



# ARCHITECTURAL RENOVATION

## OVERVIEW

Participants develop a set of architectural plans and related materials for an annual architectural renovation design challenge and construct a physical, as well as a computer-generated model, to accurately depict their design. The design problem for the current school year will be posted on the TSA website under Competitions/Themes and Problems.

## PURPOSE

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.

## ELIGIBILITY

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

## TIME LIMITS


Entries must be started and completed during the current school year.

## ATTIRE

Competition attire, as described in National TSA Dress Code ([www.tsaweb.org/Dress-Code](http://www.tsaweb.org/Dress-Code)), is required for this event.

## PROCEDURE

- A. Participants access the design problem for the specific year's national conference on the TSA website. They then work to complete their entry according to the event regulations.
- B. Participants check in their entries at the time and place stated in the conference program. No more than two (2) team members submit and place the model and documentation.

 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](http://www.usgbc.org)) to become familiar with the council and its LEED green building programs.



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

- 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 their specified time.
- E. Semifinalists will use their models and documentation for reference during the presentation/interview process.
- 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.

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

## REGULATIONS



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.

- 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 "a portfolio") are required and should be secured in a clear front report cover. The report cover 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 how the individual/team interpreted 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 how each of the construction systems (any and all that apply) were incorporated and applied 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 reproduction copy of original hand drawings and printer/plotter-generated copies of CAD drawings for the required drawings (each drawing to be submitted on maximum drawing sheet cut size B [11" x 17"] with appropriate scale size noted on the drawing); pages as needed
    - 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 Plan of Work log); 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
  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 for (but not limited to) 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.***

## EVALUATION

Evaluation is based on points earned for the portfolio, the design process, the architectural model, and the semifinalist interview. For more specific information, please refer to the official rating form.



**Model construction –**  
Participants in this event are encouraged to contact a local architect or an architectural design school to research and observe actual models in order to gain a greater perspective on how to approach the construction and assembly of an architectural model.



**Participants**  
are encouraged to review all aspects of the official rating form to more clearly understand how their entry will be evaluated and judged.

## 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

## COMMON CORE STATE STANDARDS (CCSS) INTEGRATION

Please refer to the Common Core State Standards (CCSS) Integration section of this guide for more information.

## PRIMARY LEADERSHIP SKILLS

Leadership skills promoted in this event:

- COMMUNICATION — Students communicate ideas in order to develop a plan. Suggested leadership lessons: *Personality Types* and *Put It Together*
- CREATIVE THINKING — Students create original ideas based on specifications. Suggested leadership lessons: *HAT To Be Creative* and *The Leadership Chronicles*
- CRITICAL THINKING — Students research ideas and develop a plan. Suggested leadership lessons: *Critical Thinking Tips* and *The Hidden Message*

*Additional leadership skills promoted in this event: evaluation, organization, problem solving, self-esteem, teamwork*

## 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 16 Career Clusters* chart and the *TSA Competitions and The 16 Career Clusters* grid as resources for information about careers.

## CAREERS RELATED TO THIS EVENT

Appraiser  
Architect  
Construction manager  
Interior designer  
Urban and regional planner

## TECHNOLOGY STUDENT ASSOCIATION PLAN OF WORK

Date	Task	Time involved	Team member responsible	Comments
1				
2				
3				
4				
5				
6				
Advisor signature _____				



## HIGH SCHOOL ARCHITECTURAL RENOVATION MENTORSHIP VERIFICATION

**I certify that I have served as a mentor to the student(s) named below.** (This completed and signed form is a requirement of individual/team participation in the TSA competition, Architectural Renovation.)

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Student(s) involved (please print)

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Signature of student(s)

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Date

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TSA chapter advisor (printed name and signature)

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Date

---

Name of mentor (please print)

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Occupation (please print)

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Employer (please print)

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Signature of mentor

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Date

## ARCHITECTURAL RENOVATION 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 notebook, containing
  - 1. Event guidelines, one (1) copy for the coordinator and for each evaluator
  - 2. Official rating forms
  - 3. List of entries, with finalist report
  - 4. List of evaluators/assistants
  - 5. Pens for evaluators
  - 6. Notepads
  - 7. Semifinalist list for posting
  - 8. Results envelope
- 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 notebook. 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 at the time stated in the conference program. Anyone reporting who is not on the entry list may check in only after official notification is received from the CRC chairperson. 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 in the lower right-hand corner of each display and portfolio. Position displays for evaluation and viewing. Secure the entries in the designated area.
- E. One (1) hour before the event is scheduled to begin, meet with your 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.
- 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; all must initial either of these actions on the rating form.
- H. Evaluators average their scores to determine the twelve (12) semifinalists.
- I. Prepare a list of the twelve (12) semifinalists in random order and submit it to the CRC chairperson for posting.
- J. Inspect the area in which the interviews are to take place. There should be tables and chairs for the evaluators.
- K. Meet with your semifinalist evaluators to review time limits, procedures, and regulations. If questions arise that cannot be answered, speak to the event manager before the interviews begin.
- L. Conduct semifinalist interviews.
- M. Evaluators average their scores to determine the ranking of the ten (10) finalists. Evaluators discuss and break any ties.
- N. Complete and submit the finalist report, which includes a ranking of the ten (10) finalists, and all related forms in the results envelope to the CRC room.
- O. If necessary, manage security and the removal of materials from the area.



Participant/Team ID# \_\_\_\_\_

# ARCHITECTURAL RENOVATION

2015 &amp; 2016 OFFICIAL RATING FORM

HIGH SCHOOL

## Documentation (120 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 far right. The X1, X2 or X3 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 = 14points; and "adequate" score of 7 for an X3 criterion = 21 points.)			
<b>Portfolio components</b> See Regulation B (X1)	Portfolio is unorganized and/or is missing three or more components.	Portfolio is missing one or two components, and/or it is loosely organized, and/or it lacks sufficient content.	All components are included in the portfolio; content and organization are excellent.
<b>Description of design interpretation</b> (X1)	The description of the design and style is unclear or vague, and/or major grammatical/spelling errors are evident.	The description of the design and explanation of the style are included, but they are unclear and/or contain some grammatical/spelling errors.	The description and merits of the design and explanation of the style are clear, effective and convincing, and without grammatical/spelling errors.
<b>Demolition plan</b> (X1)	The demolition plan lacks key elements and a clear explanation.	The demolition plan is included, but lacks detail, and/or clarity, and/or effectiveness.	The demolition plan is completely detailed, clear, and effective.
<b>Construction systems</b> See Regulation B.5 (X1)	There is little or no evidence of attention to the various applicable construction systems.	Most, but not all, construction systems are addressed, but they are not well presented.	All applicable construction systems are addressed, clearly documented and well presented.
<b>Schedule of finish materials</b> (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 in an exemplary manner.
<b>LEED Assessment</b> (X1)	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.
<b>Drawings</b> 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 are exemplary in format.
<b>3D modeling or rendering</b> (X2)	The drawing is missing or poorly executed and does not use appropriate/necessary details of the design challenge.	The drawing is included, but it is missing some key elements and necessary details of the design challenge.	The drawing completely and effectively represents all aspects of the design challenge, including necessary details.
<b>Resources/references</b> (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.
<b>Plan of Work log</b> (X1)	The Plan of Work log lacks major elements of the plan 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.
<b>SUBTOTAL (120 points)</b>			

Record scores in the column spaces below.

ARCHITECTURAL RENOVATION (continued)				
Design Challenge (50 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
<b>Effectiveness of design</b> (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 exemplary and clearly effective in meeting the needs of the challenge.	
<b>Access and flow</b> (X1)	The design reflects an ineffective traffic flow pattern and use of space to gain access to the original structure and addition.	The design reflects a somewhat effective traffic flow pattern and use of space to access the structure and addition.	The design presents a clear, effective traffic flow pattern and full consideration of the use of space.	
<b>Aesthetic appeal</b> (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.	
<b>Creativity and innovation</b> (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 have met the challenges of, and have been incorporated into, the design.	
<b>SUBTOTAL (50 points)</b>				
Model (70 points)				
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points	
<b>Quality of construction</b> (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.	
<b>Use of materials</b> (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.	
<b>Design representation</b> (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.	
<b>Landscape plan/site board</b> (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.	
<b>SUBTOTAL (70 points)</b>				

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

Indicate the rule violated: \_\_\_\_\_

ARCHITECTURAL RENOVATION (continued)			
Semifinalist Presentation/Interview (60 points)			
CRITERIA	Minimal performance 1-4 points	Adequate performance 5-8 points	Exemplary performance 9-10 points
<b>Organization</b> (X1)	Participants seem unorganized and unprepared for the presentation/interview.	Participants are generally prepared for the interview and somewhat organized in their overall presentation/interview.	Participants' presentation/interview are logical, well organized, and easy to follow.
<b>Knowledge</b> (X2)	Participants seem to have little understanding of the concepts of their design challenge and offer vague answers to interview questions.	Participants have a general understanding of the concepts of the design challenge and answer questions relatively well.	Participants show clear evidence of a thorough understanding of the design challenge and effectively communicate their responses to all questions.
<b>Articulation</b> (X1)	The presentation and interview are full of illogical thoughts that lack understanding and clarity.	The presentation and interview are somewhat logical and easy to understand and follow.	The presentation and interview provide a clear, concise, and easy-to-follow description of the project.
<b>Delivery</b> (X1)	Participants are verbose, and/or illogical in their presentation/interview, and/or use many "uhs, ums, hmms," etc.	Participants are logical and fairly well spoken, with little use of "uhs, ums, hmms," etc.	Participants are logical, well-spoken, and distinct throughout the presentation/interview..
<b>Team participation</b> (X1)	Only one person on the team communicates and responds to questions.	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.
			<b>SUBTOTAL (60 points)</b>

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

Indicate the rule violated: \_\_\_\_\_

(To arrive at TOTAL score, add any subtotals and subtract rules violation points, as necessary. Check your math twice!) **TOTAL (300 points)**

Comments:

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

Evaluator

Printed name: \_\_\_\_\_

Signature: \_\_\_\_\_