



2026 CFSEI STUDENT COMPETITION

COMPETITION PROCEDURE

NOTE: STUDENT MENTORS WILL BE ASSIGNED ONCE APPLICATION IS RECEIVED

Learning Objectives

- Gain exposure to designing with cold-formed steel (CFS)
- Communicate designs through technical drawings and reports
- Utilize CFS to address real-world societal problems
- Foster excitement about CFS design

Problem Statement

In recent years, California has faced increasingly devastating wildfires, displacing thousands of families and creating an urgent need for rapid, affordable, and sustainable housing solutions. Long Beach, while not directly in wildfire zones, has become a potential hub for transitional housing due to its infrastructure, community resources, and proximity to affected areas.

Your challenge is to design a cost-effective, and dignified tiny home that can be mass-produced and deployed quickly to support families displaced by wildfires. These homes will serve as transitional housing, offering safety, comfort, and a sense of stability during a time of crisis.

Design Considerations & Challenges

- All designs must use cold-formed steel framing as the primary structural system. This material is chosen for its durability, fire resistance, recyclability, and ease of prefabrication.
- Maximize livability within a footprint of 400 square feet or less (out to out).
- Exterior finish to be corrugated metal panels.
- Design to include shell (walls and roof), 2 doors, 3 windows, floor if desired and lateral system as a (minimum).
- House to accommodate a family of 4. (2 adults, 2 kids)
- Support members and attachment clips must all use the material cold-formed steel. Students can use proprietary products provided by manufacturers such as clips and members, or they can design custom shapes or clips of their own.
- Foundation to be a delegated design (not to be included in competition)

Deliverables

- 1) Email 'Intent to Participate' document (last page) to info@cfsei.org.
Deadline for submitting: November 1st, 2025.
Access to CFS Designer software will be provided & mentors assigned as soon as possible.
- 2) Competition Submission. Send to info@cfsei.org no later than January 31st, 2026.
 - a. A design narrative indicating design criteria and loads used for design.
 - b. Submit fully dimensioned 2D shop drawings in PDF format to include
 - i. Floor/Roof plans showing members and connections
 - ii. wall sections and/or opening elevations showing members and connections
 - iii. Connection details
 - c. Submit calculation package in PDF format showing complete design. Calculations should illustrate load path for both gravity and lateral systems. Design software such as RISA/SAP/RSG, etc. may be used. One hand calculation minimum must be done utilizing the information provided in SFIA/SSMA manuals, AISI excerpts, and CFSEI tech notes.

Student Membership

Students are encouraged to obtain a free complimentary CFSEI membership to gain access to a wide range of benefits uniquely tailored for cold-formed steel engineers. To learn more about these benefits, please visit the link below.

- <https://www.cfsei.org/membership>

Reference Documents

- CFSEI students only section
<https://www.cfsei.org/students-only>
- Introduction to Cold-Formed Steel Standards:
<https://www.cfsei.org/assets/docs/technotes/tn-beginners/TechNote%20-%20B004-20-Introduction-to-framing-standards-WEBFINAL.pdf>
- AISI Standards
<https://www.cfsei.org/free-aisi-standards>
- CFSEI Tech Notes
<https://www.cfsei.org/technical-notes>
- Design Guides
<https://www.cfsei.org/-design-guides>
- Other References
<https://www.steelframing.org/>
<https://ssma.com/>

Judging Criteria

- Technical correctness
- Constructability
- Presentation
- Attention to detail

Awards

- **1st place** student will receive a \$2,000 USD monetary award, an award plaque and 2026 CFSEI Expo Registration
- **2nd place** student will receive a \$1,500 USD monetary award, an award plaque and 2026 CFSEI Expo Registration
- **3rd place** student will receive a \$1,000 USD monetary award, an award plaque and 2026 CFSEI Expo Registration

Notes:

- a. Winner will have the option to present their project at the CFSEI Expo in Long Beach
- b. We encourage applicants to apply for the stipend program if they'd like to attend the Expo.
- c. Awards are intended to be granted for 1st, 2nd, and 3rd place, but all three are not required to be given if submissions do not meet an acceptable standard.