
- Modern Steel Construction: This authoritative monthly magazine is made available free of charge to architectural students taking steel design courses. This magazine covers the use of fabricated structural steel in the variety of structural types. It presents information on the newest and most advanced applications of structural steel in a wide range of structures. Issues of Modern Steel Construction (1996 - Present) are available online. Visit www.modernsteel.com to view them
- Terri Meyer Boake. Understanding Steel Design: An Architectural Design Manual. (Birkhäuser 2013)
- John Fernandez. Material Architecture. (Spon Press, 2006)
- Victoria Bell and Patrick Rand. Materials for Design 2. (Princeton Architectural Press, 2014)
- Shulitz, Habermann, Sobek. Steel Construction Manual. (Birkhäuser Basel 2000)
- Annette LeCuyer. Steel and Beyond. (Birkhäuser Basel 2003)

FOR MORE INFORMATION

Program updates, including information on jury members as they are confirmed, may be found on the ACSA web site at www.acsa-arch.org/competitions.

Additional questions on the competition program and submissions should be addressed to:

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