

2017

## Las Vegas: Engineering Jury Feedback

Solar Decathlon Jury

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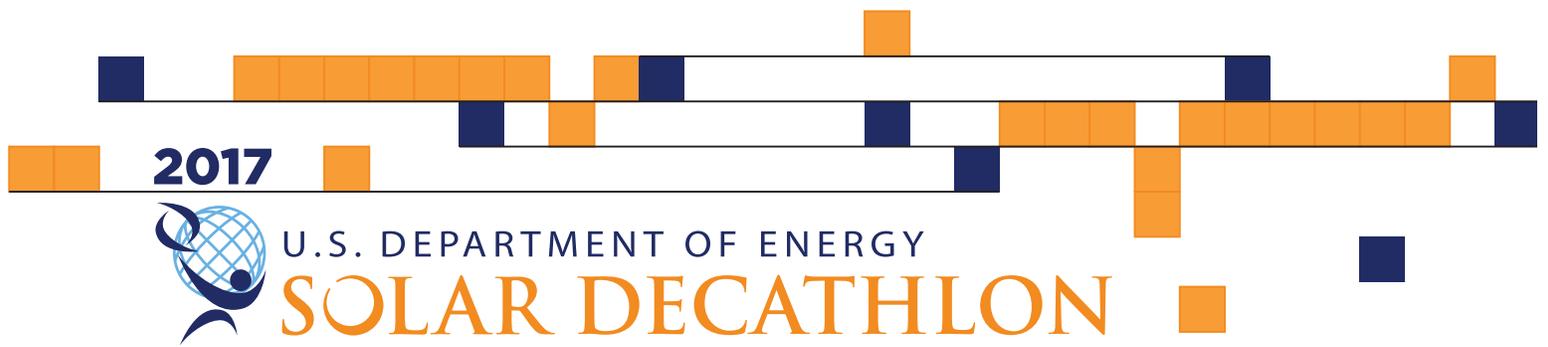
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## Las Vegas ENGINEERING JURY FEEDBACK

10/14/2017

Hello Las Vegas,

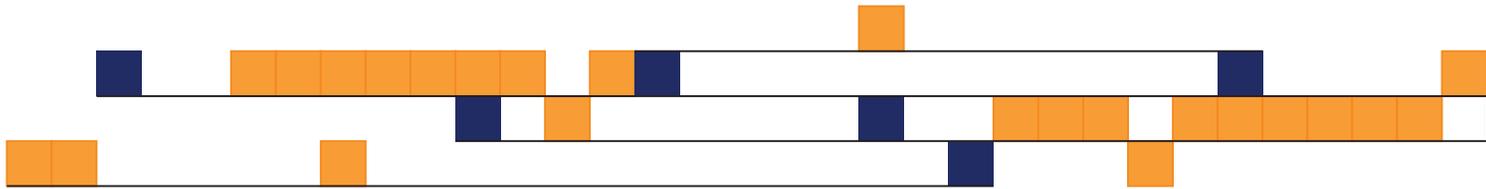
Please find below some brief comments and feedback provided by the Engineering jury for Solar Decathlon 2017. Note that this feedback is meant to be illustrative of their thoughts, but is not, and cannot be, comprehensive. The jury's ultimate decision and scoring result from a compendium of information and considerations, both of your pre-event jury deliverables and the on-site project and tour.

As juries are inherently subjective, the Solar Decathlon organizers are not able to provide further clarification or feedback beyond what is included here. Similarly, as indicated in Rule 2-9: Protests, the opinions of a jury cannot be protested. Only factual errors and mistakes may be protested.

Thank you for all of your work and continued engagement in this project.

Joe and the Solar Decathlon Organizers





## Las Vegas ENGINEERING JURY FEEDBACK

10/14/2017

- Beautiful documentation, comprehensive modeling and drawing – the consistency of the graphics was very impressive.
- The innovative PCM ERV was very well done, specific to the target climate and impressive in execution.
- Terrific solutions, such as hand washable filters for the target demographic.
- Well-designed custom controlled app; useable and informative.
- Very good use of energy modeling and well-presented materials.
- Good integration and composition of separate mechanical room and electrical closet on the exterior – very smart design all around.
- Use of wall-hung mechanical units was out of character with the quality level of the rest of the project. A better integration of architectural and mechanical systems would have been more appropriate.
- Terrific use of THERM models on the envelope, though significant thermal bridges (and low surface temps) are clearly shown in the simulations and remain unaddressed. PSI-Value calculations would have been a good second step after simulations in order to quantify the thermal bridge levels.

In accordance with the Rules, Appendix B-1, Phase 3: Deliberation, the jury considered the following 4 classes for the evaluation criteria. Occasionally, the jury may have chosen not to leave a class-rating for a particular criteria. The use of classes was entirely optional by jurors.

Class #1: ECLIPSES contest criteria 91% – 100% of available points  
Class #2: EXCEEDS contest criteria 81% – 90% of available points  
Class #3: EQUALS contest criteria 61% – 80% of available points  
Class #4: APPROACHES contest criteria 0% – 60% of available points



<b>APPROACH</b>	<b>Las Vegas</b>
To what extent were unique approaches used to solve engineering design challenges?	EQUALS
To what extent does the design demonstrate research, multidiscipline collaboration, market-leading technologies, and engineering integration?	EQUALS
To what extent did the team use energy modeling and analysis to guide design decisions integrated into the competition prototype?	EXCEEDS
<b>DESIGN</b>	
How well will house systems and design details function together?	EQUALS
How well will the home's envelope and active comfort systems maintain occupant comfort in the permanent site location yearround, including but not limited to: air temperature, humidity, surface temperatures, temperature asymmetries and stratifications?	EQUALS
How appropriately are energy systems sized for estimated annual performance of the competition prototype house at its target location?	EXCEEDS
<b>EFFICIENCY</b>	
To what extent is energy efficiency considered as part of the design?	EXCEEDS
How effective, efficient, and successful is the design in its engineering approach?	EXCEEDS
<b>PERFORMANCE</b>	
How well does the design address maintenance, longevity, lifecycle costs, and owner operation?	EXCEEDS
Extent to which a homeowner will be able to operate the house as the team intended?	EXCEEDS
How effectively does the prototype's envelope design and material specification manage potential issues from moisture, condensation, and mold?	EXCEEDS
<b>DOCUMENTATION</b>	
How accurate, complete, and clear are the competition drawings and specifications?	ECLIPSES
To what extent was the energy model created in a professional and accurate manner?	ECLIPSES
How effectively did the reviewed deliverables reflect the constructed project and enable the jury to conduct a preliminary evaluation of the design prior to its arrival at the competition site?	ECLIPSES