



2026-2027 **PRECAST** **CONCRETE** STUDENT DESIGN COMPETITION

2026-2027

PRECAST
CONCRETE
STUDENT DESIGN
COMPETITION



Canadian Precast Concrete Institute
Institut Canadien du Béton Préfabriqué

cpci.ca

2026-2027 PRECAST CONCRETE STUDENT DESIGN COMPETITION

About the Canadian Precast Concrete Institute (CPCI)

CPCI is the prime source of technical information about precast and prestressed concrete in Canada, whose mission is to be the body of knowledge for precast and prestressed concrete in Canada and to educate, advocate and raise awareness with key decision makers on the outstanding attributes of precast concrete products and systems. The inherent benefits of precast, prestressed concrete make it the best choice for many projects. Higher structural strength provides long clear spans. Fast production, delivery and erection saves time and money. The creative dimensions of shape, texture, colour and pattern produce attractive buildings. Durability means unsurpassed low maintenance and life-time cost effectiveness. CPCI Members have the facilities, the people, the products and the desire to make a meaningful contribution to the planning and completion of your next project.

Competition Overview

CPCI is pleased to announce the fourth annual Precast Concrete Student Design Competition for the 2026-2027 academic year. The competition is hosted by the CPCI and is intended to challenge both architecture and engineering students (undergraduate and/or graduate) to investigate the design and technical opportunities of precast concrete. Submissions should highlight the opportunities precast concrete offers in terms of construction, structural strength, design innovation, social value, maintenance and durability.

Design Theme

This year's theme focuses on sustainability and the use of low-carbon concrete. Students will need to design a bench using precast concrete and the theme of sustainability and the use of low carbon concrete should be carefully considered along with the technical understanding of precast concrete systems.



Working with a Precaster

After teams have registered, they will be paired with a local precaster to begin working on their bench design and to explore precast concrete components and learn more about fabrication. CPCI will contact teams to make this connection with a precaster. The precaster's role will be to provide guidance in the design process. Note that this doesn't guarantee that the bench will be fabricated.

Eligibility

Any student enrolled in an accredited Canadian University or College in the following areas:

- Architecture Science, Technician or Technology
- Civil Engineering or Civil Technology

Note: Team members can be from different colleges and universities.

Teams

- Maximum 5 team members
- Minimum 1 architecture science, technician, or technology student
- Minimum 1 civil engineering or civil technology student

Note: 1 supervisor in Architecture and 1 in Engineering/Technology must approve and sign off on the submission. Teams can still apply if they don't have members from both architecture and engineering. Please contact CPCI for assistance with being paired with another school or department.

SUBMISSION REQUIREMENTS

Entries must be submitted electronically (PDF) to CPCI at info@cpci.ca. Each entry should contain, in order, the following documents (in English):

Poster (1 page maximum in electronic PDF)

- Project description and understanding of Wellness goals (200-word max)
- Sketches
- Drawings: Plan(s), Section(s), Elevation(s), Detail(s)
- Renderings or other key drawings and photos
- Must include the project title and names of team members

Virtual Presentation to the Jury Panel

Teams will be invited to deliver a virtual presentation to the jury to present their bench design. The presentations will be between 5 to 7 minutes. CPCI will reach out to each team to schedule their presentation date and time.



Fabrication of the winning bench from Guelph University (winners of the 2020-21 Wellness Bench Design Competition)

Written Report (10 pages maximum including cover page and table of contents – in electronic PDF)

- **Project Statement:** Describe project goals and how the submitted proposal achieves them.
- **Architectural:** The report should demonstrate the cultural (intellectual and artistic contribution), social (community contribution and impact), and environmental (durability and sustainability) value of the project:
 - **Theme** — Excellent understanding of sustainability and carbon reduction goals and how the proposal achieves them.
 - **Creativity** — Design has artistic value of form, texture, design, materials used and sound creative and intellectual motivation.
 - **Impact** — Demonstrates exceptional benefit to the user and/or community.
 - **Usability in Design** — Demonstrates that the functionality of the design carries out the tasks envisaged for it, to its efficiency, practical utility and value to the end user.
 - **Environmental Value** — Clearly demonstrates durability and sustainability of project. Proposals should include a material schedule (describing each material's durability, recyclability and reuse, and critical dimensions). Proposals should demonstrate a metric measuring the embodied carbon of the mixture and design, explain the selection of materials and design in regard to the environmental impact. Present in a tabular format the total carbon emissions for the three stages (1) manufacturing including all raw materials, (2) transportation and (3) installation.
- **Engineering:** The report should clearly describe the approach to structural analysis, design assumptions, followed by a discussion on the loading scenarios, material factors, design calculations and the final design. Note that if a computer program is used for analysis and or design, some hand calculations should also be provided to support the program output. The final design should meet the requirements of the concrete design standard CSA A23.3.
 - **Materials** — A good rationale is provided on the selection of materials and the impact on the efficiency of the design, and potential environmental impact. The main structural design must focus on precast concrete elements and fabrication, however small decorative accents to the project from other materials may be added.
 - **Structural Analysis** — Concise discussion on the structural analysis of the individual components and of the assembly.
 - **Design Approach** — The design approach is reasonable, and assumptions made are justified and the final design is safe, innovative, efficient and comfortable.

- o **Design Calculations** — Comprehensive information provided on the design calculations, assumptions, load combinations and factors, safety and stability, and efficient use of materials while providing reasonable safety factors.
- o **Constructability** — The final design is safe, buildable, and practical solutions are provided for the fabrication process including the formwork, casting, lifting, transporting and assembly onsite.
- o **Feasibility** — Consideration of overall project costs when designing and potentially building the bench. This includes approximate costs for raw materials, manufacturing, transportation, site preparation and installation. The local precast concrete producer can assist with providing estimated costs.

Review from a Supervisor

One supervisor in architecture and one in engineering/technology will need to review the and validate the information. Please include the supervisor's name, department and contact information in the written report.

Selection Process

- The jury will consist of an Architect, Design Engineer, Precast Concrete Producer, and a member of the CPCI Staff.
- The Jury panel will select 3 winning projects and may select honourable mentions.



Image of the winning bench of the 2024-2025 Bench Design Contest (Toronto Metropolitan University)



Image of the winning bench of the 2025-2026 Bench Design Contest (Western University and Fanshawe College)

2026-2027 PRECAST CONCRETE STUDENT DESIGN COMPETITION

Awards

FIRST

- \$2,500 (CAD) and
- Opportunity to present at the 2027 Canadian Precast Concrete Convention (virtual or in person depending on location).
- Published in CPCI Imagineering Magazine, the CPCI Design and Building Express eNewsletter and shared on CPCI's social media channels.

SECOND

- \$1,500 (CAD) and
- Published in CPCI Imagineering Magazine, the CPCI Design and Building Express eNewsletter and shared on CPCI's social media channels.

THIRD

- \$1,000 (CAD) and
- Published in CPCI Imagineering Magazine, the CPCI Design and Building Express eNewsletter and shared on CPCI's social media channels.

HONOURABLE MENTION(S)

- Shared through CPCI's communication channels.

Fabrication and Installation (For the Winning Projects Only)

Depending on the location and the producers in the area, the winning team may be invited to fabricate their design project and the second and third place teams will have the option to build their bench as well. The teams will be paired with a local CPCI producer member to fabricate their bench.

Location of the Wellness Bench is the choice of the team. The proposed location must be publicly accessible and should be pre-approved by the local jurisdictional authority (ie. University, city, etc.).

COMPETITION SCHEDULE

December 11, 2026	Registration deadline
February 26, 2027	Submission Deadline: Posters and report submitted to CPCI
March 2027	Presentations to the jury panel (exact dates TBD)
April 2027	Announcement of the winners
October 2027	The team that places first will be invited to present at the CPCI Canadian Precast Concrete Convention (in person or virtually depending on location)

EVALUATION CRITERIA

The following criteria form a basis for evaluation, supported by the architectural, engineering, and construction expertise of the jury. Each member of the jury is committed to fair and equitable review of all submissions.

CRITERIA	SCORE
Poster	10
Project Statement	5
Virtual Presentation	20
Architectural	
Theme	5
Creativity	5
Impact	5
Usability in Design	5
Environmental Value	10
Engineering	
Materials & Design Approach	5
Structural Analysis	5
Design Calculations	10
Constructability	10
Feasibility	5
TOTAL	100

2026-2027

PRECAST CONCRETE

STUDENT DESIGN

CPCI and CPCI industry members can assist your school Student Design Competition entry and can provide additional information to professors and students who wish to learn more about this exciting initiative.

For more information on the precast concrete Student Design Competition and to find out how you can get involved, please contact us by email at info@cpci.ca or by phone at **613.232.2619**.