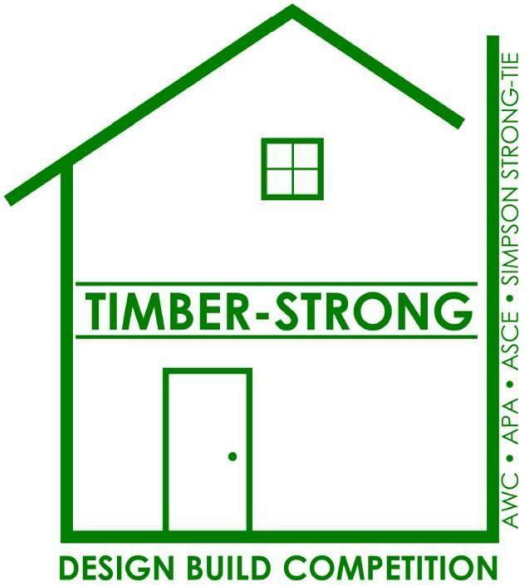
ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

REVISION 1 – NOVEMBER 16, 2026

Updates are shown in red

TIMBER-STRONG DESIGN BUILD[SM]
2027 RULES



This document, which is available at Student Conferences, Symposia & Competitions page of the ASCE Website, describes the Timber-Strong Design Build[SM] Competition and states the 2027 rules for the student symposia. **Requests for Information (RFI) and Clarifications, which include any revisions to the rules, are published on the ASCE website prior to the competition and do not appear in this document although they are formal addenda to the rules.**
See SECTION 4.2.1 REQUEST FOR INFORMATION (RFI) for details on how to submit questions.

CONTENTS

1.0 EVENT DESCRIPTION 5
2.0 OBJECTIVE 5
3.0 AWARDS AND RECOGNITION 5
4.0 GENERAL RULES AND ELIGIBILITY REQUIREMENTS 6
4.1 RULE CHANGES AND PRECEDENCE 6
4.2 GENERAL INFORMATION 6
4.3 PARTICIPATION AND ELIGIBILITY REQUIREMENTS 7
4.4 ETHICS AND REQUIRED CONDUCT 9
4.5 SAFETY 9
4.6 SCHEDULE, DEADLINES, AND SUBMISSIONS 10
5.0 BUILDING PROJECT 12
5.1 GENERAL 12
5.2 STRUCTURAL DESIGN 15
5.3 SUSTAINABLE DESIGN 22
5.4 BUILDING MATERIALS AND SAFETY GEAR 23
5.5 BUDGET 24
5.6 REPORT 24
6.0 PRESENTATION 25
7.0 ELECTRONIC FILES 25
8.0 BUILDING INFORMATION MODEL (BIM) 26
9.0 CONSTRUCTION & VISUAL AID 26
9.1 GENERAL 26
9.2 VISUAL AID 28
9.3 SITE REQUIREMENTS AND CONSTRAINTS 29
9.4 CONSTRUCTION CONSTRAINTS 29

9.5 BUILDING REMOVAL AND CLEAN UP 31
10.0 SCORING 31
10.1 DESIGN STRENGTH AND DURABILITY ANALYSIS: 82 POINTS 32
10.2 SUSTAINABLE DESIGN: 18 POINTS 33
10.3 BUDGET: 20 POINTS 33
10.4 REPORT REQUIREMENTS: 10 POINTS 33
10.5 CREATIVITY/AESTHETICS: 20 POINTS 33
10.6 BIM: 70 POINTS 33
10.7 CONSTRUCTION DRAWINGS: 50 POINTS 34
10.8 PRESENTATION: 20 POINTS 34
10.9 VISUAL AID REQUIREMENTS: 10 POINTS 34
10.10 CONSTRUCTION: 160 POINTS 34
10.11 DESIGN BUILD INNOVATION: 40 POINTS 34
10.12 ADDITIONAL POSSIBLE POINT DEDUCTIONS AND/OR DISQUALIFICATION 35
11.0 ADDITIONAL INFORMATION 36
APPENDIX A TEAM FORMS 37
APPENDIX B REPORT TABLE OF CONTENTS 40
APPENDIX C ELIGIBILITY FOR STUDENT SYMPOSIUM COMPETITIONS 41
APPENDIX D CERBERUS UPLOAD GUIDANCE 42
APPENDIX E COMPETITION WINNERS 2026 AND PRIOR 44

WELCOME

The American Society of Civil Engineers (ASCE) and sponsors American Wood Council (AWC), Simpson Strong-Tie Company Inc. (SST), and APA – The Engineered Wood Association (APA) support and encourage a fully inclusive culture that celebrates individual uniqueness, engenders a sense of belonging, and promotes equitable opportunity for all people to participate in the Timber-Strong Design Build℠ (TSDB℠) Competition. (See ASCE Policy statement 417 - Justice, equity, diversity, and inclusion.) Participation should be inclusive, open, and fair to all interested and eligible students. Welcome!

Examples from 2022 TSDB℠ Competition







Timber Design Resources:

LOAD PATH

Publications

Introduction to Lateral Design (APA)

Diaphragms and Shear Walls (APA)

Design Concepts for Building in High Wind and Seismic Zones (APA)

Videos

Lateral Load Path Basics: Tracing a wind load through a wood framed structure (APA)

BUILDING CODE

Publications

2024 National Design Specification (NDS) for Wood Construction (AWC)

2021 Special Design Provisions for Wind and Seismic (AWC)

ASCE/SEI 7-22 Minimum Design Loads and Associated Criteria for Buildings and Other Structures

Force Transfer Around Opening Shear Walls (APA)

Videos

Shear Exhilaration! Wood Shear Wall and Diaphragm Design per the 2021 IBC (APA)

Shear Wall Selection for Wood-Framed Buildings (APA)

DETAILING & CONNECTIONS

Publications

APA System Report 101: Design for Combined Shear and Uplift from Wind (APA)

Data File: Lateral Load Connections for Low-Slope Roof Diaphragms (APA)

Data File: Roof Sheathing Fastening Schedules for Wind Uplift (APA)

Anchorage Requirements for Wood Frame Shear Walls (Structure Magazine)

Videos

Connection Design Solutions for Wood-Frame Structures (APA)

OTHER RESOURCES

APA Resource Library

TIMBER-STRONG DESIGN BUILD℠ COMPETITION

1.0 EVENT DESCRIPTION

This student competition is based on creating a sustainable, 2-story light-framed wood building (a.k.a. project). While other natural resources are rapidly depleting, wood is the only building material that grows naturally, is 100% renewable, and outperforms other building materials in overall carbon footprint reduction. As a result, AWC, SST, APA, and ASCE are seeking student teams to design and build an artistically creative building that is sustainable, aesthetically pleasing and structurally durable. In the interest of sustainability, the projects must be deconstructed/disassembled and include a written plan for donation and/or repurposing at the end of the competition.

2.0 OBJECTIVE

The 2027 Timber-Strong Design Build℠ (TSDB) Competition enables students to gain experience in performing crucial aspects of common structural engineering design and practice. Participating students will learn about the processes involved in professionally designing and proposing a project bid, which must be unique and not a replication of a previous year's design. Students will also gain exposure to the management and building practices used in construction environments. Through the performance of analysis, production of a building information model, preparation of a project bid, production of construction documents, and management of the construction process, each team is expected to act as a design-build construction firm while competing in a friendly environment. The goal of this competition is to provide unique insights and hands-on experience for the next generation of structural engineers involved in sustainable design and construction.

3.0 AWARDS AND RECOGNITION

The winners of the Timber-Strong Design Build℠ Competition shall be determined by compiling a team's total number of points from the report, BIM model, construction, presentation, and creativity portions of the competition (see SECTION 10.0).

A BIM award will be awarded to the team with the top BIM score. All teams (whether or not participating in Build Day) are eligible for this award.

At the Head Judge's discretion, a Best in Show may be awarded to a team based on rubric score and notable characteristics.

At the Head Judge's discretion, an Honorable Mention may be awarded to a team that may not have achieved the highest overall points but achieved excellence in a particular area/characteristic (ex. most accurate deflection, best load path, best quality build, safety/site cleanliness, lowest waste/most sustainable, most likely to survive earthquake/windstorm, etc.).

4.0 GENERAL RULES AND ELIGIBILITY REQUIREMENTS

4.1 RULE CHANGES AND PRECEDENCE

The Rules and Regulations (Rules) of the Timber-Strong Design Build[SM] Competition are updated each year. **Teams are strongly encouraged to read this document carefully and disregard previous editions from previous competition years.** Teams should not consider items such as rulings and interpretations made by judges in previous competition years and answers provided in previous interpretations of rules, as setting precedence for this year's competition.

Listed below is a summary of major changes from the 2026 Rules. This list may not capture all changes and teams are responsible for reading the rules.

- A future 500lb point load must be accounted for on the roof
- The visual aid was moved to the Phase 2 submittal
- Geometry limitations were added to clarify structural requirements
- Additional budget requirement for labor cost clarified
- Sustainability language clarified
- Innovation & build time points were clarified
- Rules for shoring installation were clarified
- Grounds for disqualification updated
- Updated safety measures

4.2 GENERAL INFORMATION

To learn which Student Symposia are hosting this competition, visit the ASCE website https://www.asce.org/communities/student-members/conferences. Visit the Student Symposium hosts' websites (links are on the ASCE Student Symposia webpage) for registration information.

Each competing student chapter is invited to structurally design and model a light-framed wood structure. Through the design process, teams are required to create a preliminary design and a final bid report.

Each team is required to model the wood structure and, if participating in Build Day (see SECTION 10.10), construct the wood structure which was designed in the team report. Each team will present on their project (see SECTION 6.0).

4.2.1 REQUEST FOR INFORMATION (RFI)

Requests for information (RFI) must be submitted through the online 2027 Timber-Strong Design Build RFI Form. Clarifications will be posted on the Timber-Strong Design Build Competition

Collaborate Site every other Friday starting September 25, 2026, until February 26, 2027 (14 calendar days prior to the first symposium's start date). Each post will address the questions received from the previous two weeks through the Wednesday before 11:59 PM Eastern. **The cutoff date for submitting an RFI is February 19, 2027, at 11:59 p.m. Eastern (21 calendar days prior to the first symposium's scheduled start date). It is the responsibility of each participating team to regularly check the Collaborate Site for updates. RFI response posts shall be considered part of the rules.**

4.3 PARTICIPATION AND ELIGIBILITY REQUIREMENTS

4.3.1 TEAM MEMBER REQUIREMENTS

Team members must be undergraduate students, enrolled during all or part of the current competition academic year, members of an ASCE Student Chapter in good standing, registered participants of the student symposium, and Society Student Members of ASCE. (Society student membership is free; be sure to join.)

Graduate students are encouraged to serve as advisors to provide guidance but shall not participate in the competition or be involved in a role similar to that of an undergraduate team member.

4.3.2 TEAM REQUIREMENTS

It is an expectation that teams will reflect diversity, foster an inclusive culture, and treat everyone with dignity and respect.

Only one team per ASCE Student Chapter may compete in the competition. A student chapter may compete in only one ASCE Student Symposium per year. Each team must designate at least one team captain. Conference assignments and student symposium hosts are listed here.

Official Guest Teams

ASCE Student Chapters hosting student symposia may invite Official Guest teams, which are teams from Region 10 that have an official ASCE Student Chapter not yet assigned to any Student Conference. Official Guest teams may compete in only one student symposium per year and are eligible to place and receive awards at the student symposium competition (if they meet the other requirements, including eligibility requirements). ASCE Student Programs shall be notified by the student symposium host of an Official Guest team prior to the start of the student symposium via e-mail to student@asce.org.

Exhibition Teams

A university group that is in the establishment phase of becoming an ASCE Student Chapter may request to compete at their potential future ASCE Student Symposium as an exhibition team. If the student symposium host grants permission, the exhibition team may compete.

An ASCE Student Chapter team wanting to enter a competition that is NOT being hosted at their assigned student symposium may request to compete at another ASCE Student Symposium as an exhibition team. If the student symposium host grants permission, the exhibition team may compete.

An ASCE Student Chapter team wanting to enter a competition that is being hosted at their assigned student symposium but has circumstances that prevent participation at their assigned student symposium may contact ASCE Student Programs (student@asce.org) with a description of the circumstances to explore options.

The exhibition team will be scored but shall not be ranked or win awards at the student symposium competition.

Build Team Requirements

All student chapters must be registered for the ASCE Student Symposium. There is no limit to the number of students who participate in the development of the report, building information model, and the visual aid, however, only 4-6 members should be designated as builders.
Additional team requirements:

a. If participating in the Build Day, 4-6 members shall be designated as “builders”.
b. One builder of the team must be identified as the build captain.
c. The team must have at least one freshman or sophomore student.
d. The team **MUST** have at least one faculty advisor.
e. Teams are encouraged (not required) to have a practicing structural engineer to mentor the team.

4.3.3 STUDENT CHAPTER ELIGIBILITY

Eligibility criteria for the Student Symposium Competitions are shown in APPENDIX C.

4.3.4 INTENT AND ELIGIBILITY ACKNOWLEDGEMENT FORM

Teams must submit online Intent and Eligibility Acknowledgement Forms, no later than **5:00 p.m. Eastern Time (ET) on November 2, 2026.**

By completing this form, a student chapter states:

- Their intent to have a team participate in the competition at their assigned student symposium.

- Their acknowledgement of the eligibility requirements for student symposium competition participation (see APPENDIX C).

The form must be completed and separately submitted by the:

1) Team Captain;
2) ASCE Student Chapter Faculty Advisor; and
3) Competition Team Faculty Advisor.

All three parties will use the same form to submit. If the ASCE Student Chapter Faculty Advisor and the Competition Team Faculty Advisor are the same person, the form has a field to indicate as such and only one faculty advisor submission is required.

Teams can verify that all three parties have submitted an Intent and Eligibility Acknowledgement Form by checking the Intent Form Status Report in Cerberus.

4.4 ETHICS AND REQUIRED CONDUCT

This competition is to be conducted with the highest regard for ethical responsibility per ASCE's Code of Ethics. All members of ASCE, regardless of their membership grade or job description, commit to all the ethical responsibilities in this Code. All ASCE members should make themselves familiar with ASCE's Code of Ethics.

All participants shall act professionally and respectfully at all times. Failure to act appropriately can result in sanctions, disqualifications, and loss of invitations to future symposia competitions or society-wide competitions. The inappropriate use of language, alcohol, or materials, uncooperativeness, and general unprofessional or unethical behavior will not be tolerated.

4.5 SAFETY

Safety is the highest priority. Behaviors that increase the risk of or cause personal injury will not be tolerated. Competition safety officials may use their own discretion on determining a hazardous condition and provide suggestions for correcting the issue. If a team member cannot compete safely (due to a lack of properly fitting PPE, ladder training, injury, etc.), they will be disqualified. The remaining team members may continue with the competition if the number of team members does not drop below four builders. Competition safety officials may take action, including withdrawal of a team from competition, for safety violations if they are not corrected once brought to the attention of the team. Judges, student symposium hosts and Safety Officers, and competition safety officials are all empowered to halt and prohibit any activity that they deem hazardous. If the structure being built is deemed by competition safety officials to be unsafe to participants, judges, or spectators, it must be withdrawn from the competition. Judges are empowered to pause the build to verify safe constructability and process.

All participants are responsible for complying with all campus/venue protocols and procedures, including those deemed necessary for public health purposes.

Hosts may coordinate with ASCE to provide and activate virtual competition provisions if determined necessary for the safety of participants.

If there is a thunderstorm, all outdoor activities shall cease and may not resume until at least 30 minutes have passed since the last observed occurrence of thunder or lightning.

Students shall practice safe fabrication procedures and procure appropriate instruction and supervision (see SECTION 9.0). General construction safety standards for activities during this competition shall follow the standards set forth in OSHA Regulation Standards Number 1926. The following are the URL addresses to the OSHA Standards 1926:
https://www.osha.gov/laws-regs/regulations/standardnumber/1926
Student teams are solely responsible for following these safety standards. (See SECTION 5.4).

Builders must adjust to the site conditions and weather during the construction. At all times the structure shall be stable and self-supporting such that a builder only provides bracing stability of a member or panel until the member or panel is properly attached and secured according to the construction drawings and safe construction practices. Ladder(s) are required with sufficient height so that the roof can be installed without a team member on the top two steps of the ladder. Judges are empowered to pause the build to verify safe construction and construction process per site conditions.

Each Builder will need to take a free "Ladder Safety Training" course (https://www.laddersafetytraining.org/) for all ladder types the team intends to use during construction and upload the certificate of completion to their team's unique ASCE Cerberus ftp server submission link (see SECTION 4.6). A folder that is separate from the Phase submittals shall be created and titled "Ladder Safety Training Certificates" for all certificates. This should be completed by the Phase 1 deadline and align with the designated builders in the Phase 1 report. If an alternate builder is required on Build Day, that builder's ladder safety training must be completed and uploaded to the folder one week prior to Build Day, and a hard copy must be available on site during Build Day.

All ladder types in use shall be supported at the base by an additional builder. Judges will pause the timer and verify the structure is stable prior to using the structure as a platform for construction.

For safety gear requirements see SECTION 5.4.3.

4.6 SCHEDULE, DEADLINES, AND SUBMISSIONS

The following is a list of important dates related to the overall competition schedule, including deadlines for applicable submissions. Teams should consider this as only a partial list of dates. All times are midnight (11:59 PM) Eastern. Student symposium specific information is provided in the host school mailers and it is the responsibility of the student chapter to distribute.

ASCE is using its Cerberus ftp server as a submission platform. All competition deliverables must be submitted on this platform. (See APPENDIX D for Cerberus Upload Guidance.) Submissions outside of this platform will be considered non-responsive and will not be considered.

ASCE will provide each team captain and faculty advisor with a secure submission link for the Cerberus ftp server in December 2026. All electronic files will be uploaded here.

Mandatory Task Deadlines	**Due Date**
Intent and Eligibility Acknowledgement Form (See SECTION 4.3.4)	2 November 2026
All individual member ladder safety training certificates and waiver forms (to be provided by ASCE)	19 February 2027
Electronic files **Phase 1A** upload to ASCE's Cerberus ftp server (See SECTION 7.0)	
Electronic files **Phase 1B** upload to ASCE's Cerberus ftp server (See SECTION 7.0)	
Electronic file **Phase 2** Presentation upload to ASCE's Cerberus ftp server (See SECTION 6.0)	5 March 2027
Final RFI's uploaded to ASCE's Cerberus ftp server	19 February 2027
Final Material Request Form Due	45 calendar days prior to Symposium start date
All Change Orders and final submittals upload to ASCE's Cerberus ftp server (See SECTION 5.2.3)	7 calendar days prior to Symposium start date of the student competition or 5 March 2027 (whichever is later)
Team Captain's meeting	Day before Build Day of the student symposium competition (or as specified by host)
Construction of Structure * Does not apply in the event of a virtual competition	Build Day of the student symposium competition
Electronic file **Phase 3** upload to ASCE's Cerberus ftp server (See SECTION 7.0) * Does not apply in the event of a virtual competition	Build Day of the student symposium competition

All Team Captains shall attend the Team Captain's meeting where they will receive an overview of Build Day, and they will be able to ask any last-minute questions.

5.0 BUILDING PROJECT

5.1 GENERAL

All proposed and modeled BIM structures and constructed structures shall be a 2-story structure with a maximum Ground Level Floor Plan dimension of 6'-0" x 8'-0" and a maximum Second Level Floor Plan dimension of 7'-4" x 8'-0", which is measured to the outside face of the wood stud walls. The area of the Ground Level Floor Plan must be at least 43 square feet. Wall sheathing, roof sheathing, roof eaves, and **the cantilever floor beam shall extend outside the footprint dimension (see Figure 1 and Figure 2**). The final deliverables shall contain the following:

1. Design and model a structurally efficient building system of 2x wood light-framed construction.
2. The two-story structure shall include the following:
    a. Roof system: The slope of the roof shall be determined by the team with no minimum requirement. The overall height of the structure shall not exceed 12 feet, measured from the highest point of the roof (ex. ridge beam) to the bottom of the structure. Roof overhangs can extend up to 18 inches past the 2nd story exterior wall, but are limited to 24 inches past the 1st story exterior wall on the cantilevered side.
    b. 2nd floor cantilevered system: A minimum of 5'-0" width of the 2nd floor system shall cantilever 16-inches (1'-4") in at least one direction. The 2nd story wall shall be supported on the cantilevered portion of the floor framing, creating a vertical discontinuity Type 4 (See ASCE7-22 Table 12.3-2) between the 2nd story wall and the 1st story wall (Reference Figure 1 and Figure 2). This is not intended to be a balcony. Temporary shoring at the cantilevered floor system is required prior to completion of the 2nd floor build and shall remain until the completion of the structure. The team shall remove the shoring after the structure is completed and before the final build timer stops. The shoring should not be present during display and cantilever loading; however, it must be reinstalled during deconstruction.
        i. Temporary shoring shall be a built or mechanical free-standing system or attached system to shore the structure without a builder holding or stabilizing the structure or the shoring during its usage. A builder supporting the structure shall not qualify as shoring at any time.
    c. 2nd floor cantilevered beam: A floor beam that cantilevers 4'-1" outside of the footprint to support the applied point load. **The cantilevered floor beam may not occur on the same wall as a floor system cantilever.** This is an important stability consideration and can be grounds for disqualification if not followed. The top of the cantilevered beam shall be greater than 4'-3" and not exceed 6'-0" from the ground. **No counterweight other than the dead load of the structure is allowed to resist any overturning.** Prior to Build Day, exposed cantilever beam must be painted with high visibility paint or covered with high visibility wrap. The cantilever beam shall be mechanically connected to the structure during loading.
    d. 2nd floor framed opening: **one** opening in the floor measuring 2'-6" by 2'-6" clear.
    e. 2nd floor walls framed openings: minimum of **four** windows with one in each wall. The windows may be located anywhere on each wall.
    f. 1st floor walls framed openings: minimum of **three** windows with one in each wall and **one** door in a wall with no windows. The windows may be located anywhere on each wall.

NOTES:
1. CANTILEVER BEAM SHALL BE PLACED AT LEAST 12 INCHES (1'-0") AWAY FROM INSIDE FACE OF WALLS.
2. CANTILEVER BEAM SHALL BE MECHANICALLY CONNECTED TO THE STRUCTURE DURING LOADING.
3. WINDOW OPENING(S) ON GROUND FLOOR LEVEL 6'-0" MAX. WALL SHALL BE MAXIMUM 40.7% & MINIMUM 3.33% OF WALL SURFACE AREA. WINDOW OPENING(S) ON GROUND FLOOR LEVEL 8'-0" MAX. WALL SHALL BE MAXIMUM 45.5% & MINIMUM 2.08% OF WALL SURFACE AREA. SECOND FLOOR WINDOWS SHALL BE A MINIMUM OF 3.33% AND SHALL NOT EXCEED 3.5:1 SHEAR WALL ASPECT RATIO OF WALL SURFACE.
4. EACH WALL AT GROUND FLOOR LEVEL SHALL HAVE WINDOW(S) EXCEPT AT WALL WITH DOOR.
5. THERE SHALL BE AT LEAST ONE WINDOW OPENING ON EACH WALL OF THE SECOND FLOOR.
6. FRAMING SHALL BE 2X4 MINIMUM.
7. FRAMING FOR EACH FLOOR LEVEL IS PER TEAM AND SHALL NOT EXCEED 6" IN DEPTH.
8. MAX. DEPTH OF CANTILEVER BEAM SHALL NOT EXCEED 6".
9. TEMPORARY SHORING SHALL BE BUILT OR MECHANICAL, FREE-STANDING SYSTEM OR ATTACHED SYSTEM, TO SHORE THE 1'-4" OVERHANG DURING CONSTRUCTION OF THE SECOND FLOOR WITHOUT A BUILDER HOLDING OR STABILIZING THE STRUCTURE OR THE SHORING DURING ITS USAGE. THE SHORING SHALL BE USED DURING DECONSTRUCTION.
10. ALL MEASURED DIMENSIONS ON THE CONSTRUCTION SITE SHALL BE WITHIN 1/4" OF THOSE LABELED IN THE CONSTRUCTION DOCUMENTS.

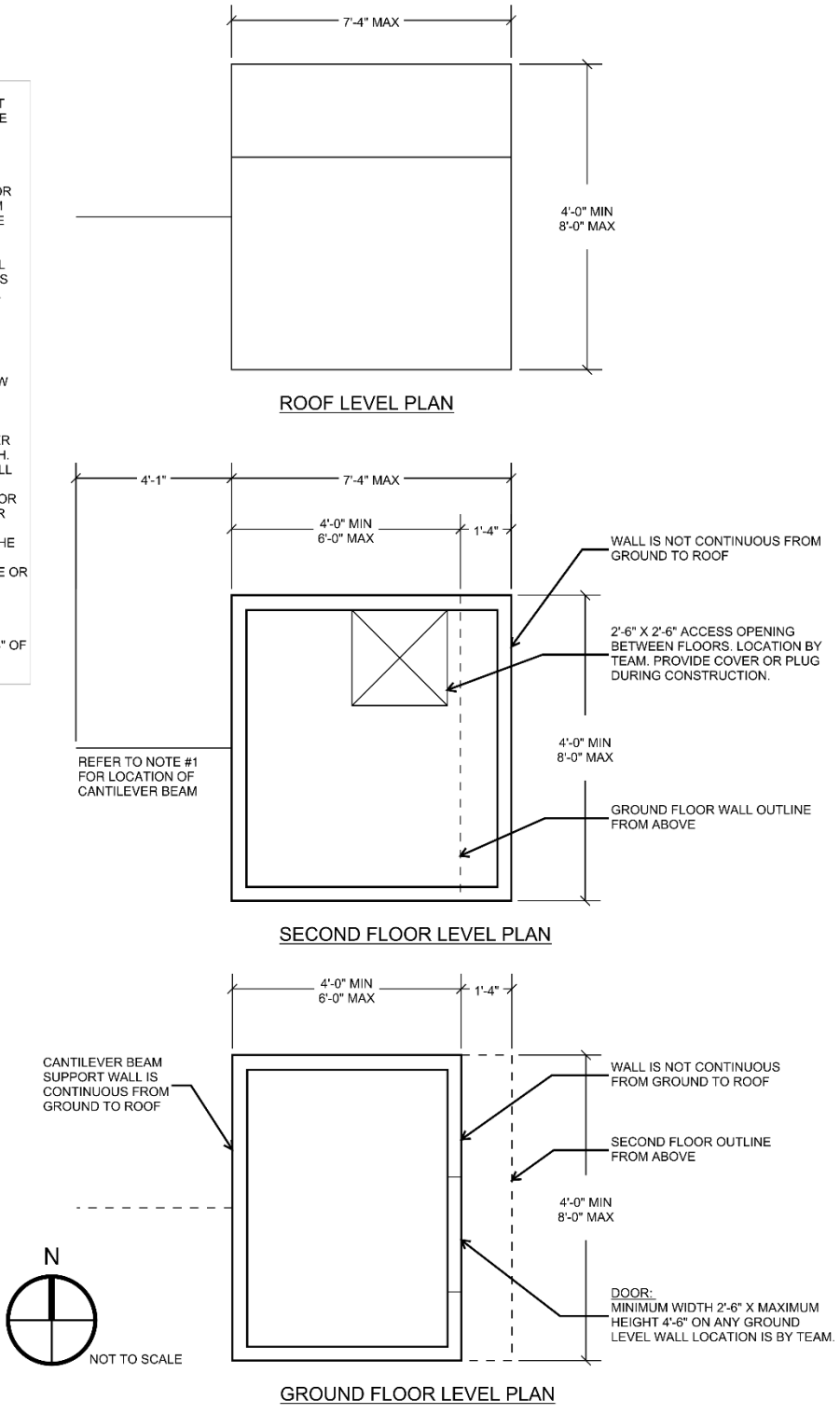
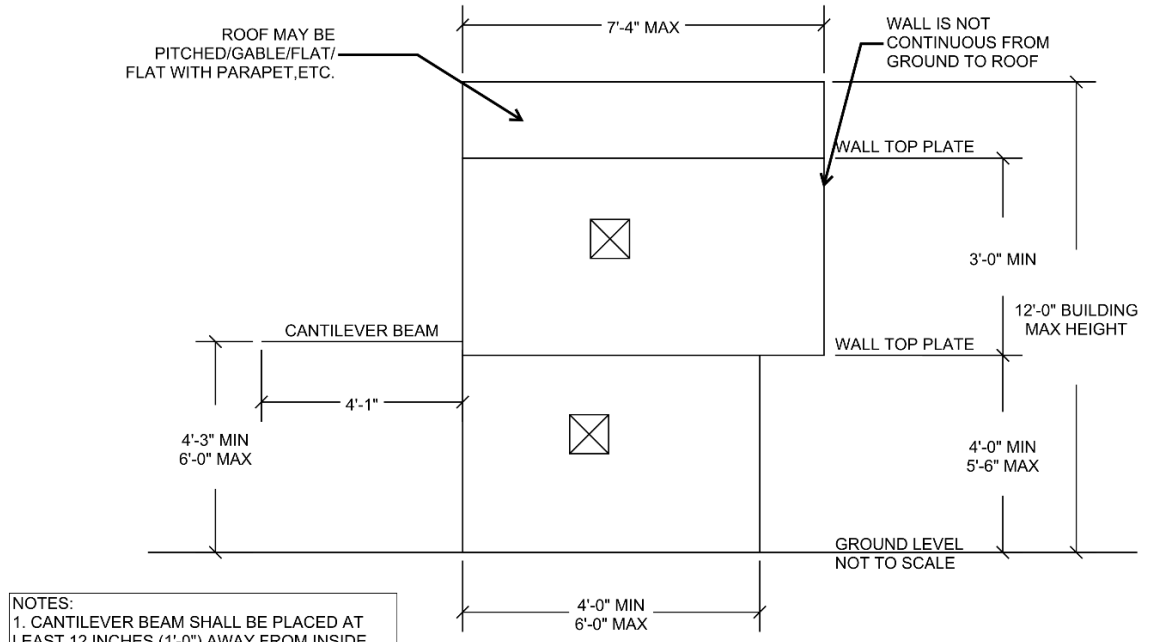
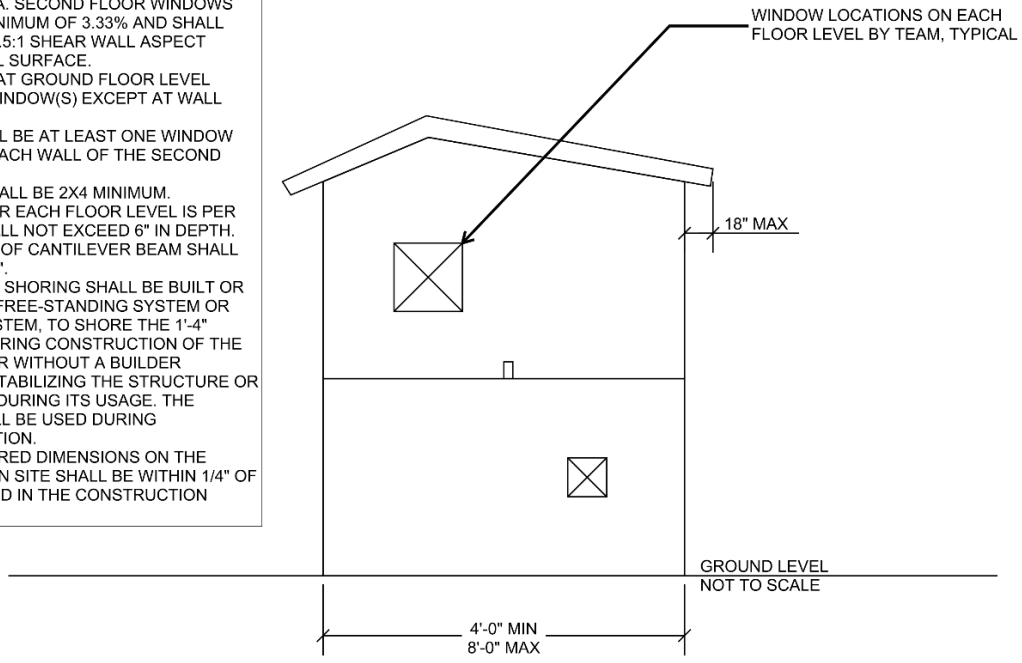


Figure 1: Example Plan Views



SOUTH ELEVATION

NOTES:
1. CANTILEVER BEAM SHALL BE PLACED AT LEAST 12 INCHES (1'-0") AWAY FROM INSIDE FACE OF WALLS.
2. CANTILEVER BEAM SHALL BE MECHANICALLY CONNECTED TO THE STRUCTURE DURING LOADING.
3. WINDOW OPENING(S) ON GROUND FLOOR LEVEL 6'-0" MAX. WALL SHALL BE MAXIMUM 40.7% & MINIMUM 3.33% OF WALL SURFACE AREA. WINDOW OPENING(S) ON GROUND FLOOR LEVEL 8'-0" MAX. WALL SHALL BE MAXIMUM 45.5% & MINIMUM 2.08% OF WALL SURFACE AREA. SECOND FLOOR WINDOWS SHALL BE A MINIMUM OF 3.33% AND SHALL NOT EXCEED 3.5:1 SHEAR WALL ASPECT RATIO OF WALL SURFACE.
4. EACH WALL AT GROUND FLOOR LEVEL SHALL HAVE WINDOW(S) EXCEPT AT WALL WITH DOOR.
5. THERE SHALL BE AT LEAST ONE WINDOW OPENING ON EACH WALL OF THE SECOND FLOOR.
6. FRAMING SHALL BE 2X4 MINIMUM.
7. FRAMING FOR EACH FLOOR LEVEL IS PER TEAM AND SHALL NOT EXCEED 6" IN DEPTH.
8. MAX. DEPTH OF CANTILEVER BEAM SHALL NOT EXCEED 6".
9. TEMPORARY SHORING SHALL BE BUILT OR MECHANICAL, FREE-STANDING SYSTEM OR ATTACHED SYSTEM, TO SHORE THE 1'-4" OVERHANG DURING CONSTRUCTION OF THE SECOND FLOOR WITHOUT A BUILDER HOLDING OR STABILIZING THE STRUCTURE OR THE SHORING DURING ITS USAGE. THE SHORING SHALL BE USED DURING DECONSTRUCTION.
10. ALL MEASURED DIMENSIONS ON THE CONSTRUCTION SITE SHALL BE WITHIN 1/4" OF THOSE LABELED IN THE CONSTRUCTION DOCUMENTS.



WEST ELEVATION

Figure 2: Example Building Elevations

5.2 STRUCTURAL DESIGN

Wood has been successfully used as a structural material for over 1300 years, and the construction industry has expanded the use of wood to high-rises under the 2021 International Building Code to up to 18 stories using mass timber construction. As a structural material that provides sustainability, strength, and resilience, each team will design the building per this section using wood products. The structural calculations shall be legible HAND calculations (non-computer analyzed or automated) on the structure (see Example in **Figure 1** and **Figure 2**). Examples of computer-generated calculations NOT accepted are those created in MathCAD, Enercalc, RISA, Excel, etc. Calculations written by hand in a digital note taking software like GoodNotes or OneNote are acceptable. All structural design will be done using the Allowable Stress Design (ASD) Method using the loading listed in this section (no additional factors need be applied) and load combinations per ASCE/SEI 7-22. All calculations for the design of all members and systems must be shown even for repetitive members and systems.

The design must include the following:

5.2.1 STRUCTURAL DURABILITY-GRAVITY DESIGN

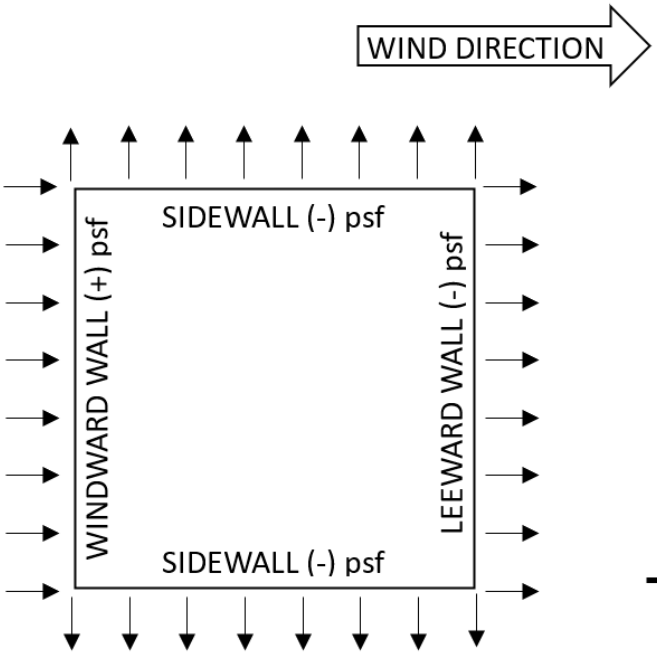
1. Vertical design loads
   Roof Dead Load = calculated self-weight
   Roof Live Load L_r= 20 psf
   Floor Dead Load = calculated self-weight
   Floor Live Load L= 50 psf
   Point load at the end of the cantilever floor beam 150 lbs. (Load Test Video)
   Wind vertical loads values in wind pressure tables
2. The future owner of your structure would like to add a decorative weather vane to the roof. They have asked that you account for a future 500 lb point load located at least 2 feet from any wall. The load can be classified as a dead load and is assumed to apply over a 3" x 3" area. Please mark the location of your point load on the underside of the roof in high visibility paint or tape. Wind and additional overturning load of the future weather vane is negligible.
   a. Calculate the required roof member to support the point load.
   b. Determine a load path of the point load through the walls to the foundation
   c. Please keep in mind, students are NOT encouraged to actually add a weather vane or any object to their roof above 30 lbs. This is a future load only. Hint: this also means this load should not be used in your stability check in the cantilever calculations.
3. Design a minimum of one stud and one joist (worst-case) for axial, shear, bending forces, and deflection. While in professional practice deflections are limited by the building code, there is no serviceability minimum for this competition.
4. Design cantilever floor beam for shear and bending.
5. Deflection of cantilever floor beam
   a. Calculate the predicted deflection at the location of the test load assuming all applicable adjustment factors are equal to 1.0. Predicted deflection shall be calculated to the 1/100th decimal place assuming the beam is loaded at a

distance of 3’-0”, 3’-6” and 4’-0” from the outside face of the exterior wall stud.

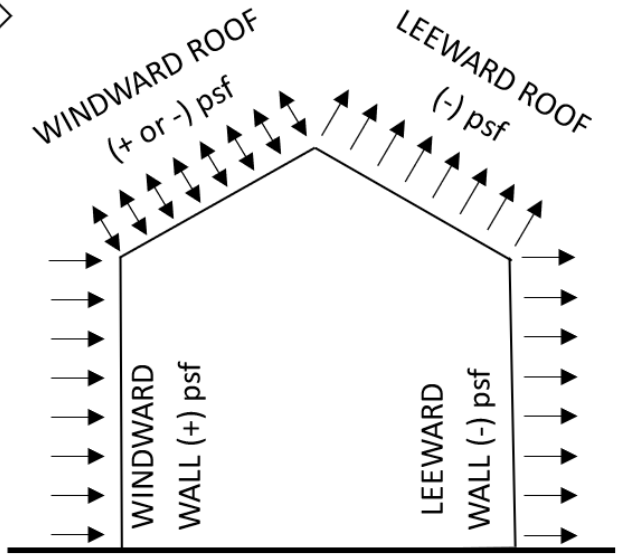
b. The designed beam predicted deflection, when the point load is applied at 3’-6” from the exterior wall, must be at least 0.5 inches and not greater than 1 inch.
c. Calculate the entire self-weight of the structure.
d. Demonstrate through calculations that cantilever floor beam may be safely loaded between 3’-0” from the exterior wall and the end of the cantilevered end without anchors or holdowns attaching the structure to the ground.

5.2.2 STRUCTURAL DURABILITY- WIND DESIGN

1. Lateral Design Loads - the structure shall be designed and analyzed to resist wind loads based on allowable stress design (ASD) as follows:
    a. Lateral wind pressures are provided below. You will determine the lateral roof and floor diaphragm loads in both building directions.
    b. Roof wind pressures shall be applied to the bottom surface of roof overhangs and combined with the same top surface wind uplift pressure applied to the entire area of the roof. For this competition, no dead load is allowed to resist uplift pressures.



GENERIC PLAN VIEW



GENERIC ELEVATION VIEW
(HIP OR GABLE ROOF)

MAIN WIND FORCE RESISTING SYSTEM PRESSURES ASD (entire system)		
Surface	External with (+ Internal Pressure)	External with (- Internal Pressure)
Windward Wall	+17 psf	+29 psf
Leeward Wall	-20 psf	-14 psf
Sidewall	-26 psf	-14 psf
Windward Roof (+ external)	-12 psf	+2 psf
Windward Roof (- external) and Leeward Roof	-42 psf	-30 psf
For a MONOSLOPE Roof, the entire roof surface is either a windward or leeward roof surface. For a FLAT Roof, the entire roof surface is a windward (- external pressure) roof surface		

COMPONENT & CLADDING PRESSURES (individual member)		
Surface	External with (+ Internal Pressure)	External with (- Internal Pressure)
Roof (C&C Zone 3) Negative Pressure	-75 psf	-3 psf
Roof (C&C Zone 3) Positive Pressure	1 psf	13 psf
Wall (C&C Zone 5) Negative Pressure	-38 psf	-2 psf
Wall (C&C Zone 5) Positive Pressure	1 psf	30 psf

The provided surface pressures are based on ASCE 7-22 and have been adjusted for Allowable Stress Design. No modification of the pressures is required. The 0.6W, in ASD Load Combinations, is equal to the values provided. Certain assumptions have been made when determining these values to accommodate the creativity of your designs. Generalized roof surface pressures are provided to be used with your particular roof shape. Based on the size of the structure only Component & Cladding values for roof zone 3 and wall zone 5 are provided and are to be used for all respective component designs.

Main Wind Force Resisting System Pressures are used to determine the sliding, overturning, and uplift of the entire structure. Component & Cladding Pressures are the maximum design pressures on an individual component, like a stud or roof joist, based on its location in the exterior envelope of the structure.

2. Lateral Design – the design shall include the following:
    a. Wind Design:
        i. Roof diaphragm design (in-plane shear only) both directions including sheathing, chords, and collectors.
        ii. Floor diaphragm design (in-plane shear only) both directions including sheathing, chords, and collectors.
        iii. Shear wall design (in-plane shear and overturning)
        iv. Anchorage to the foundation that includes anchor bolt and SST holdowns to resist in-plane shear and overturning.
        v. Factor of Safety (F.S.) for the diaphragm and shear walls (ratios of ASD unit shear capacity/ASD demand). Teams shall provide calculations to the 1/100th decimal place. Calculations shall include F.S. for each of the diaphragms and the shear walls. The calculations shall provide the average F.S. for the combined diaphragms and average F.S. for combined shear walls.
        vi. Roof joist anchorage for the uplift wind load.
3. The ASD capacities for the diaphragm and shear walls shall be based on the 2021 Special Design Provisions for Wind and Seismic (SDPWS) standard (https://awc.org/publications/2021-sdpws/). All diaphragm and shear wall designs shall adhere to limitations listed in SDPWS.
4. Assume that the structure will be connected to a foundation with 1/2" diameter anchor bolts and SST holdowns.

In all cases, the demand (load) on the structure shall not exceed the capacity (resistance) of the structure.

'***Continuous Load Path***' is another focus of this competition. A structure must resist uplift, overturning, and sliding from the foundation as a system. The members must resist the out-of-plane (bending), in-plane (shear) and axial forces imparted from the loads as individual members, a diaphragm system or component, and a structure. How well a house or building can absorb effects from wind and seismic loading has much to do with 'Continuous Load Path'. A building absorbs seismic and wind effects by connecting the horizontal roof and floor diaphragms to the walls. When ground motion produces inertial forces, these forces push on the roof (and floor) diaphragm in one direction and the walls hold back the roof in the opposite direction. This behavior is similar in a building absorbing wind effects. For the effects to be properly absorbed, the roof and floor diaphragms must be connected to the walls and the upper story walls are connected to the lower story walls. The lowest level walls are connected to the foundation. The roof connection to the walls must also account for the uplift forces due to wind. As an analogy, if the wind or seismic forces were electricity, it's the engineer's job to design a continuous path for that electricity to flow to the ground.

The following diagrams illustrate a continuous load path through wood members, fasteners, and connectors:

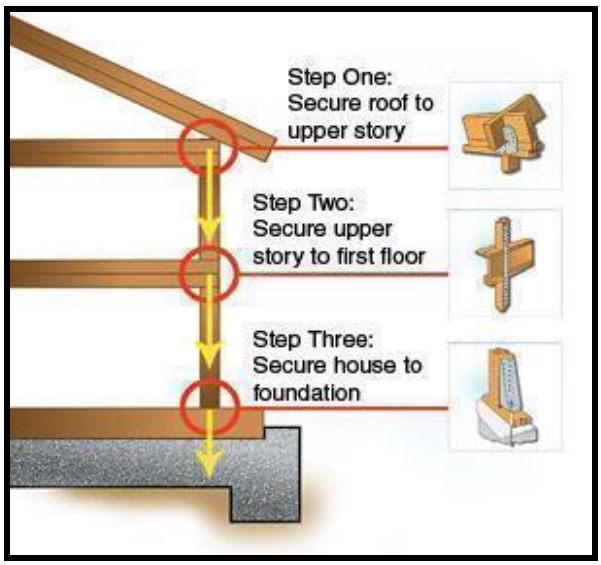


Figure 2: Continuous Load Path

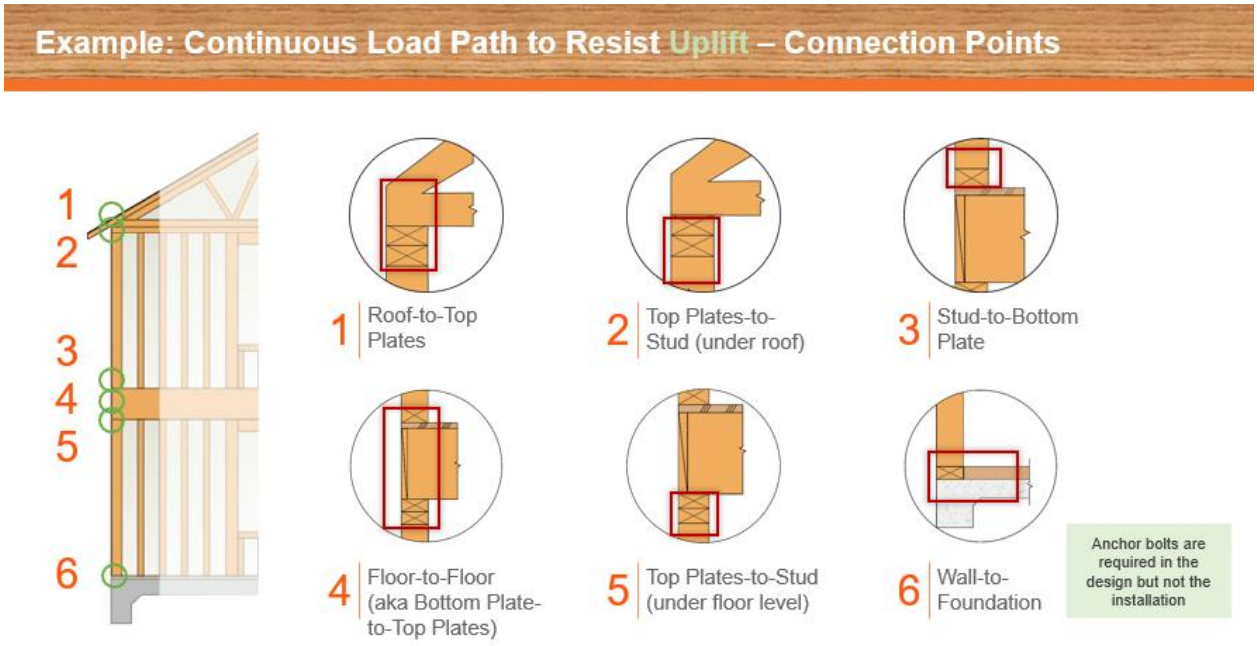


Figure 3: Continuous Load Path Resisting Uplift Forces

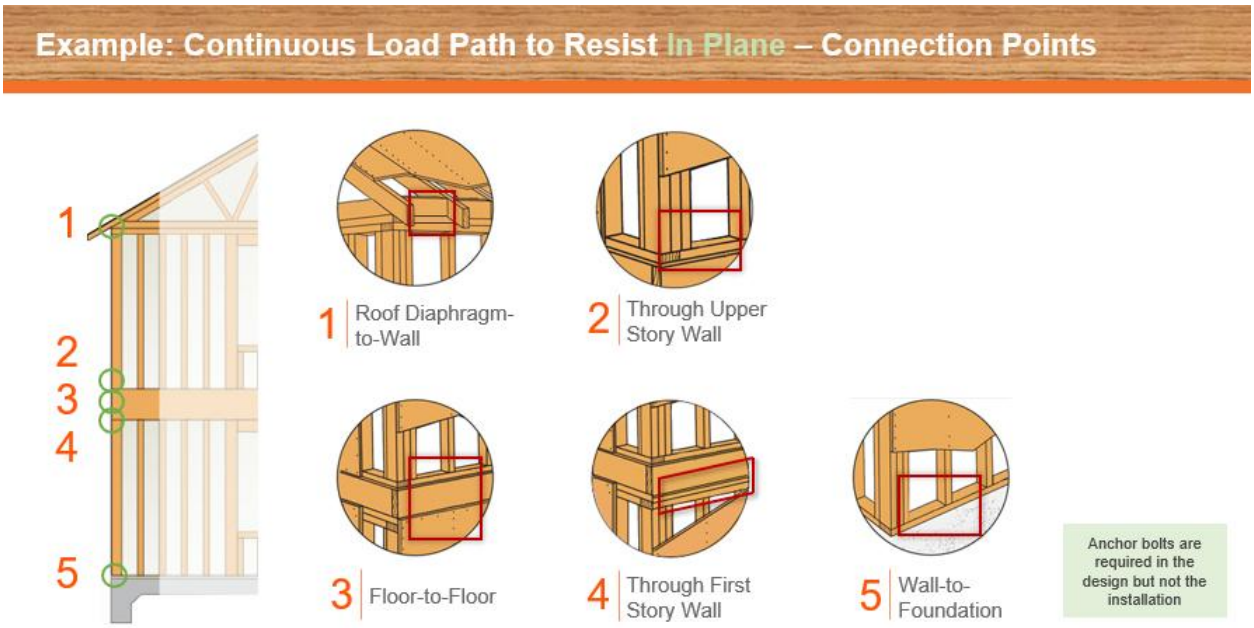


Figure 4: Continuous Load Path Resisting In-Plane Forces

Implementation of a continuous load path in the design and modeling of the structure in this competition will be a major focus. A Revit library of Simpson 2D & 3D connectors and fasteners is available for use. The following link is for downloading the 'Drawing Finder for Revit Plugin' from the Simpson Strong-Tie website:
https://www.strongtie.com/drawing/drawing-finder-for-revit
This plugin allows the Revit user to insert Simpson products directly into the Revit model and drawings by pulling the most recent content from the Strongtie.com website. Note that there is also an "Installation Instructions and Best Practices Tutorial" pdf file on the web page.

A wind unit uplift force has been provided for calculation (See SECTION 5.2.2). Teams will calculate the total uplift and appropriately connect the roof to the second level walls. Teams will be responsible for resisting uplift and overturning forces to the foundation with fasteners, connectors, structure dead load, or a combination of the three. Holdowns are to be designed and installed to anchor the structure to the foundation, although the structure will not be anchored to the foundation during the competition.

5.2.3 CHANGE ORDERS

Change Orders are NOT intended to be used to redesign or resubmit a complete drawing set. Change Orders should include any changes made to any portion of a previous submission (including Phase 1A, Phase 1B, Phase 2, or Phase 3 submissions) that are stated in the rules. Examples of changes include, but are not limited to: change of species or wood or grade of material, corrections to errors in deflection calculation, change to carbon footprint calculation, or change of connector

due to availability. Any change made to any portion of a previous submission shall be documented in a Change Order.

Plans and specifications should be reviewed prior to each submittal. Any ambiguity in the drawings or errors or omissions in the scope should be addressed with the TSDB Head Judge or TSDB Committee to get these corrected and to mitigate the need for Change Orders further along in the project. Failing to review and identify any issues with the scope of work, plans and specifications will lead to unnecessary Change Orders down the line. Not performing due diligence can have large cost and schedule ramifications in the field. This due diligence includes understanding the current site conditions and anticipating and addressing any issues that might arise along the way, such as material shortages or the removal or addition of builders, which is an important step in the preconstruction phase and in your Change Order process.

Conditions of Acceptance:

1. Submitted electronically using the completed Change Order form (see APPENDIX A) **a minimum of 7 days prior to Build Day**, no later.
    a. Submit to the Cerberus Change Order folder in PDF format. File name shall include the Change Order # and the type of change made. Example upload shall be named "School-Name_CO1-DeflectionCalc.pdf".
2. Approval by the Head Judge is required. If no Head Judge is assigned, the TSDB Committee will approve or reject Change Order request.
3. All Change Orders must show the original plan/detail/calculation and newly altered plan/detail/calculation submitted with initial request.
4. Newly altered plan/details/calculation must show area that will be changed with a cloud area for reference (see **Figure 5**).

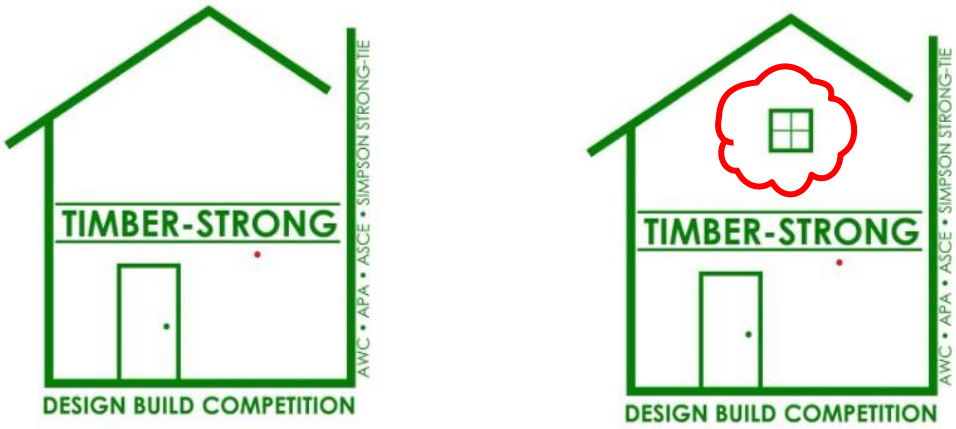


Figure 5: Example Of Clouded Change

DO NOT IGNORE OR DELAY CHANGE ORDERS! All change orders need to be handled as expeditiously as possible. Putting off a change order until late in the project can result in huge point deductions. **All Change Orders will be subject to point deductions as follows:**

- submitted after the Phase 1 deadline: 1 pt per Change Order
- submitted after the Phase 2 deadline: up to 2 pt per Change Order (depending on significance/magnitude)

5.2.4 STRUCTURAL DRAWINGS

22" x 34" drawings accurately depicting the structure that is designed, including but not limited to:

- Framing plans
- Shear wall connection details
- Panelized diaphragm and shear wall sheathing type and fastening schedule
- Connectors, blocking, and fasteners for continuous load path
- Plan views, elevations, and cross-sectional details demonstrating continuous load path
- Anchorage to the foundation

5.3 SUSTAINABLE DESIGN

Wood is renewable, like any crop. Engineered wood products can use smaller trees from well-managed forests, saving old growth for future generations to enjoy. Forest land comprises about 33 percent of the total U.S. land area. Demand for more wood products encourages forest landowners to maintain healthy forest regeneration, which in turn helps absorb more greenhouse gases.

Manufacturing wood uses less energy than producing steel or concrete, reducing greenhouse gas and other air-polluting emissions related to construction. Wood sequesters carbon. By trapping the carbon removed from the environment during the trees' growth, buildings made with wood can continue to have a net benefit on the environment when compared to their steel and concrete counterparts.

To analyze the net embodied carbon of the structure, provide carbon footprint calculations which include:

1. Analyze the carbon footprint for 100x the building's structural framing volume to simulate an actual full-size building. Determine the amount of carbon stored in the two-story structure using the WoodWorks Carbon Calculator tool found at: http://www.woodworks.org/carbon-calculator-download-form/
2. Analyze the carbon footprint for 100x the building's structural framing volume to simulate an actual full-size building. Estimate the embodied carbon output from the building materials by using the SE2050 ECOM – Embodied Carbon Estimator found at: https://se2050.org/ecom-tool/
3. Determine the net embodied carbon by subtracting the carbon stored from the embodied carbon estimated.

All input and output shall be provided in the report.

5.4 BUILDING MATERIALS AND SAFETY GEAR

5.4.1 MATERIALS

All materials specified and used in the structure's construction shall be as follows.

- All structural framing shall be a nominal sawn lumber size 2 x 4 (actual size 1.5" x 3.5") or larger. Materials shall be limited to Douglas Fir (DF), Southern Pine (SP), Douglas Fir-Larch (DF-L), Hem-Fir (HF) or Spruce-Pine-Fir (SPF) species groups or engineered wood products. All solid sawn lumber products must include an ALSC compliant grade stamp (or approved equivalent).
- Wood structural panels (plywood or oriented strand board (OSB)) are permitted to be used for the diaphragm and shear walls. Structural insulated panels (SIPS) are not permitted. All wood structural panels shall conform to either PS 1 or PS 2 (or approved equivalent) and shall have an approved grade stamp.
- Roof systems cannot be prefabricated panels with sheathing attached. Individual constructed roof structural elements not weighing over 30 lbs may be pre-assembled. Roof sheathing shall be attached to structural elements on site and in place during the build.

Connections shall be made with nails, screws, bolts, and steel connectors. Simpson Strong-Tie connectors and fasteners can be requested from Simpson Strong-Tie using the MATERIALS REQUEST form in APPENDIX A. Teams will be donated up to $500 of Simpson Strong-Tie connectors and fasteners; any hardware costs exceeding this limit will be the responsibility of the team.

5.4.2 CONSTRUCTION

All supplies (materials, connectors, tools, etc.) to construct the structure shall be provided by each team. The construction supplies shall correspond to materials specified in the design and construction documents. A team may be disqualified from participating in Build Day if minimum requirements are not met (see SECTION 10.12)

5.4.3 SAFETY GEAR

Each team is responsible for bringing their own tools, safety gear, and personal protective equipment (PPE) including but not limited to construction hard hats, safety glasses, gloves (tips of gloves may not be cut off, gloves should not be oversized), closed toed shoes, long pants, and safety vests or high-visibility shirts. Long hair needs to be tied back at the construction site. See SECTION 4.5 for additional information.

NOTE: Power tools using compressed air, powder actuation or rotating blades such as pneumatic nailers, palm nailers, power saws, cordless saws, reciprocating saws, oscillating saws, etc. are not permitted to be used at the competition. However, battery operated tools such as drills or screwdrivers are permitted. Teams shall provide their own ladders. NOTE: SST will donate connectors and fasteners (see APPENDIX A). Additionally, SST will ship the connectors and fasteners to the teams prior to the competition.

5.5 BUDGET

A primary consideration with any project is the budget and making sure the costs are tracked. Each team will provide a budget which includes an itemized list of the cost of materials based on estimates for the materials used to design their structure and document how the costs were estimated. The budget shall be itemized and included in the report using a spreadsheet. See APPENDIX A for example. All materials shall be priced based on distributor pricing local to the build site, regardless of how/where the material was obtained, donated or purchased. In addition, person hours shall be included in the budget. This should include the number of "Builders" on Build Day and an estimate of the time required to complete the build (only estimate time within the 90 minute maximum on Build Day). This estimate should match the estimated construction time provided on the visual aid. This person hour estimate shall not include the time to panelize walls or build portions of the structure prior to Build Day, nor any activities occurring outside of the build site. The cost per hour will be $50/person/hour.

5.6 REPORT

5.6.1 REPORT CONTENTS

Each team's report must include:

a. Table of Contents
b. All team members' names, cell phone numbers and email addresses including the team captain, faculty advisor, and any practicing engineers serving as mentors. If competing in the construction portion of the event, identify the 4-6 builders, one of which will be designated as the build captain. The team captain can also be the build captain but is not required to be.
c. Team History including photo(s) of the structure from each school's previous year of participation in TSDB and a short summary of lessons learned. Photo(s) of TSDB structures earlier than the previous year are also welcome but not required. If this is the first year of participation, a school can include a short summary on how the team originated and decided to compete.
d. Structural design calculations (SECTION 5.2)
e. Sustainable design calculations (SECTION 5.3)
f. The budget (SECTION 5.5) including references for the estimated material costs - unit price.
g. Statement of how the team will remove the structure from the site and method of recycling or donating the project material after the competition (SECTION 9.5).
h. Statement that all team members have read and understand the rules including SECTION 4.5 in addition to the referenced OSHA documents.
i. Statement that all designated builders have completed and uploaded their Certificate of Completion for the Ladder Safety Training (see SECTION 4.5)
j. All the host and sponsor logos (ASCE, AWC, APA & SST)

k. The report shall be signed and dated by at least one (1) team captain and one (1) faculty advisor certifying that the information is valid.

6.0 PRESENTATION

Presentation:

1. Using the items listed for the visual aid (see SECTION 9.2), each team will record a presentation about their project and upload it by the Phase 2 deadline as listed in SECTION 4.6 . Each team is responsible for video recording their presentation which shall be uploaded into the team's ASCE Cerberus ftp server folder.
2. All members of the builder team must participate in the presentation.
3. Each team will have 10 minutes maximum for the presentation.

7.0 ELECTRONIC FILES

Each team shall upload their electronic files into the ASCE Cerberus ftp server folder provided by ASCE. The team folder shall have **separate** folders for each submittal phase shown below. The files will be uploaded in phases per SECTION 4.6 into the team folder as follows:

Phase 1A:

1. Project report. Submit in PDF format. Uploaded file shall be named "School-Name_Ph1A-Report.pdf".

Phase 1B:

1. Structural drawings. Submit in PDF format on 22" x 34" sheet size. PDF should include all drawing sheets. AutoCAD files in DWG format will not be accepted. Uploaded file shall be named "School-Name_Ph1B-CDs.pdf".
2. BIM Model and associated 3D graphics (i.e. perspectives, renderings, etc.) as needed to appropriately convey the finished structure with a complete load path. Uploaded BIM models shall be Revit files named "School-Name_Ph1B-BIM.rvt". Uploaded additional 3D graphics shall be on 22" x 34" sheets in PDF format named "School-Name_Ph1B-Graphics.pdf".
    a. Ensure all 3D views are included prior to exporting your RVT file (follow Collaborate>Manage Models>Publish Settings to check active views).
3. Photos and/or videos files of any pre-fabrication, etc. shall be named "School-Name_Ph1B-Fabrication", numbered and use either a .jpeg or a .mp4 file format.

Phase 2:

1. Presentation materials, photos and/or videos of the team presentation. Uploaded files shall be named "School-Name_Ph2-Presentation", numbered and using either a .jpeg or a .mp4 file format.

2. Visual Aid. Uploaded files shall be named “School-Name_Ph2-VisualAid” using either a .jpeg or a .pdf file format.

Phase 3:

1. Each team shall have physical copies of their visual aid, construction drawings, and report (inclusive of any change orders) at the Build Day. A missing visual aid, construction drawing set, or report print out will result in a point deduction.

All teams must have all materials in their ASCE Cerberus ftp server folder by the deadline or the team will have points deducted from their score. File types other than those listed above (PDF, RVT, JPEG, and MP4) are not accepted.

8.0 BUILDING INFORMATION MODEL (BIM)

The team members will model the entire building superstructure per the design shown in their submitted report, structural drawings, and visual aid using Autodesk Revit. Teams that do not model the structure to the specifications outlined within the report, structural drawings and visual aid will be subject to a scoring deduction (see SECTION 10.0). The structure shall be modeled using only wood members (see SECTION 5.4.1).

The completed model must provide a complete load path for gravity, wind, and seismic loads, and all loads shall be resolved into the foundation.

The BIM will be judged based on completeness of the model (including all structural framing materials and connectors), visually demonstrating the continuous load path, accurately calculating the materials cost, and accuracy of the model according to the team report. To be considered complete, all structural members must be modeled in three dimensions (see SECTION 10.6).

Please refer to SECTION 10.0 for any other scoring concerns.

9.0 CONSTRUCTION & VISUAL AID

The team members designated as “builders” (see SECTION 4.3.2) will construct the entire project per the design shown in their submitted report, structural drawings, and visual aid. The team’s faculty advisor is expected to be present during the construction of the project. Teams that do not construct the structures to the specifications outlined within the report, structural drawings and visual aid will be subject to a scoring deduction (see SECTION 10.0). The structure shall be constructed using only wood members (see SECTION 5.4.1).

9.1 GENERAL

In wood light frame construction, it is a common practice to construct walls, floors, and roofs offsite and deliver these fabricated panels (also referred to as “components”) to the jobsite for erection. This

process is referred to as ‘panelization.’ It is the intent of this competition for teams to construct the wall and floor panel components offsite and deliver them to the competition site for erection. Roof framing shall be done onsite, so builders are not lifting large and heavy panel components from ladders overhead. Judges will observe the construction.

The structure is to be constructed such that it can be easily disassembled in larger pieces to place on a shipping pallet. Similarly, the roof shall not be disassembled as a single component for safety purposes. This panelization process not only replicates real-world construction but also makes it easy for disassembly and reassembly. For this reason, we require the use of screws or bolts for connecting the components (i.e., wall components, floor components) together. However, this is not to be confused with the general wood nailing and sheathing nailing (using code prescribed nail sizes) in the assembly of the panels and sheathing done offsite. The screws or bolts make the deconstruction of the structure into stacks of panels on pallets much easier. The structural drawings must identify and specify the screw size and location for erecting and connecting the panels together. This adds an extra bit of planning and design to the structure in considering erection and disassembly of the panelized components. Disassembly and building removal are an important part of construction in this competition.



Example of panelized walls at 2022 TSDB

The roof structural framing members are allowed to be pre-cut prior to the competition date. Due to safety concerns, any preassembled roof segments intended to be lifted into place overhead may not exceed 30lbs or exceed 12-inches in its narrowest dimension (Ex. Two 2x6 rafters and a rafter tie may be preassembled with a weight of approx. 23lb. and a narrow dimension of 1-1/2-inches). Prefabricated portions of the roof not meeting these limitations will either need to be dismantled prior to build or eliminated from the build. All prefabrication must be done prior to arriving at the building site on Build Day. Partial hardware installations prior to Build Day are only permitted in prefabricated wall and floor panels and shall not protrude outside the plane or width of that assembly. Such installations could create sharp edges and other safety concerns (ex. pre-installation of hurricane ties on top of a wall are not allowed; pre-installation of holdowns between the wall studs are allowed).

The walls and floor may use fabricated panels. For safety due to lifting and ladders, the roof must be constructed on-site (non-panelized).

The sheathing connections shall be identifiable through any decoration of the panel components. The ability to identify the type and spacing of sheathing connections to the framing shall be maintained.

The structure is not allowed to be anchored to the construction site area and it is the team's responsibility to provide adequate measures to resist overturning loads as a result of the applied cantilever loading. **No counterweight other than the dead load of the structure is allowed to resist any overturning.** The completed structure must provide a complete load path for gravity, wind, and seismic loads. Hardware omitted due to the anchoring restriction shall be partially installed on Build Day (i.e. all connectors above the foundation) and the location of any omitted anchor shall be clearly indicated on the mud sill. All anchors that are omitted on Build Day shall be fully depicted in the drawings and BIM model.

Construction on-site during the competition will be judged based on the time of construction, completeness of construction, continuous load path, materials cost, and accuracy of construction according to the structural drawings.

Please refer to SECTION 10.0 for any other scoring concerns.

9.2 VISUAL AID

Each team shall display a visual aid at their build site and upload the digital file to their Phase 2 folder. Each team's visual aid shall be 30" tall x 40" wide with a foam-core base and include the following items:

Visual Aid:

1. Drawings, graphics, text, photos, etc. that summarize and illustrate the significant aspects of the project. The visual aid must at least contain:
    a. Student chapter and team member names
    b. Graphics and snapshots of the structure
    c. Factor of Safety for the diaphragm and the shear walls
    d. A table indicating the calculated cantilever beam deflections and bearing force per linear foot of the sill plate of the wall opposite the cantilever beam for each of the three possible point load locations
    e. Design features
    f. Total calculated carbon stored in structure, embodied carbon output, and the net embodied carbon
    g. Total material cost of the structure
    h. Total calculated weight of the structure
    i. Logos of all the host and sponsors (ASCE, AWC, APA & SST)

j. Estimated build time (not including mandated safety checks)

2. Ensure the text and graphics on the visual aid are large enough to be read from a distance of 3ft. Use high-contrast colors and clear fonts. Laminate the visual aid or use weather-resistant materials to protect it from the elements. The visual aid fonts, data and graphics should be large enough to be easily read by observers and judges without them needing to enter the construction site.
3. The visual aid shall be shown on an easel (construct or provide your own 60" or taller easel) near the structure at the building site or an area designated by the host. The visual aid and easel shall be displayed at the start and during construction and until removal of the structure. The visual aid and easel shall be secured or constructed in a way that can withstand site and outdoor conditions such as wind and construction activity.

9.3 SITE REQUIREMENTS AND CONSTRAINTS

All teams will be provided with a 18' x 18' area known as the "construction site" as defined by clearly marked lines on the ground to construct their structure. The construction site limits will be measured from the inside edge of the boundary. All sites will be located on relatively level surfaces; however, it may not be completely flat. A 4-foot public/spectator set-back will be enforced for safety. All spectators, including team members not participating in the build, will be required to maintain this minimum distance from any construction site.

A hard copy of the report printed on 8 1/2x11 inch paper and structural drawings printed on minimum 11x17 inch paper and incorporating any Change Orders submitted by the Change Order deadline (see SECTION 5.2.3) must be on the construction site and available for the judges to view during the build. The visual aid must be shown near the construction site while the building is being constructed (see SECTION 9.2).

9.4 CONSTRUCTION CONSTRAINTS

The construction process will be timed for each team. A maximum of **90 minutes** of construction time will be allotted for each team's construction.

1. All team members must always be wearing all the safety gear while in the construction site (see SECTION 5.4).
2. All construction materials (including framing members, fasteners, connectors, tools, etc.) must remain in the construction site during the entire construction process. Point reductions shall apply for violations (see SECTION 10.0).
3. All team members and their building materials and tools shall be set up within the construction site prior to the start time.
4. No construction shall start within the construction site prior to the start time.

5. The team is not allowed to start constructing their project on the construction site until the time starts recording by the judge/timer.
6. Time will begin being recorded after all builders hold their hands above their heads and the captain states to the judge/timer that they are ready to begin.
7. No additional building materials and tools may be added to the construction site after the start time. However, builders are allowed to be provided with water for nourishment.
8. Prior to erection of the second-floor walls and roof framing, the first-floor walls and second floor framing shall be completely constructed.
9. The team will tell the judge when they are ready for review of the structure. The judges shall be allowed time to review the structure, prior to application of any finish materials (veneer, siding, etc.) that would impede or hide observation of the nailing, connections, details, or overall load path of the structure. The timer will stop the clock while the judges are reviewing the structure and during this time, builders are not allowed to step out of the construction site. Once the judge has finished, the timer will restart the clock using the same process when it was originally started.
10. Upon completion of the assembly of a team's structure, all team members will set down all their tools, materials, etc. and the team captain will signal to the timer/judge that the team has completed the building and the timer will stop the clock. Once the clock is stopped all team builders must exit the construction site.
11. Team builders will receive a penalty for exiting the construction site prior to completion of the structure (see SECTION 10.0).
12. Once the team has completed the construction, the judges will measure the deflection before the load is applied and after the load is applied. (Load Test Video) The test load location for all builds will be determined by the single roll of a standard six-sided die performed by the Head Judge prior to the beginning of construction. The roll of the die will determine the location of the test load and deflection measurement on the cantilever floor beam. The locations are measured from the exterior edge of stud at the face of the wall from which the cantilever beam extends.

Dice Value	Location Of Test Load From Wall
1	3'-6"
2	3'-0"
3	4'-0"
4	4'-0"
5	3'-0"
6	3'-6"

13. Only the judges are allowed in the construction site during the measurement of the deflection aside from builders assisting the judges with loading the cantilever floor beam with the provided weights.

14. Each team is responsible for taking pictures of the completed structure which shall be uploaded into the team's ASCE Cerberus ftp server folder as soon as possible after the TSDB[SM] Competition.

9.5 BUILDING REMOVAL AND CLEAN UP

Once the competition has ended, the completed structures shall be deconstructed, panel by panel, and the panels stacked on pallets. After building the structure, each team is responsible for removal of **ALL** materials used for the project including but not limited to scrap wood, tools, fasteners (nails, screws, bolts, etc.) etc. in a safe and responsible manner. Each team shall designate a person in charge of the structural stability during construction and deconstruction. It is very important that each team make a clean sweep of the site and surrounding areas to make sure that **ALL** materials are removed immediately following deconstruction. Points will be deducted from the team's score if the construction site is not completely clean and/or if any building materials are left after the structure is removed.

Each team shall define in the report the plans for removal of the building and all materials. Building materials account for approximately 7% of greenhouse gas emissions globally (CLF Embodied Carbon 101). While wood building materials account for only a small portion of this percentage and also store carbon during a buildings life, that storage does not last forever. The carbon stored within the wood building materials is slowly released as the wood decomposes. Though these competition structures are not expected to have the same lifespan as a typical building, it is the responsibility of each team to consider alternatives to immediate disposal of their build materials. Potential reuse or recycling of the project materials should be determined prior to the competition. Possible solutions include donating to the Childhood Cancer Foundation (CCF) http://ccfsocal.org/ or other charitable organizations or researching other options at: http://reusewood.org/. For liability reasons, it is preferred that you donate the materials individually and not for the purpose of reassembling the structure. Anyone seeking reuse of the structure in a real world application should contact ASCE's Legal Department (email student@asce.org with subject line "TSDB donation waiver request") for a liability waiver. Each team is responsible for removing the building and all materials from the site. The host has the option to remove any remaining structural debris from the site and bill the responsible school.

10.0 SCORING

Scoring will be based on the team's report, BIM, presentation, and construction of their building. In the instance of a tie, the teams involved will receive the same place and score. For example, if two teams tie for second place in Sustainability in Report, both will receive 18 points.

Scoring is as follows:

	Maximum Points
PHASE 1A: REPORT	
Design Strength and Durability Analysis	82

Sustainable Design	18
Budget	20
Report Requirements	10
PHASE 1B: DRAWINGS, BIM, VISUAL AID, GRAPHICS	
Creativity & Aesthetics	20
BIM	70
Construction Drawings	50
PHASE 2: PRESENTATION	
Presentation	20
Visual Aid	10
Design Points Possible (Total for Virtual Only)	**300**
BUILD DAY: CONSTRUCTION	
Demonstration of Load Path	60
Accuracy and Quality	60
Complete Structure	20
Estimated Build Schedule	20
Construction Points Possible	**160**
Design Build Innovation	40
TOTAL POINTS POSSIBLE	**500**

10.1 DESIGN STRENGTH AND DURABILITY ANALYSIS: 82 POINTS

Points will be awarded based on structure durability and the performance to withstand the wind lateral and vertical loads, as well as the structural efficiency of the overall structure.

Design Factor of Safety: 12 points

Points will be rewarded based on the design factor of safety (F.S.) for the design of the diaphragms and the shear walls.

Points will be awarded to the teams that get the combined average diaphragm and combined average shear wall F.S. closest to 1.50 (i.e. full points if all are within 10%, half points if all are within 20% of 1.50 F.S.). If any individual diaphragm or shear wall F.S. is less than 1.00, zero points will be awarded.

Maximum scores are as follows:

- Roof and Floor Diaphragms 6 points
- Shear Walls 6 points

Structural Design Completeness and Accuracy: 55 points

Points will be awarded based on the structural analysis, completeness, and correctness.

Deflection: 15 points

Points will be awarded based on the ratio of calculated predicted deflection from the report to actual deflection measured in competition. Teams not participating in the physical build will be awarded points solely on the completeness of their calculations. In order to qualify for these points, the cantilever deflection must meet the requirements of SECTION 5.2.1.

10.2 SUSTAINABLE DESIGN: 18 POINTS

Points will be awarded for a sustainable structure based on the calculated carbon sequestration and potential carbon benefit in the report.

10.3 BUDGET: 20 POINTS

The budget shall include, but is not limited to, lumber, hardware, labor, and estimated build time. All materials shall be priced regardless of how/where the material was obtained, donated or purchased. Up to 10 points will be awarded based on the completeness and accuracy of the budget and associated documentation. The remaining 10 points will be awarded based on the total cost relative to the average cost among all participating teams.

Note: teams are only eligible for the remaining 10 points if their budget is determined to be complete and accurate. Points for estimated build time will be incorporated into the build day score (zero points will be awarded if no time estimate is made).

Cost impacts due to Change Orders will be factored into the final material cost. (see SECTION 5.2.3)

10.4 REPORT REQUIREMENTS: 10 POINTS

Points will be awarded for including all required report sections (see SECTION 5.6.1)

10.5 CREATIVITY/AESTHETICS: 20 POINTS

Points will be awarded by the judges for creativity and aesthetically pleasing structure. Judges will award 1-20 points.

10.6 BIM: 70 POINTS

Points will be awarded based on the BIM as follows:

Accuracy of model: 30 points

Load path: 20 points

Complete Structure: 20 points

Overall structure completion according to the drawings, connectors, anchors, holdowns placement,

cladding, etc.

10.7 CONSTRUCTION DRAWINGS: 50 POINTS

Points will be awarded based on the completeness and accuracy of the drawings.

10.8 PRESENTATION: 20 POINTS

Points will be awarded based on full team participation and quality of discussion content.

10.9 VISUAL AID REQUIREMENTS: 10 POINTS

Points will be awarded for a visual aid with all items included (see SECTION 9.2)

10.10 CONSTRUCTION: 160 POINTS

Safe, accurate, quality and timely construction, meeting the project parameters and demonstrating a complete load path. Points will be awarded based on construction as follows:

Demonstrated Load Path: 60 points

Accuracy and Quality: 60 points

Complete Structure: 20 points
Once time has stopped, points will be awarded based on the constructed elements required by the rules and those shown in the drawings. All structural items from the stability check must be present to load the cantilever for deflection measurement.

Estimated Build Schedule: 20 points
All teams are required to estimate their total build time in the budget section of their report as well as on their visual aid (not including time spent for mandated safety checks). Teams will be awarded points based on the accuracy of their estimated time relative to their actual time. Teams will lose 1 pt for each minute of inaccuracy (including time penalties) between the estimated build time and the final build time (zero points will be awarded if a team does not finish within the 90-minute limit). While fast build times also earn points, teams are encouraged to prioritize accuracy over speed. Practice builds are encouraged.

10.11 DESIGN BUILD INNOVATION: 40 POINTS

Teams will be awarded points for innovative design and construction that go above and beyond these guidelines. Due to that nature, the points in this section will be scored by the judges on Build Day and then weighted based on the percentage of each respective team's scores for their design and implementation of load path throughout Phases 1-3. Maximum points may be awarded as follows:

Aesthetically Creative: 15 points

Structurally Challenging: 10 points

Fastest Build Time: 10 points

Above & Beyond Features: 5 points

10.12 ADDITIONAL POSSIBLE POINT DEDUCTIONS AND/OR DISQUALIFICATION

SECTION 4.5

- If there are any safety violations as identified by Safety Officials or Judges, the team must correct the issue(s) after the first warning or they will be disqualified.
- Any non-mandated/planned safety stops by Safety Officials or Judges will result in 20 minutes per stop added to the team's total recorded build time.

SECTION 4.6 SCHEDULE, DEADLINES, AND SUBMISSIONS AND SECTION 7.0 ELECTRONIC FILES

- 20 points will be deducted (per submittal) if the team folder does not contain the required files for Phase 1A & 1B by the submission deadline.
- 10 points will be deducted if the folder does not contain the required files for Phase 2 by the submission deadline.
- Up to 40 points will be deducted if all required hard copies of submittals (including any Change Orders) are not present on Build Day as follows:
  - Report (10 points)
  - Construction Drawings (20 points)
  - Visual Aid (10 points)

  No partial credit will be given for out of date or incomplete hard copies.

SECTION 5.1 GENERAL

- 5 points will be deducted for structures that measure, excluding the cantilever, larger than 6' w x 8' w x 12' h dimensions as measured in SECTION 5.1 .
- Up to 30 points will be deducted for structural calculations that are electronically generated. If only a portion of the structural calculations are electronically generated, the deduction shall be reduced proportionate to the number of calculations electronically generated, not less than 10 points.

SECTION 5.4.2 CONSTRUCTION

- Teams will be disqualified from participating in Build Day if the following have not been submitted **a minimum of 7 days prior to Build Day (or March 1st, whichever is later)**:
  - Calculations demonstrating:
    - Structure weight with required stability check for overturning with cantilever loading.
  - Construction Documents:
    - Continuous load path for gravity for protection of life safety.
    - Dimensioned plans with member sizes.

- Designs not meeting the geometric limits described in SECTION 5.1 .

SECTION 9.4 CONSTRUCTION CONSTRAINTS

- 5 points will be deducted for each instance that materials, tools, or builders are out of bounds. View the boundary as a vertical plane extending from the marked ground to a height you cannot get over. Out of bounds would be breaking the vertical plane.

SECTION 9.5 BUILDING REMOVAL AND CLEAN UP

- 5 points will be deducted if anything is left in the construction site after the structure has been removed (including debris or markings).
- Points will be deducted if a practical plan to donate or recycle the project is not laid out in the report.
- Points will be deducted if the team does not designate a person in charge of structural stability during deconstruction.

OTHER GROUNDS FOR DISQUALIFICATION

- Structure failure
- Plagiarism
- Any attempt to build without a hard copy of the construction drawings on-site
- Significant safety violations
- Conduct in violation of SECTION 4.4 .

The Head Judge has final say over deductions. The Head Judge may consult with the TSDB Rules Committee regarding deductions, but the TSDB Rules Committee will not overturn their decision.

11.0 ADDITIONAL INFORMATION

- Teams may submit questions as explained in SECTION 4.2.1.
- The Head Judge shall be present at the Team Captain's meeting. All Judges are welcome to attend the Team Captain's meeting.
- All electronic entries/pictures and videos entries shall become the sole property of the host, American Society of Civil Engineers, and the sponsors: American Wood Council, Simpson Strong-Tie and APA-The Engineered Wood Association. Host, ASCE and sponsors reserve the right to use or publish all entry material in publications, social media, etc. By entering, the entrants grant a royalty-free license to the American Society of Civil Engineers, American Wood Council, Simpson Strong-Tie, and APA – The Engineered Wood Association to use any material submitted. Such a right includes publication of photographs and names of award recipients without compensation to Entrants.
- Final judging shall be completed on Build Day.
- At the end of the student symposium competition, the Head Judge shall promptly upload the completed official scoring spreadsheet for a student symposium competition to ASCE's Cerberus ftp server. (See APPENDIX D for Cerberus Upload Guidance.) ASCE will provide the Head Judge a secure submission link for ASCE's Cerberus ftp server in February 2027.

APPENDIX A TEAM FORMS

MATERIALS REQUEST (FOR COST ESTIMATING PURPOSES)

45 days prior to Build Day for respective symposium

Connectors/Fasteners ($500 Maximum Total)
Please return to: Angel Leon, ALeon@strongtie.com (951) 538-6529
www.strongtie.com

Quantity	Model #	Description /Product Name
	Student Name	
	Advisor Contact Info:	
	Delivery Address:	
	Phone Number	
	Tax ID #	

BUDGET FORM (EXAMPLE NOT A TEMPLATE)

TIMBER-STRONG DESIGN BUILD

MATERIAL COST ESTIMATE (EXAMPLE ONLY)

Description	Qty	Unit	Unit	Purchased		Donated		Total
Wall Framing (1st Floor)								
2x4-8ft Wall Studs	10	pcs	$ 5.85	2	$ 11.70	8	$ 46.80	$ 58.50
2x4-8ft Corner Posts	15	pcs	$ 5.85	0	$ -	15	$ 87.75	$ 87.75
2x4 Top/Sill Plates	50	LF	$ 0.85	2	$ 1.70	48	$ 40.80	$ 42.50
4x8 1/2 Cat. WSP	8	pcs	$ 22.85	8	$182.80	0	$ -	$ 182.80
Floor System								
2x4 Rim Joist	30	LF	$ 0.85	0	$ -	30	$ 25.50	$ 25.50
2x4-8ft Floor Joists	12	pcs	$ 5.85	0	$ -	12	$ 70.20	$ 70.20
2x4-14ft Cantilever Beam	1	pcs	$ 10.47	1	$ 10.47		$ -	$ 10.47
4x8 5/8 Cat. WSP	5	pcs	$ 30.96	5	$154.80	0	$ -	$ 154.80
Wall Framing (2nd Floor)								
2x4-8ft Wall Studs	30	pcs	$ 5.85	4	$ 23.40	26	$ 152.10	$ 175.50
2x4-8ft Corner Posts	12	pcs	$ 5.85	2	$ 11.70	10	$ 58.50	$ 70.20
2x4 Top/Sill Plates	60	LF	$ 0.85	12	$ 10.20	48	$ 40.80	$ 51.00
4x8-1/2 Cat. WSP	10	pcs	$ 22.85	10	$228.50	0	$ -	$ 228.50
Roof Framing								
2x4-8ft Roof Rafters	8	pcs	$ 5.85	0	$ -	8	$ 46.80	$ 46.80
2x6-10ft Ridge Beam	1	pcs	$ 8.56	1	$ 8.56	0	$ -	$ 8.56
2x4 Blocking and Roof Fascia	40	LF	$ 0.85	0	$ -	40	$ 34.00	$ 34.00
4x8-1/2 Cat. WSP	10	pcs	$ 22.85	6	$137.10	4	$ 91.40	$ 228.50
Lumber Subtotal					**$780.93**		**$ 694.65**	**$ 1,475.58**
Fasteners								
8d Common Nails	1	box	$ 27.44	1	$ 27.44	0	$ -	$ 27.44
10d Common Nails	1	box	$ 30.66	1	$ 30.66	0	$ -	$ 30.66
SD8x1.25 Screws	6	box	$ 5.23	1	$ 5.23	5	$ 26.15	$ 31.38
SDWS 22300 Screws	2	box	$ 12.74	0	$ -	2	$ 25.48	$ 25.48
Fastener Subtotal					**$ 63.33**		**$ 51.63**	**$ 114.96**
Simpson Connectors								
A35 Framing Angles	30	pcs	$ 0.47	10	$ 4.70	20	$ 9.40	$ 14.10
RTC2Z Ridge Plates	20	pcs	$ 3.57	2	$ 7.14	18	$ 64.26	$ 71.40
LSSJ26JZ/LSSJ26RZ Jack Hanger	10	pcs	$ 3.26	0	$ -	10	$ 32.60	$ 32.60
CS22-R (25' length)	1	pcs	$ 52.30	0	$ -	1	$ 52.30	$ 52.30
Connector Subtotal					**$ 11.84**		**$ 158.56**	**$ 170.40**
Total Cost of Materials					**$856.10**		**$ 904.84**	**$ 1,760.94**
Labor								
4 Builders (60 min build time)	4	hrs	$ 50.00	0	$ -	4	$ 200.00	$ 200.00
Total Cost					**$856.10**		**$ 1,104.84**	**$ 1,960.94**

*It is the user's responsibility to verify the accuracy of the calculations.

CHANGE ORDER REQUEST FORM (SAMPLE TEMPLATE)

Change Order Request Form		
Date and Time:		
Team/School:		
Team Captain:	**Name:**	**Email Address:**
	Signature:	
Description/ Reason:		
Budget Impact:		
Schedule Impact:		
Document(s) Changed:	**(include page numbers, sheet numbers, and location of change)**	
Original (or portion of Original) Document(s)		
New (or portion of New) Document(s)		
FOR TSDB JUDGE OR RULES COMMITTEE ONLY		
Approval:	☐ **Approved** ☐ **Revision Required** **Description:** ☐ **Rejected** **Reason:**	
	Signature:	

APPENDIX B REPORT TABLE OF CONTENTS

All report contents shall be organized into sections which are numbered, ordered and labelled as shown below. All other formatting shall be at the discretion of the team unless otherwise noted in the Rules. For Virtual Only competitions, maintain section number and labels only for the sections required.

No.	Section / Subsection	Page
1.0	**Team Information**	
1.1	Roster and Contact Information	
1.2	Advisors	
2.0	**Team History**	
3.0	**Structural Design Calculations**	
3.1	Basis of Design	
3.2	Gravity Design	
3.3	Cantilever Floor Beam	
3.4	Stability Check	
3.5	Wind Design	
3.6	Diaphragm Design	
3.7	Shear Wall Design	
3.8	Anchorage Design	
4.0	**Sustainable Design Calculations**	
4.1	Material Take-off	
4.2	Estimated Carbon Stored	
4.3	Embodied Carbon	
4.4	Net Embodied Carbon	
5.0	**Budget**	
5.1	Itemized Material Estimate	
5.2	Unit-Cost Documentation	
5.3	Labor and Build-Time Estimate	
6.0	**Removal, Recycling, And Donation Plan**	
7.0	**Required Team Statements**	
7.1	Rules And OSHA Acknowledgement	
7.2	Ladder Safety Training Acknowledgement	

APPENDIX C ELIGIBILITY FOR STUDENT SYMPOSIUM COMPETITIONS

The purpose of student competitions is to provide student members career-enrichment opportunities to gain hands-on, practical experience and leadership skills. Society Competitions are an important and special opportunity to showcase the engineering and professional skills of student teams. As such, mutual respect is required for all stakeholders, including competitors, judges, hosts, and guests. Participation in the Student Symposia competitions is a privilege, not a right. Failure to act professionally can result in sanctions, disqualifications, and loss of invitations.

Student Chapter Eligibility for Student Symposium Competitions

The following qualifications are required of all ASCE Student Chapters to compete at the Student Symposium Competitions:

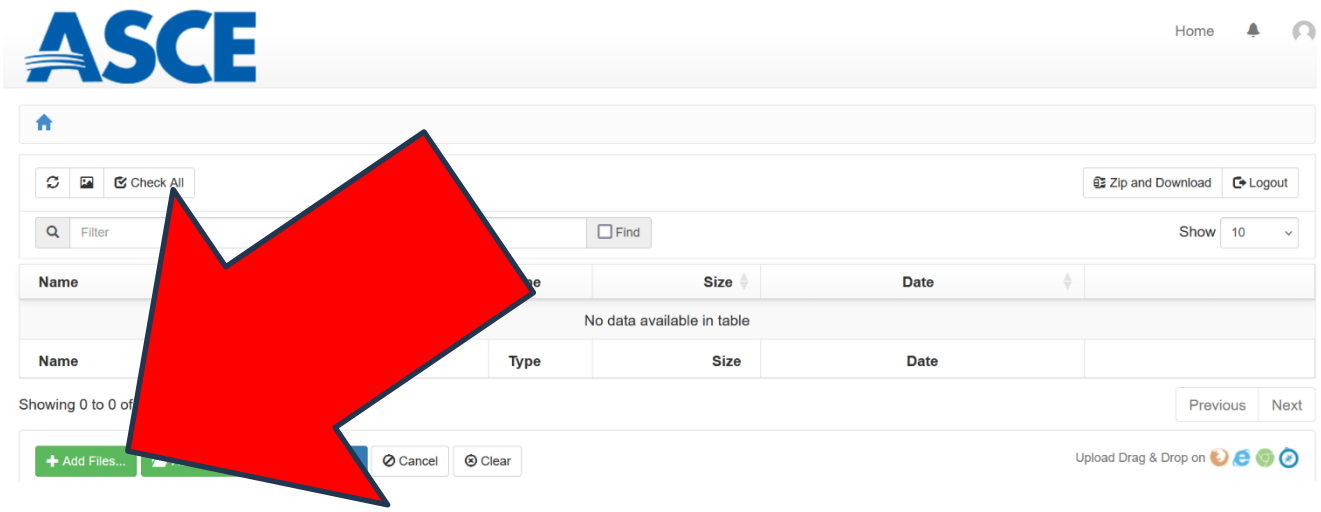
An ASCE Student Chapter must:

1. **Be in good standing with ASCE:**
   a. **Have paid their annual dues, as received by ASCE, no later than the start of their Student Symposium.**
   b. **Have submitted their student chapter's full Annual Report or EZ Annual Reporting Form no later than February 1, 11:59 p.m. EST.**

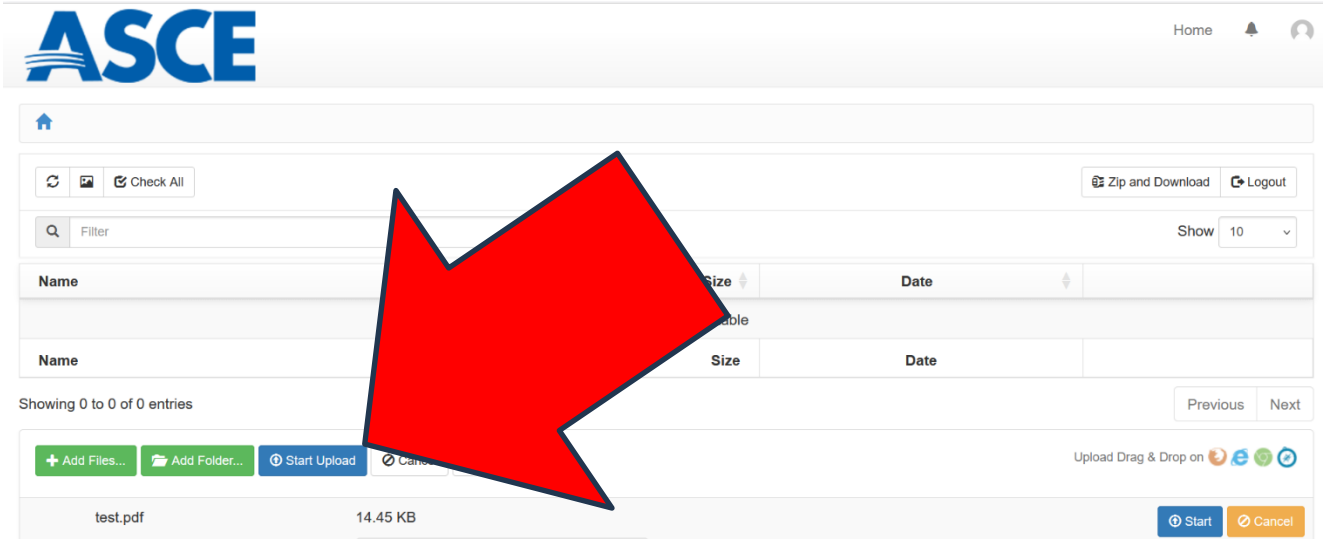
Questions regarding eligibility should be directed to student@asce.org.

APPENDIX D CERBERUS UPLOAD GUIDANCE

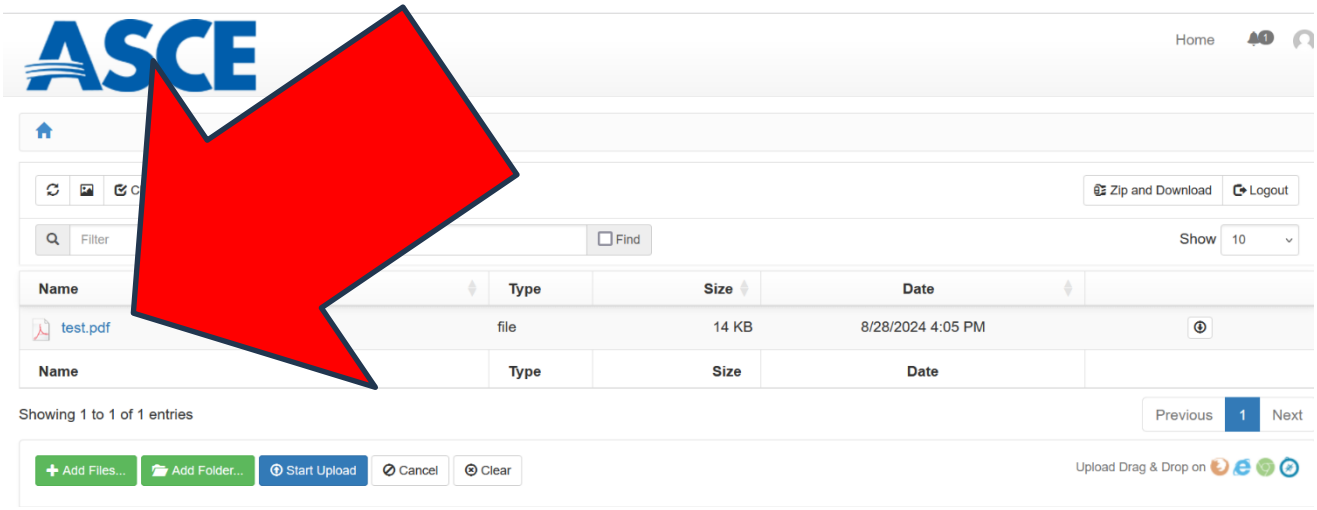
To add files to your Cerberus folder (secure link provided by ASCE), you can either click the **+Add Files** button and then browse to find the files to upload or drag and drop files to the area directly below the **+Add Files** button.



The selected (or dragged and dropped) files will appear in the upload area. To upload the file into the folder, click **Start Upload. (**To delete the uploaded file from the upload area, click **Cancel.**)



When the file has been successfully uploaded, the name of the file will appear under “name”.



Need help?

If you uploaded a file to the wrong folder or want to replace an uploaded file with a corrected version, send an email to student@asce.org and ask that the incorrect file be deleted. Include both the location (folder path) and the **exact name** of the file you want deleted, as well as a screenshot of the exact files you want deleted. (Files cannot be moved – you will have to upload the correct file to the folder after the incorrect version has been deleted).

APPENDIX E COMPETITION WINNERS 2026 AND PRIOR

2026 ASCE Student Symposia

Mid-Atlantic Student Symposium

April 18th at University of Pittsburgh at Johnstown

1st Place:	Morgan State	Honorable Mention:	N/A
BIM 1st Place:	Morgan State	Best in Show:	N/A

Eastern Great Lakes Student Symposium

April 10th at Youngstown State

1st Place:	University of Michigan	Honorable Mention:	Ohio Northern University
2nd Place:	Michigan Tech	Best in Show:	Michigan Tech
3rd Place:	University of Cincinnati		
BIM 1st Place:	University of Michigan		

Carolinas Student Symposium

April 4th at North Carolina A&T State

1st Place:	Clemson University	Honorable Mention:	N/A
2nd Place:	North Carolina State University	Best in Show:	Horry Georgetown Technical College
3rd Place:	University of North Carolina, Charlotte		
BIM 1st Place:	University of North Carolina, Charlotte		

Indiana-Kentucky Student Symposium

April 11th at University of Louisville

1st Place:	University of Louisville	Honorable Mention:	University of Kentucky
2nd Place:	University of Notre Dame	Best in Show:	Western Kentucky
3rd Place:	Purdue at West Lafayette		
BIM 1st Place:	University of Louisville		

Mid-South Student Symposium

April 11th at Tennessee Tech

1st Place:	University of Arkansas	Honorable Mention:	N/A
2nd Place:	Vanderbilt University	Best in Show:	N/A
3rd Place:	University of Tennessee, Knoxville		
BIM 1st Place:	University of Arkansas		

Gulf Coast Student Symposium

March 12th at Tuscaloosa

1st Place:	Auburn University	Honorable Mention:	University of Mississippi
2nd Place:	University of Louisiana, Lafayette	Best in Show:	N/A
3rd Place:	University of Alabama		
BIM 1st Place:	Auburn University		

Southeast Student Symposium

March 14th at Florida Atlantic

1st Place:	University of Puerto Rico, Mayaguez	Honorable Mention:	University of South Florida
2nd Place:	Georgia Institute of Technology	Best in Show:	Florida A&M – Florida State
3rd Place:	Florida International University		
BIM 1st Place:	University of Central Florida		

Frontier Student Symposium

April 18th at Texas A&M University, Corpus Christi

1st Place:	University of Texas at Austin	Honorable Mention:	Tecnologico de Monterrey
2nd Place:	University of Texas at Arlington	Best in Show:	N/A
3rd Place:	University of Texas at Rio Grande Valley		
BIM 1st Place:	University of Texas at Rio Grande Valley		

Rocky Mountain Student Symposium

April 24th at University of South Dakota

1st Place:	Colorado School of Mines	Honorable Mention:	North Dakota State University
2nd Place:	North Dakota State University	Best in Show:	Colorado School of Mines
3rd Place:	University of Colorado at Boulder		
BIM 1st Place:	Colorado School of Mines		

Intermountain Southwest Student Symposium

April 16th at University of Utah

1st Place:	Northern Arizona University	Honorable Mention:	Boise State University Brigham Young University
2nd Place:	University of Nevada, Reno	Best in Show:	Arizona State University
3rd Place:	University of Arizona		
BIM 1st Place:	University of Nevada, Reno		

Pacific Northwest Student Symposium

April 18th at University of Alaska, Anchorage

1st Place:	Montana State University	Honorable Mention:	N/A
2nd Place:	University of Washington	Best in Show:	N/A
3rd Place:	Washington State University		
BIM 1st Place:	University of Washington		

Pacific Southwest Student Symposium

March 30th at California State University, Los Angeles

1st Place:	California Polytechnic University, San Luis Obispo	Honorable Mention:	San Diego State University
2nd Place:	California Polytechnic University, Pomona	Best in Show:	University of Hawaii, Manoa
3rd Place:	University of California, Irvine		
BIM 1st Place:	California Polytechnic University, San Luis Obispo		

India Student Symposium

March 28th hosted Virtually

1st Place:	Vellore Institute of Technology	Honorable Mention:	N/A
2nd Place:	Shri Vishnu Engineering College For Women (A)	Best in Show:	N/A
3rd Place:	Mar Athanasius College of Engineering Kothamangalam		
BIM 1st Place:	Vellore Institute of Technology		

2025 ASCE Student Symposia

Eastern Great Lakes at Michigan Tech	1st Place: 2nd Place: 3rd Place: BIM 1st Place:	Michigan Tech University of Michigan Ohio Northern University University of Michigan
Carolinas at Clemson University	1st Place: 2nd Place: 3rd Place: BIM 1st Place:	Clemson University University of North Carolina, Charlotte Horry Georgetown Technical College Clemson University
Indiana-Kentucky at University of Notre Dame	1st Place: 2nd Place: 3rd Place: BIM 1st Place:	Purdue University at West Lafayette University of Louisville University of Notre Dame Purdue University at West Lafayette
Gulf Coast at University of Mississippi	1st Place: 2nd Place:	Auburn University Mississippi State University

	3rd Place: University of Louisiana, Lafayette BIM 1st Place: Auburn University
Southeast at University of Georgia	1st Place: University of Puerto Rico, Mayaguez 2nd Place: Georgia Southern University 3rd Place: Georgia Tech BIM 1st Place: Georgia Tech
Frontier at Tarleton State University	1st Place: University of Texas, Arlington 2nd Place: LeTourneau University 3rd Place: University of Texas, Rio Grande Valley BIM 1st Place: University of Texas, Arlington
Rocky Mountain at Colorado State University	1st Place: Colorado School of Mines 2nd Place: South Dakota School of Mines and Technology 3rd Place: University of Wyoming BIM 1st Place: Colorado School of Mines
Intermountain Southwest at University of Arizona	1st Place: Northern Arizona University 2nd Place: University of Nevada, Reno 3rd Place: University of Arizona BIM 1st Place: Northern Arizona University
Pacific Northwest at Portland State University	1st Place: University of Washington 2nd Place: Montana State University BIM 1st Place: University of Washington
Pacific Southwest at California Polytechnic State University, Pomona	1st Place: California Polytechnic State University, San Luis Obispo 2nd Place: California Polytechnic State University, Pomona 3rd Place: University of California, Irvine BIM 1st Place: University of California, Irvine

2024 ASCE Student Symposia

Eastern Great Lakes at University of Akron	1st Place: Michigan Tech 2nd Place: Cleveland State BIM 1st Place: Cleveland State
Indiana-Kentucky at Purdue NW University	1st Place: Purdue University at West Lafayette BIM 1st Place: Purdue University at West Lafayette
Southeast at University of Central Florida	1st Place: Florida A&M University – Florida State University 2nd Place: University of Puerto Rico, Mayaguez 3rd Place: Florida International University BIM 1st Place: University of North Florida
Region 6	1st Place: LeTourneau University

at Angelo State University	2nd Place: University of Texas, Arlington 3rd Place: University of Texas, Tyler BIM 1st Place: LeTourneau University
Rocky Mountain at University of Wyoming	1st Place: Colorado School of Mines 2nd Place: South Dakota School of Mines and Technology BIM 1st Place: Colorado School of Mines
Intermountain Southwest at Utah State University	1st Place: Utah State University 2nd Place: Northern Arizona University 3rd Place: Boise State University BIM 1st Place: Brigham Young University
Pacific Southwest at University of Hawaii, Manoa	1st Place: California Polytechnic State University, San Luis Obispo 2nd Place: University of California, Irvine 3rd Place: University of California, Los Angeles BIM 1st Place: California State University, Long Beach

2023 ASCE Student Symposia

Indiana-Kentucky at Western Kentucky University	1st Place: Purdue University at West Lafayette 2nd Place: Cleveland State University 3rd Place: Michigan Tech University BIM 1st Place: Purdue University at West Lafayette
Gulf Coast March 11th at University of South Alabama	1st Place: University of Alabama 2nd Place: Louisiana Tech University 3rd Place: University of South Alabama BIM 1st Place: University of Alabama
Southeast at University of North Florida	1st Place: Florida A&M University – Florida State University 2nd Place: University of Florida 3rd Place: University of Central Florida BIM 1st Place: Florida A&M University – Florida State University
Region 6 at West Texas A&M University	1st Place: LeTourneau University 2nd Place: Angelo State University 3rd Place: University of Texas, Tyler BIM 1st Place: Texas Tech University
Intermountain Southwest at University of Nevada, Reno	1st Place: Utah State University 2nd Place: Arizona State University 3rd Place: Boise State University BIM 1st Place: Utah State University
Pacific Northwest at Montana State	1st Place: Montana Tech University BIM 1st Place: Montana Tech University

University	
Mid-Pacific at California State University, Chico	1st Place: Zhejiang University BIM 1st Place: Tongji University
Pacific Southwest at California State University, Northridge	1st Place: California Polytechnic State University, San Luis Obispo 2nd Place: University of California, Irvine 3rd Place: University of California, San Diego California State University, Northridge BIM 1st Place: University of California, Irvine

2022 ASCE Student Symposia

Southeast Student Symposium at Florida State University	1st Place: Florida A&M University – Florida State University 2nd Place: University of Puerto Rico Mayaguez 3rd Place: Florida Atlantic University
Region 6 at University of Houston	1st Place: LeTourneau University
Gulf Coast at Auburn University	1st Place: Auburn University
Pacific Southwest at University of California, San Diego	1st Place: University of Hawaii Manoa 2nd Place: California State University, Long Beach 3rd Place: University of California, Los Angeles BIM 1st Place: University of California, Los Angeles
Intermountain Southwest at University of Nevada, Las Vegas	1st Place: University of Utah 2nd Place: Northern Arizona University 3rd Place: University of Arizona BIM 1st Place: Arizona State University

For a record of winners prior to 2022, please contact the TSDB Committee.