



ARCHITECTURAL DESIGN

OVERVIEW

Participants develop a set of architectural plans and related materials in response to an annual architectural design challenge and construct a physical, as well as a computer-generated model, to accurately depict their design. Students must demonstrate an understanding of and aptitude for architectural design, the development of plans, Leadership in Energy and Environmental Design (LEED) applications through construction and renovation, and modeling techniques and practices. The design problem for the current school year will be posted on the national TSA website under Competitions/Themes and Problems.

ELIGIBILITY

Participants are limited to one (1) team, or one (1) individual, per chapter; one (1) entry per team or individual.

TIME LIMITS


- A. Entries must be started and completed during the current school year.
- B. The semifinalist presentation/interview time will be limited to ten (10) minutes.
- C. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.

LEAP LEADERSHIP RESUME/INTERVIEW

A Team LEAP Leadership Resume is required for this event and must be submitted at event check-in. Semifinalists will respond to interview questions related to their submitted LEAP Resume for a maximum of five (5) minutes. A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

ATTIRE


Competition attire, as described in the [National TSA Dress Code](#) section of this guide, is required for this event.


 Participants in this event should concentrate their efforts on understanding all aspects of the design challenge prior to beginning the planning and design process.

Visit the U.S. Green Building Council website (www.usgbc.org) to become familiar with the council and its LEED green building programs.

PROCEDURE

- A. Participants access the design problem for the specific year's challenge found on the national TSA website. They then work to complete their entry according to the event regulations.
- B. Participants check in their entries and submit a LEAP Leadership Resume at the time and place stated in the conference program. No more than two (2) team members submit and place the model and documentation.
- C. Entries are reviewed by evaluators. Neither students nor advisors are present at this time. A semifinalist list in random order is posted.
- D. The individual semifinalist or two (2) representatives from each semifinalist team report to the event area at the time and place stated in the conference program. Semifinalists will sign up for a presentation/interview time and arrive at the designated location at this time.
- E. Semifinalists will use their models and documentation for reference during the presentation/interview process. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- F. No more than two (2) team members pick up the team's entry from the display area at the time and place stated in the conference program.

 Read the General Rules and Regulations section in the front of this guide for information that applies to all of TSA's competitive events.

 A model is neither a "miniature building," nor a mere illustration of a design concept. It serves as an assessment tool for the design. Too much detail can obscure important qualities, and not enough detail may generate an overly vague impression.

It is essential that students and advisors routinely check the TSA website (www.tsaweb.org) for updated information about TSA general rules and competitive events. This information is found on the website under [Competitions/Updates](#). When students participate in any TSA competitive event, they are responsible for knowing of updates, changes, or clarification related to that event.


REGULATIONS


- A. The architectural model must be placed on a site board, the size of which will be posted along with the annual problem each year on the TSA website.
- B. Documentation materials (comprising "an electronic/digital portfolio") are required and must be submitted in PDF format on a standard flash drive during check in. Participants must have a second flash drive copy of their portfolio with them at the conference as a back-up and for use in the semifinalist



presentation, should they advance to that level. The documentation must include the following single-sided, 8½" x 11" pages, in this order:

1. Title page with the event title, the conference city and state, and the year; one (1) page
2. Table of contents; pages as needed
3. A description of the individual/team's interpretation of the design challenge and an explanation of the style and merits of the design concepts; one (1) page
4. Demolition plan for the existing structure, succinctly listed: maximum of two (2) pages
5. List and description of each of the construction systems (any and all that apply) and their incorporation and application to the solution: building codes, building permits, construction methods and materials, electrical wiring, plumbing, HVAC, and site requirements; maximum of six (6) pages.
6. ALEED assessment for the project, according to the USGBC standards for green building; one (1) or more pages
7. A schedule of finish materials for all exterior and interior surfaces of the architectural design (this is not a list of the model construction materials); one (1) page
8. A complete set of reproduction copies of the original hand drawings and printer/plotter-generated copies of CAD drawings (a-e below) must be submitted with the model. Each drawing should be shown on maximum sheet cut size B [11" x 17"], with the appropriate scale noted on the drawing. A copy of each drawing also must be included on the flash drive. Drawings must be appropriately scaled to fit the PDF format required for submission.
 - a. original floor plan/s
 - b. sectional detail drawing
 - c. foundation plan
 - d. roof plan
 - e. landscape plan
9. Plan of Work log that indicates preparation for the event, as noted by date, task, time involved, team member responsible, and comments (see Forms Appendix or TSA website); pages as needed
10. Mentorship Verification form; students are required to seek the mentorship of an architect or other professional involved with construction and renovation (see Mentorship Verification form); one (1) page
11. A 3-D modeling/rendering drawing of the individual/team's final design with appropriate details included; drawing sheet size B, 11" x 17"; one (1) page. Drawing must be appropriately scaled to fit the PDF format required for submission.

 A hard copy set of CAD drawings, as well as the same drawings included on the flash drive, are required.

 Model construction: Participants are required to contact a local architect or an architectural design school to research and observe actual models in order to gain a greater perspective about the construction and assembly of an architectural model.



12. List of resources/references; pages as needed
- C. Nothing that identifies a participant's name, school, chapter, or state can be included on the model or portfolio.
- D. Model construction concepts, materials, techniques, and applications:
1. Balsa wood, illustration board, or similar materials are suggested (but not limited to) for use as interior walls, exterior walls, and roof construction.
 2. Foam core board that is ½" thick or greater is recommended for use as the site board for the model.
 3. Dowels may be used to represent columns or circular components.
 4. Participants should pay close attention to the scale of all materials as they relate to the scale of the model.
 5. The model may not include any electrical or battery-powered enhancements.

No glass or liquid may be used as part of any model.

- E. LEAP Leadership Resume (see Forms Appendix or TSA website)/Interview — Students document, in the LEAP leadership resume (see resume template), the leadership skills that they have developed and demonstrated while working on this event. Semifinalists will respond to questions about the content of their resumes as part of their presentation and/or interview. The LEAP Leadership Resume/interview guidelines and other resources can be found on the [TSA website](#). A team competing in this event will use the *Team LEAP Leadership Resume* template; an individual competing in this event will use the *Individual LEAP Leadership Resume* template.

EVALUATION

Evaluation is based on points earned for the digital portfolio, the design process, the architectural model, the LEAP requirements, and the semifinalist interview. Please refer to the official rating form for more information.



STEM INTEGRATION

This event aligns with the STEM educational standards noted below. Please refer to the STEM Integration section of this guide for more information.

Science, Technology, Engineering, Mathematics

TSA AND CAREERS

This competition connects to one or more of the career areas featured in the TSA AND CAREERS section of this guide. Use *The Career Clusters* chart and the *TSA Competitions and The Career Clusters* grid as resources for information about careers.

CAREERS RELATED TO THIS EVENT

Appraiser
Architect
Construction manager
Interior designer
Urban and regional planner



HIGH SCHOOL ARCHITECTURAL DESIGN MENTORSHIP VERIFICATION

I certify that I have served as a mentor to the student(s) named below.

Student(s) involved (please print)

Signature of student(s)

Date

TSA chapter advisor (printed name and signature)

Date

Name of mentor (please print)

Occupation (please print)

Employer (please print)

Signature of mentor

Date



ARCHITECTURAL DESIGN EVENT COORDINATOR INSTRUCTIONS

PERSONNEL

- A. Event coordinator
- B. Assistants for check-in, two (2)
- C. Evaluators for displays, two (2) or more
- D. Evaluators for semifinalist interviews, two (2) or more

MATERIALS

- A. Coordinator's packet, containing
 - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
 - 2. TSA Event Coordinator Report
 - 3. List of evaluators/assistants
 - 4. Pre-populated flash drives for evaluators
 - 5. Stick-on labels for entries, as needed
 - 6. Results envelope
 - 7. Envelope for LEAP Leadership Resumes
 - 8. LEAP Interview Judging Protocol
- B. Tables for entries
- C. Tables and chairs for evaluators

RESPONSIBILITIES

- A. Upon arrival at the conference, report to the CRC room and check the contents of the coordinator's packet. Review the event guidelines and check to see that enough evaluators/assistants have been scheduled.
- B. Inspect the area or room in which the event is being held for appropriate set-up, including room size, chairs, tables, outlets, etc. Notify the event manager of any potential problems.
- C. Check in the entries and collect LEAP Leadership Resumes at the time stated in the conference program. Anyone reporting who is not on the coordinator's report may check in only after official notification is received from the CRC. Late entries are considered on a case-by-case basis and only when the lateness is caused by events beyond the participant's control. Requirements for attire do NOT apply during check-in.

- D. Place an entry number label in the lower right-hand corner of each display and around the documentation flash drive.
- E. One (1) hour before the event is scheduled to begin, meet with evaluators/assistants to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the event begins.
- F. Evaluators independently assess the entries to determine the twelve (12) semifinalists.
- G. For participants who violate the rules, the decision either to deduct 20% of the total possible points or to disqualify the entry must be discussed and verified with the evaluators, event coordinator, and a CRC manager.
- H. Submit the semifinalist results to the CRC for posting.
- I. Conduct semifinalist interviews. The LEAP interview will be conducted as part of the semifinalist presentation/interview and will last a maximum of five (5) additional minutes.
- J. Evaluators determine the ranking of the ten (10) finalists and discuss and break any ties.
- K. Review and submit the finalist results and all items/forms in the results envelope to the CRC room.



Participant/Team ID# _____

ARCHITECTURAL DESIGN

2017 & 2018 OFFICIAL RATING FORM

HIGH SCHOOL

Go/No Go Specifications

Before judging the entry, ensure that the items below are present; indicate presence with a check mark in the box. If an item is missing, leave the box blank and place a check mark in the box labeled ENTRY NOT EVALUATED. If a check mark is placed in the ENTRY NOT EVALUATED box, the entry is not to be judged.

- Flash drive documentation is present.
- Model is present and submitted on a site board.
- Drawings are present.
- Completed LEAP Leadership Resume is present.
- ENTRY NOT EVALUATED

Documentation (100 points)

CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Evaluators: Using minimal (1-4 points), adequate (5-8 points), or exemplary (9-10 points) performance levels as a guideline, record the scores earned for the event criteria in the column spaces to the right. The X1 or X2 notation in the criteria column is a multiplier factor for determining the points earned. (Example: an "adequate" score of 7 for an X1 criterion = 7 points; an "adequate" score of 7 for an X2 criterion = 14 points.) A score of zero (0) is acceptable if the minimal performance for any criterion is not met.			
Portfolio components See Regulation B (X1)	Portfolio is unorganized and/or is missing three or more components.	Portfolio has most components and is generally organized; it has sufficient content.	All components are included in the portfolio; content and organization are excellent.
Description of design interpretation (X1)	The description of the design and style is unclear or vague.	The description of the design and explanation of the style are included; they are adequately presented.	The description and merits of the design and explanation of the style are clear, effective, and convincing.
Demolition plan (X1)	The demolition plan lacks key elements and a clear explanation.	The demolition plan is included, and is generally clear.	The demolition plan is completely detailed, clear, and effective.
Construction systems See Regulation B5 (X1)	There is little or no evidence of attention to the various construction systems.	Most, but not all, construction systems are addressed; they are generally well presented.	All applicable construction systems are addressed, clearly documented, and well presented.
Schedule of finish materials (X1)	Many elements of the interior and exterior finish schedules are missing or incomplete.	Most, but not all, elements of the interior and exterior finish schedules are included.	All interior and exterior finish schedules/materials are detailed and explained clearly.
LEED Assessment (X1)	Only a minor attempt has been made to incorporate a LEED assessment of the design.	Many, but not all, aspects of a LEED assessment of the design are provided and documented.	A complete and accurate LEED assessment of the design is included.
Drawings See Regulation B.8 (X2)	A few of the required drawings are present, but they are lacking in quality.	Most, but not all, of the required drawings are included and are in the proper format.	All required drawings are included and in the proper format.
Resources/references (X1)	There is little or no effort to provide resources and references.	Resources and references included are generally presented appropriately.	There is clear evidence of the appropriate use of applicable resources and references.
Plan of Work log (X1)	The Plan of Work log lacks major elements of documentation.	The Plan of Work log is somewhat complete, and generally reflects the time and work necessary for the project.	The Plan of Work log completely and accurately reflects the time and work necessary for the project.

SUBTOTAL (100 points)

Record scores in the column spaces below.



Design Challenge (50 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Effectiveness of design (X2)	The design is ineffective in meeting the needs of the challenge.	The design is somewhat effective in meeting the needs of the challenge.	The design is clearly effective in meeting the needs of the challenge.
Access and flow (X1)	The design reflects an ineffective traffic flow pattern and/or use of space to gain access to the structure.	The design reflects a somewhat effective traffic flow pattern and use of space to access the structure.	The design presents a clear, effective traffic flow pattern and full consideration of the use of space.
Aesthetic appeal (X1)	There is little evidence of consideration of aesthetics and curb appeal in the design.	There is some evidence that aesthetics and curb appeal have been considered in the design.	There is clear evidence that aesthetics and curb appeal are fully and effectively integrated into the design.
Creativity and innovation (X1)	The design lacks originality and exhibits few, if any, creative and/or innovative applications.	Some unique, innovative, and creative concepts are incorporated in the overall design.	Unique, creative, and innovative approaches are fully incorporated into the design.
SUBTOTAL (50 points)			

Model (70 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Quality of construction (X2)	Construction is of poor quality and appearance, with little or no attention to neatness.	Construction is somewhat neat and has appropriate quality and appearance.	Construction is of excellent quality and exemplary appearance.
Use of materials (X1)	The choice of materials is ineffective and inadequate for the type and scale needed.	There is effective choice of materials and some attention to scale.	There is effective and excellent use of materials and accurate choice of scale.
Design representation (X2)	The model is ineffective in depicting the requirements of the design challenge.	The model is somewhat effective in depicting the requirements of the design challenge.	The model clearly and effectively incorporates and depicts all aspects of the design challenge.
Landscape plan/site board (X2)	The site board is ineffective in portraying the elements of the landscape plan.	The site board is somewhat effective in representing most aspects of the landscape plan.	The site board effectively depicts all elements of the landscape plan.
SUBTOTAL (70 points)			

Rules violations (a deduction of 20% of the total possible points in the sections above) must be initialed by the evaluator, coordinator, and manager of the event. Record the deduction in the space to the right.

Indicate the rule violated: _____



Semifinalist Presentation/Interview (80 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
Organization (X1)	Participant(s) seems unorganized and unprepared for the presentation/interview.	Participant(s) is/are generally prepared/organized in the overall presentation/interview.	The presentation/interview is logical, well organized, and easy to follow.
Knowledge (X2)	Participant(s) seems to have little understanding of the concepts of the design challenge; vague answers to interview questions are provided.	An understanding of the concepts of the design challenge, and answers to questions, are adequate.	There is clear evidence of a thorough understanding of the design challenge; questions are answered well.
Articulation (X1)	The presentation and interview provide an unclear, unorganized, and or illogical description of the project.	The presentation and interview offer a somewhat logical and easy-to-understand project description.	The presentation/interview provides a clear, concise, and easy-to-follow description of the project.
Delivery (X1)	The team/individual is verbose and/or uncertain in the presentation/interview; participant posture, gestures, and lack of eye contact diminish the delivery.	The team/individual is somewhat well-spoken and clear in the presentation/interview; participant posture, gestures, and eye contact result in an acceptable delivery.	The team/individual is well-spoken and distinct in the presentation/interview; participant posture, gestures, and eye contact result in a polished, natural, and effective delivery.
Team participation (X1)	The full team/individual communicates with judges.	Most members of the team participate and generally seem to understand the event.	All team members participate with mutual understanding of the event and respond effectively to questions.
LEAP Leadership Resume/Interview See Regulation E and instructions on TSA website (X2)	The individual's or team's efforts are not clearly communicated, lack detail, and/or are unconvincing; few, if any, attempts are made to identify and/or incorporate the LEAP Be. Know. Do. criteria.	The individual's or team's efforts are adequately communicated, include some detail, are clear, and/or are generally convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is adequate.	The individual's or team's efforts are clearly communicated, fully-detailed, and convincing; identification and/or incorporation of the LEAP Be. Know. Do. criteria is excellent.
			SUBTOTAL (80 points)

Rules violations (a deduction of 20% of the total possible points in the semifinalist section) must be initialed by the evaluator, coordinator, and manager of the event. Record the deduction in the space to the right.

Indicate the rule violated: _____

(To arrive at the TOTAL score, add any subtotals and subtract rules violation points, as necessary.)

TOTAL (300 points)

Comments:

I certify these results to be true and accurate to the best of my knowledge.

Evaluator

Printed name: _____

Signature: _____