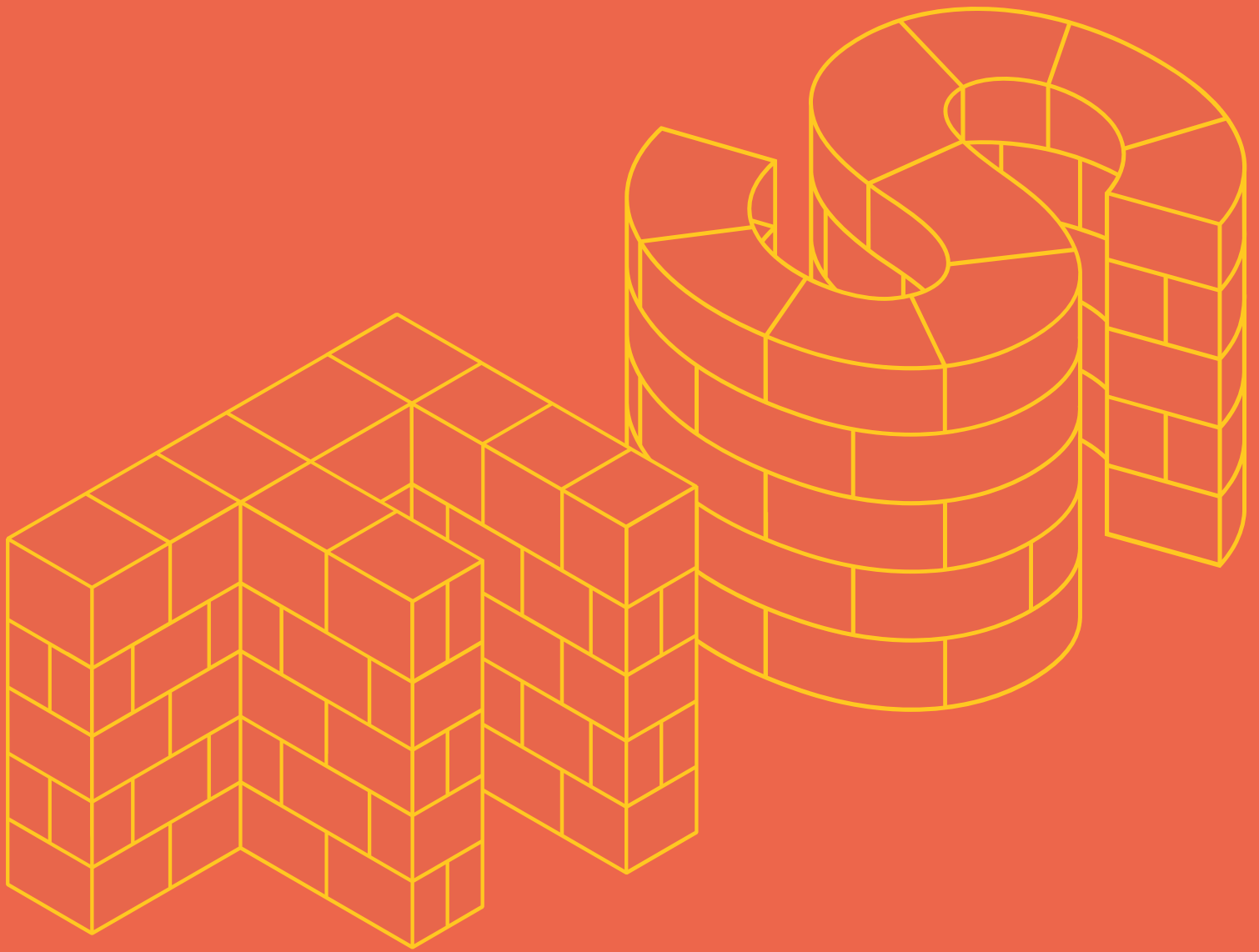


2025 CONCRETE MASONRY DESIGN COMPETITION

FIRE STATION



PROGRAM

SPONSORED BY



CONCRETE
MASONRY &
HARDSCAPES
ASSOCIATION

2025 Concrete Masonry Design Student Competition

Fire Station

INTRODUCTION

The Association of Collegiate Schools of Architecture (ACSA) is pleased to announce the **Concrete Masonry Design Competition** for the 2024-2025 academic year. The competition is a partnership with the Concrete Masonry & Hardscapes Association (CMHA). The competition will challenge students, working individually or in teams, to explore a variety of design issues related masonry construction on a **Fire Station** with an emphasis on local civic engagement.

THE CHALLENGE

The design competition asks students to use concrete masonry products as the primary material in the design of a state-of-the-art Fire Station. The fire station needs to accommodate diverse functions, including equipment and vehicle storage, maintenance, gender inclusive housing accommodations, recreation, administration, training, community education and civic events. Concrete masonry is a flexible, resilient and durable material, and provides vast opportunities for form, function and expression.

Fire Stations are extremely complicated buildings technically and they are one of the few commercial building types that are open for business 24 hours a day, 365 days a year. There is also the challenge of integrating commercial uses with immediate adjacency to residential uses so that the building can maintain the duality of its purpose by providing a home to the people that live there while serving the greater public at large (people actually walking into a station for help). You have to consider that fire stations are civic buildings that are placed in residential environments, and that while these buildings need to fulfill many perceptions from the public at large, more specifically they need to address the perception of the community they serve. This could mean breaking the components of the building into smaller units and selecting materials so that the station fits into its neighborhood. It could also mean adjusting the architectural features to create a heightened sense of civic pride and stability.

-Bob Borson, Architect

AWARDS

Jurors will select First, Second, and Third prize winners, in addition to a selected number of honorable mentions, all at the discretion of the jury. A total of **\$20,000** USD is distributed by ACSA, in the following manner to the winners:

First Prize	Student	\$8,000
	Faculty Sponsor	\$3,000
Second Prize	Student	\$4,000
	Faculty Sponsor	\$2,000
Third Prize	Student	\$2,000
	Faculty Sponsor	\$1,000

ELIGIBILITY

Because the support of CMHA is largely derived from masonry companies whose markets are mainly in the U.S. and Canada, the ACSA/CMHA 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 only.

SCHEDULE

April 9, 2025	Registration Deadline (free registration)
June 4, 2025	Submission Deadline
Summer 2025	Winners Announced

CRITERIA FOR JUDGING

Submissions must clearly address the specific issues of the design challenge, submissions must clearly demonstrate the design solution's response to the following requirements:

- A clear understanding of concrete masonry units—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 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

PROGRAM

Overall programming of the fire station is up to the student and/or faculty sponsor. It should include a variety indicated below and allow space for different types of civic engagement. Consider the life cycle of the building and the different types of individuals who would use the fire station over time. Students should also consider sustainability and reducing environmental impacts in their design.

The following is a list of programmatic spaces that needs be included in the fire station. Solutions should observe the given spaces and sizes within a range of plus or minus ten percent.

PUBLIC SPACES

Lobby	300 sq. ft.
Conference Room	300 sq. ft.
<i>also used for Training</i>	
ADA Public Toilet	100 sq. ft.
Office/Outreach	300 sq. ft.
Public Spaces Subtotal:	1,000 sq. ft.

ENGINE BAY AND SUPPORT AREAS

Apparatus Bay	3,000 sq. ft.
<i>to house: 1 Fire Engine and 1 Ambulance</i>	
Workshop	200 sq. ft.
Storage	100 sq. ft.
Air Room	200 sq. ft.
Watch/Dispatch Room	100 sq. ft.
Janitor Closet	80 sq. ft.
Mechanical (HVAC, electrical)	150 sq. ft.
Maintenance Equipment Storage	80 sq. ft.
Data Room	80 sq. ft.
Clean/Laundry Room	200 sq. ft.
Apparatus Bay Subtotal:	4,190 sq. ft.

LIVING QUARTERS

10 Single Sleeping Rooms @ 110 sq. ft.	1,100 sq. ft.
ADA Bathroom(s)	400 sq. ft.
<i>Gender Inclusive (Men, Women, Non-Binary)</i>	
Kitchen and Dining	500 sq. ft.
Gym	350 sq. ft.
Lounge	350 sq. ft.
Living Subtotal:	2,700 sq. ft.

Building Net Area **7,890 sq. ft.**

Circulation & Services (20%) 1,578 sq. ft.

BUILDING GROSS AREA **9,468 sq. ft.**

PLAZA SPACE

An open 50' x 65' area for the parking of the engines and for community events.

SITE

The site for the competition is the choice of the student and/or faculty sponsor. Submissions will be required to explain the site selection, strategy, and access graphically or otherwise.

CONSTRUCTION TYPE

The primary structural system must be concrete masonry. This can be architectural block, single-wythe concrete masonry or multi-wythe, with the backup being CMU. Participants are encouraged to consider innovative ways to use concrete masonry products in interior, exterior, and landscape applications. Outdoor spaces can include concrete masonry (such as screen or privacy walls) as well as other dry-cast concrete products, such as concrete pavers and segmental retaining wall units.

Concrete Masonry Units (CMU)

CMU are manufactured using dry-cast concrete on high-speed manufacturing equipment. Dry-cast concrete differs from other types of concrete in that it is initially mixed to a very stiff consistency. This consistency facilitates production through manufacturing equipment. This equipment utilizes compaction and vibration to form the units, and a curing process to accelerate hardening.

There are several American Society for Testing and Materials (ASTM) specifications that cover concrete masonry products. The primary one is ASTM C90, *Standard Specification for Loadbearing Concrete Masonry Units*.

Additional Concrete Products

The manufacturing process for CMU is also used to make a variety of other types of products, including segmental retaining wall (SRW) and concrete paving units. These are primarily used in hardscape applications (residentially, commercially, and more).

REGISTRATION & RULE

Faculty Sponsor Online Registration

One Registration for Each Entry

An [ACSA member school](https://www.acsa-arch.org), faculty sponsor is required to enroll students online (available at www.acsa-arch.org) by **April 9, 2025**. 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 9, 2025, 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" button,
3. Select the 2025 Concrete Masonry Competition from the submission type dropdown menu & Click "Enter",
4. Select "Individual Registration" to add individual student. Click "Save and Continue". You will need to know each student's first & last names, email, & institution, which are all required fields for each student,
5. Select "Team Registration" 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 2024-2025 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.

The intent of this competition is to provide an academically rigorous design challenge suitable for integration into the curriculum of an architectural design studio or course. Curriculum integration is not a requirement of competition guidelines but is strongly encouraged. The administration of the competition at each institution is left to the discretion of the faculty within the guidelines set forth in this document.

Digital Submission Format

Submissions must be presented on four 20" x 30" digital boards, no more than 20MB each. All boards are required to be uploaded through the ACSA website as 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 or 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, 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 simple copy/paste text box.

Required Submission Documents

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

- Site plan (with north arrow) showing proposal in its context of surrounding buildings and topography, together with details of access/circulation;
- Floor plans, for each unit, to show program elements, spatial adjacencies and navigation strategies;
- Street elevations, building elevations, site sections, and building sections sufficient to show site context and major spatial and program elements;
- 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;
- Large scale drawing(s), either orthographic or three dimensional, illustrating:
 - the use and detailing of concrete masonry units;
 - 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.

ONLINE PROJECT SUBMISSION

After the faculty sponsor completes the online registration, each student will receive a confirmation email, which will include a link to complete the online 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 4, 2025. 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”x30” 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.

RESOURCES

Entrants are encouraged to research references that are related to both the topic of the competition and precedent projects that demonstrate innovative use of concrete such as those listed below. An intention of all ACSA competitions is to make students aware that research is a fundamental element of any design solution.

- [National Concrete Masonry Association Education and Research Foundation \(NCMA FDN\)](#)
- [Concrete Masonry & Hardscapes Association \(CMHA\)](#)
- [CMU Inspiration](#)
- [SRW Inspiration](#)
- [Technical Resources](#)
- [Online Education](#)

Other masonry industry organizations/resources:

- [The Masonry Society](#)
- [NCMA Foundation](#)
- [Canadian Concrete Masonry Producers Association](#)
- [International Masonry Institute](#)
- [Mason Contractors Association of America](#)

Local/State/Regional/Provincial Groups: There is a broad network of local concrete masonry promotion groups that have resources to support students and professors. Contact CMHA for assistance in getting connected with groups in your area.

COMPETITION ORGANIZERS

Sponsor

Concrete Masonry & Hardscapes Association (CMHA)

The Concrete Masonry & Hardscapes Association (CMHA) represents a unification of the Interlocking Concrete Pavement Institute (ICPI) and National Concrete Masonry Association (NCMA). CMHA is a trade association representing US and Canadian producers and suppliers in the concrete masonry and hardscape industry, as well as contractors of interlocking concrete pavement and segmental retaining walls. CMHA is the authority for segmental concrete products and systems, which are the best value and preferred choice for resilient pavement, structures, and living spaces. CMHA is dedicated to the advancement of these building systems through research, promotion, education, and the development of manufacturing guides, design codes and resources, testing standards, and construction practices.

<https://www.masonryandhardscapes.org/>

Administrative Organization

Association of Collegiate Schools of Architecture

Leading Architectural Education and Research

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 6,000 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.

www.acsa-arch.org

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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Competition Program written and developed by: Marcus Shaffer, Pennsylvania State University, along with ACSA & CMHA.