2020-2021 ACSA/AISC STEEL DESIGN STUDENT COMPETITION

CATEGORY I

WORKPLACE WELLNESS

The Future of Design

CATEGORY II

OPEN

PROGRAM

COMPETITION OVERVIEW

The Association of Collegiate Schools of Architecture (ACSA) is pleased to announce the 21st Annual Steel Design Student Competition for the 2020-2021 academic year. Administered by the Association of Collegiate Schools of Architecture (ACSA) and sponsored by the American Institute of Steel Construction (AISC), the program is intended to challenge undergraduate and graduate students, working individually or in teams, to explore a variety of design issues related to the use of steel in design and construction. Steel must be used as the primary structural material and contain at least one space that requires long-span steel structure, with special emphasis placed on innovation in steel design.

THE OPPORTUNITIES

The 2021 Steel Design Student Competition will offer architecture students the opportunity to compete in two separate categories:

CATEGORY I: WORKPLACE WELLNESS

Challenges architecture students to rethink the nature of working in a post-pandemic era and how to design for holistic physical and mental wellness for all the building's inhabitants. We are asking you to go beyond the traditionally held singular focus on worker productivity and think about environments where everyone is safe and thrives.

CATEGORY II: OPEN

Offers architecture students the opportunity to select a site and building program using steel as the primary material. This competition category permits the greatest amount of flexibility for any building type.

Students may not enter both categories of the competition.

The competition allows students to explore the many functional and aesthetic uses for steel as a building material and structural system. Steel is an ideal material for multi-story building because it offers the greatest strength-to-weight ratio. In addition, steel can be constructed quickly and for all project site types with the use of labor-saving prefabrication methods such as kit-of-parts, panelization, and modular construction. A building built with steel is potentially more flexible and adaptable to allow for a change in program, occupancy, and loading needs over time.

ELIGIBILITY

Because the support of AISC is largely derived from steel companies whose markets are mainly in the U.S., the ACSA/AISC Steel Design Student Competition is open to students and/or student teams from ACSA Full and Candidate Member Schools, as well as ACSA Affiliate Members Schools from the U.S., Canada, and Mexico.

SCHEDULE

April 7, 2021	Registration Deadline (free)
June 2, 2021	Submission Deadline
Summer 2021	Winners Announced
Fall 2021	Publication of Summary Book

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, such as earthquakes and hurricanes, and the ability to span great distances with minimal 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.

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.

Curved steel is an art, providing endless possibilities for architectural expression. Curved steel enhances the visibility of any building project – from the largest monumental project to that building down your street. Curved steel is a unique way to increase the design creativity of your next building project. And most importantly, curved steel is readily available nationally from a number of qualified AISC Associate Member Bender-Rollers. AISC information on curved steel: *aisc.org/curvedsteel*.

AWARDS

The design jury will meet in Summer 2021 to select winning projects and honorable mentions. 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 and the AISC web site at *www.aisc.org*.

Winning students and their faculty sponsors will receive cash prizes totaling **$20,000**

Category I: Workplace Wellness

First Place
Student $4,000 Faculty Sponsor $1,500

Second Place
Student $2,000 Faculty Sponsor $1,000

Third Place
Student $1,000 Faculty Sponsor $500

Category II: Open

First Place
Student $4,000 Faculty Sponsor $1,500

Second Place
Student $2,000 Faculty Sponsor $1,000

Third Place
Student $1,000 Faculty Sponsor $500

A limited number of honorable mentions may also be awarded at the jury's discretion. Prize-winning submissions will be exhibited at the 2022 ACSA Annual Meeting and the 2022 AIA National Convention as well as published in a competition summary publication.

CRITERIA FOR JUDGING

Criteria for the judging of submissions will include the following:

- Creative use of structural steel in the design solution
- Successful response of the design to its surrounding context
- Successful response to basic architectural concepts such as human activity needs, structural integrity, and coherence of architectural vocabulary.

CATEGORY I

WORKPLACE WELLNESS: The Future of Design

It's still unclear how the current pandemic will shape our future built environments, but workplaces will likely be the first visible front of change. How will the sudden and radical shift in how we work be codified? The pandemic era will not be permanent, but it has forced many to embrace more flexible scheduling, remote working, and the needs of workers in a crisis, from on-site childcare to accommodating those most vulnerable to illness. How can a workplace keep all of its inhabitants safe, from those that keep a building's essential services running to its office workers and management And once the pandemic passes, how can the workplace ensure wellness on a more holistic level byp

Steel is an ideal structural system to confront these challenges. It allows for large openings, sunlight and easy airflow, flexible layouts, and innovative approaches to services. Steel can be easily modified during the life cycle of a building to accommodate changing requirements. This competition asks students to move beyond the long-held impetus for a healthy workplace to merely ensure worker productivity, to one where everyone thrives.

PROGRAM

What kind of work the building supports is up to you. It could be offices, labs, studios, or even light industry or manufacturing. However, the type of work should be reflective of its location in terms of existing industries, population, and landscape, and this reasoning should be explained graphically or otherwise in the submission. It should be a new building and meet a minimum of six levels in height. Consider the life cycle of the building and the different user profiles of those who work there, including those instrumental to its daily operations and maintenance. The building should support the health of all its inhabitants.

The program can include retail that is logically connected to its main operations, but no residential spaces. We encourage thinking about access to outdoor spaces as both a ventilation strategy and to support health. This can be part of an overall site strategy and/or integral to the building design itself (i.e., interior courtyards, decks, etc.).

Solutions should observe the total gross square footage of 125,400 square feet, within a range of plus or minus ten percent. Please provide an itemized program breakdown listing spaces, square footage allocation, and totals with your submission.

Workplace program spaces can range pending the buildings operations. Following is a list of programmatic spaces to consider including in your workplace designs in addition to the main workspaces themselves:

SERVICE SPACES

- Kitchens
- Restrooms
- Administrative Offices
- Circulation
- Storage
- Information Technology (IT) Closets
- Sanitation Spaces
- Maintenance
- Mechanical Rooms

WELLNESS & PERSONAL SUPPORT SPACES

- Physical Fitness Spaces
- Lactation Rooms
- Yoga and Meditation Rooms
- Childcare Spaces

COMMON SPACES

- Lobby/Entrance
- Cafeteria/Employee Lounge(s)
- Conference/Classrooms

CATEGORY II

OPEN

The ACSA/AISC 2021 Steel Design Student Competition also offers architecture students the opportunity to participate in an open competition with limited restrictions. With the approval of a sponsoring faculty member, students may select a site and building program.

The Category II program should be of equal complexity as the Category I program. Students entering Category II must submit a written building program, including a brief description of the building type, gross square footage, and project location, as part of the online submission in the Program Edits (copy/paste text box).

RESTRICTIONS
To enter the open competition students may select any building occupancy other than office or workplace building.

Students may not enter both categories of the competition.

RULES

ELIGIBILITY

Because the support of AISC is largely derived from steel companies whose markets are mainly in the U.S., the ACSA/AISC Steel Design Student Competition is open to students and/or student teams from ACSA Full and Candidate Member Schools, as well as ACSA Affiliate Members Schools from the U.S., Canada, and Mexico.

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.

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.

BUILDING CODE

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.

SITE

The site for the competition is the choice of the student and/or faculty sponsor. However, the site should be accessible to at least some of its potential workforce by alternative modes of transportation such as public transportation, biking, or walking. Submissions will be required to explain the site selection, strategy, and access graphically or otherwise.

CONSTRUCTION TYPE

The design project must be conceived in structural steel construction and 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.

JUDGING CRITERIA

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–structural steel–deployed with maximum innovative potential with a minimum of one long-span space
- 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 of and an innovative approach to sustainability as a convergence of social, economic and environmental issues
- A thorough appreciation of human needs and social responsibilities

REGISTRATION

A faculty sponsor is required to enroll students online (available at www.acsa-arch.org) by April 7, 2021. 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 April 7, 2021, but can be changed, edited, and added to until a student starts a final submission; then the registration is no longer editable.

Registration Steps:

1. Faculty log into the ACSA website,
2. Click the “Register your Students NOW” button,
3. Select the 2021 Steel Competition (Category I or II) from the submission type dropdown menu & Click “Enter”,
4. Add an individual student click “Add Student”. You will need to know each student’s first & last names, email, & institution, which are all required fields for each student,
5. If this is a team registration, you may add additional students by clicking “Add Student” to the same submission to this team, teams must be limited to a maximum of five students,
6. Once the individual student or team is complete, Click “Submit”,
7. Repeat steps 3 – 6 for each individual or team.

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 2020-2021 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.

SCHEDULE

April 7, 2021	Registration Deadline (free registration)
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SUBMISSIONS

REQUIRED SUBMISSION DOCUMENTS

Submissions 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
  - integrated design

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.

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 11:59 pm, Pacific Time, on June 2, 2021. 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. 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, each member of team projects may submit the final project, but each project should be submitted only once. Once the final submission is uploaded and submitted, each student will receive a confirmation email notification.

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 high resolution JPEG files, no more than 20MB each,
- A design essay or abstract (300 words maximum)
- A program summary diagram/text of spaces and areas (150 words maximum).

The names of student participants, their schools and faculty sponsors must NOT appear on the boards, abstract, program summary, or in the file name.

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.

SUBMISSION FORMAT
Submissions must be presented on four 20” x 20” digital boards, no more than 20MB. All boards are required to be uploaded through the ACSA website as JPEG files.

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. This abstract is included in the final online submission, completed by the student(s) in a text box.

PROGRAM SUMMARY
A program summary, 150 words maximum, 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. The program summary is included in the final online submission, uploaded by the student(s) in a text box.

The names of student participants, their schools and faculty sponsors must NOT appear on the boards, abstract, program summary, or in the file name.

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 CONSTRUCTION REFERENCES

1. AISC website: aisc.org
2. Modern Steel Construction: This authoritative monthly magazine is made available online free of charge. 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 modernsteel.com to view them.
3. Terri Meyer Boake. Understanding Steel Design: An Architectural Design Manual. (Birkhäuser 2013)
4. John Fernandez. Material Architecture. (Spon Press, 2006)
5. Victoria Bell and Patrick Rand. Materials for Design 2. (Princeton Architectural Press, 2014)
6. Shulitz, Habermann, Sobek. Steel Construction Manual. (Birkhäuser Basel 2000)
7. Annette LeCuyer. Steel and Beyond. (Birkhäuser Basel 2003)
8. Sutherland Lyall. Remarkable Structure: Engineering today’s Innovative Buildings. (Princeton Architectural Press, 2002)

WELLNESS REFERENCES

1. Center for Active Design, Fitwel Certification. https://www.fitwel.org/
2. Emily Anthes, The Great Indoors: The Surprising Science of How Buildings Shape Our Behavior, Health, and Happiness. (Macmillan 2020)
3. Toward a Wellness-Based Workplace. (Report, Gensler 2013) https://www.gensler.com/research-insight/gensler-research-institute/toward-a-wellness-based-workplace
4. Howard Frumkin. “Healthy places: exploring the evidence.” American journal of public health 93.9 (2003): 1451-1456.

COMPETITION ORGANIZERS

THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION

The American Institute of Steel Construction (AISC), headquartered in Chicago, is a non-partisan, not-for-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, market development, and advocacy. AISC has a long tradition 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.*

ASSOCIATION OF COLLEGIATE SCHOOLS OF ARCHITECTURE

Leading Architectural Education and Research

ACSA 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 5,000 architecture faculty members 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.

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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