

SOLAR DECATHLON 2011

Request for Proposals

Amendment No. 4

RFP Issue Date: August 18, 2009

Amendment No. 1 Issue Date: November 3, 2009

Amendment No. 2 Issue Date: January 20, 2010

Amendment No. 3 Issue Date: January 27, 2010

Amendment No. 4 Issue Date: February 19, 2010

Conceptual Design Proposal Supplement Deadline: March 16, 2010, at 4 p.m. (Mountain Time)

This amendment to the Request for Proposals (RFP) is being issued to provide answers to the technical questions that were received, and revise the statement beneath the deliverable table in Attachment E, Statement of Work.

Answers to the Technical Questions

1. The scale model format is indicated at 1:50. Is that in inches to feet, inches to inches, Inches to centimeters, centimeters to meters, etc.? Please clarify the units NREL is expecting us to build the model by.

[This scale is dimensionless because the units on either side of the ratio are the same, i.e., 1 in.:50 in., 1 mm:50 mm, etc. The architects on your team should be very familiar with this notation.](#)

2. Is there a minimum or maximum format any scaled drawings should be drawn to?

[No. Select scales that are appropriate for whatever you are trying to represent on the display board.](#)

3. Were the 'Competitive Range' proposals selected from a full review of the qualitative merit criteria of Technical Innovation and Design, Fund Raising and Team Support, Organization and Project Planning and finally Curriculum Integration or just on the submission of required information (i.e. forms, page count)?

[A complete review of all proposal content was conducted to determine the "Competitive Range" proposals.](#)

4. In the past Decathlons the Solar Envelope and Lot Size was information included in the Rules and Building Code documents. Since the change to the Solar Envelope and lot size were called out in this amendment will these be the only difference between the 2009 competition and 2011 rules and building code?

No, there are many other changes. Carefully read the draft Solar Decathlon Rules posted on the [SD2011 Web page](#). The SD2011 Building Code will be posted soon. The most significant changes to the Building Code from 2009 are 1) fire suppression sprinkler systems are required per 2009 IRC Section 313; and 2) exterior stairs are prohibited. Regarding the prohibition of exterior stairs, the SD2011 Building Code states that “all changes in elevation used as part of the public tour, accessible route, or means of egress shall be provided with sloped walking surfaces or ramps.”

5. Can you provide us the date in April when teams will be notified of their acceptance?

We do not have an exact notification date at this time.

6. Should the Scale Model represent the Unit and its presentation on the Decathlon Lot size?

Not necessarily. If you can represent your “primary dwelling structure and any accessory structures required to convey the conceptual design intent” on a lot that is smaller than competition lot size, that is acceptable. However, if your primary dwelling structure and accessory structures fill the entire lot, then your model shall represent the entire lot. In either scenario, please clearly indicate the north direction, so we know how to properly orient your model.

7. May additional models be presented in addition to the required Unit model? Our unit proposal is one of many in a multifamily residential building and we are wondering if an additional model that shows the unit as it is inserted with its neighbors will disqualify our proposal?

Additional units may not be represented in the scale model, but they may be represented on the display board if they comply with Rules 6-4 and 6-5 in the draft SD2011 Rules.

8. In amendment 2 it is stated that the nominal finished floor area is changed to 600 s.f. to 1000 s.f.. However, in Rule 6-2. (Maximum Architectural Footprint) the "architectural footprint", including building and components, shall not exceed 800 s.f.. We assume that the amendment 2 is the correct statement, and in the Rules of 2011 #6-2 will be adjusted. If this is not the case, could you please explain?

That is correct. Please see Rule 6-2 in the draft SD2011 Rules.

9. Amendment #3 allows a larger scale model to be fabricated but you have not clarified the units to build by. This is important to us for detail purposes.

Please see the answer to question #1.

10. Assuming we are chosen as one of the 20 teams, how closely would we be held to our conceptual design proposal? If deviations were to occur as it was developed, would this be held against us?

Unlimited modifications to your conceptual design are permitted after you are selected.

11. Besides the one page description of the project, are we allowed to include additional text on the presentation boards? If so, is there any limitation to the amount of text included?

There is no stated limit, but we encourage you to limit additional text to labels and very brief descriptions of specific design features.

12. We would like a clarification on the wording: "Three-dimensional work will not be accepted, but may be included as two-dimensional reproductions incorporated onto the display board." Does this mean that we may or may not include 3D renderings or sketches on our presentation board assuming they do not project from the board?

You may include 3D renderings or sketches on your display board.

13. Is the physical model expected to include the entire site? a base? Are we encouraged to articulate the site design?

Please see the answer to question #6. You may articulate the entire site design, but it is not required.

14. Can this model include any form of lighting or digital display?

No.

15. We are in the process of preparing for the 2011 solar decathlon and we had a question regarding the square footage. Are porches, un air conditioned or heated spaces part of any square footage? What is the definition for your "finished space"

At this point in time, we will not offer specific interpretations of ANSI Z765-2003, "Square Footage—Method for Calculating."

16. Will there be further information about the Affordability Contest?

Please refer to "Contest 5. Affordability" in the draft SD2011 Rules for all currently available information about that contest.

17. For the affordability contest, will there be baseline cost data as a measure, such as RS Means Construction Cost Date for teams' planning?

Baseline cost data will not be provided at this time. The only available reference information at this time is on the [Solar Decathlon Web site](#). However, the approach used to estimate costs in SD2011 may differ to some degree from the approach used in SD2009.

18. For the affordability contest, will there be methods for addressing regional, national, and international cost differences?

Yes. This will be addressed by a professional cost estimating firm in coming months.

19. For the affordability contest, how will labor be addressed, again including with respect to regional or national differences?

Labor cost differences will be normalized, but the exact normalization approach has not been determined at this time.

20. For the Affordability contest, how might reclaimed and repurposed materials be assessed?

This will be addressed by a professional cost estimating firm in coming months.

21. For the affordability contest, how might proposals that use prefabricated or modular methods be evaluated? For instance, the cost efficiencies achieved with a modular or prefabricated design constructed in wood are different than if the design were stick-built.

This will be addressed by a professional cost estimating firm in coming months.

22. For the affordability contest, will landscape elements be included in the cost assessment, for instance plant materials that are NOT indoor potted plants?

Landscape elements will almost certainly be included in the cost estimates. This will be addressed by a professional cost estimating firm in coming months.

23. We were wondering how you were going to determine which side of the mall the teams are going to be on, if selected. While we are currently planning on designing a house that will be successful on both sides, we obviously will have an ideal side, and it would be nice to be able to plan for that.

You will be able to select your lot within two weeks of selection notification. The lot selection order will be determined in a random drawing. The team that selects first can choose any lot on either side of the village. The team that selects second can choose any lot, except for the lot selected by the team that selected first. The process will continue in this manner until we get to the twentieth and final team. That team will be assigned the remaining available lot.

24. How closely does the actual design of the houses have to be to what we submit in March. Is there room for significant change? Will there be penalties for changing components of the design?

Please see the answer to question #10.

25. What is included in the finished square footage. According to rule 6-2 in the 2011 draft rules, the method of calculation is based on ANSI Z765-2003. That standard states that "Garages and unfinished areas cannot be included in the calculation of finished square footage". Our interpretation of this standard and also the solar decathlon rules is that garages can be included in the home and the area will not count towards the overall area (600-1000 sq ft) of the home. Can you confirm that this statement is correct? We understand that the garage would still have to comply to the solar envelope dimensions.

Please see the answer to question #15. We will not deviate from the referenced standard. So, if we determine that the quoted statement is correct and does not warrant further interpretation, then the garage will not count in the square footage. Interpretation will only be necessary when the referenced standard is unclear.

26. What are the exact drawing requirements for the submission of the 3x4 ft. presentation board? If those requirements are related to the conceptual design of each particular project, are there any common requirements, so that the comparison of different projects is facilitated?

The only requirements are those specified in RFP Amendments 2 and 3.

27. Are trellis systems on the deck that neither carry any movable parts, nor any collectors, but function only as extended banister/handrail systems counted towards the maximal footprint?

Please see the answers to questions 15 and 25.

28. Is there a PV cap?

No.

29. Can the PV array or other elements of the house (i.e. roof and other overhangs) exceed the conditioned space?

The PV array and other elements of the design may be located outside of the finished square footage. See ANSI Z765-2003 for the exact definition of finished square footage. Also see the answers to questions 15 and 25.

30. Can there be components of the design that are unattached to the house (i.e. PV)?

Yes. See the answer to question #29.

31. Do bare cells have to be available already encapsulated from the manufacturer? Or is it alright to use cells from one company and encapsulation from another, as long as both services are available to the public?

Assuming the assembled modules comply with Rule 8-1 and relevant provisions in the SD2011 Building Code, you may use bare cells from one manufacturer and encapsulation from another.

32. Are we allowed to store energy as long as it is not electrical (i.e. mechanical or hydrogen)?

All electrical energy storage devices are subject to the provisions in Rule 8-3. Electrical energy storage devices other than electrochemical batteries will be evaluated for safety on a case-by-case basis. In the past, flywheels were not permitted and hydrogen storage was permitted only with the express permission of the Washington, DC fire department. We do not anticipate any changes to these rules in SD2011.

Thermal energy storage is permitted, but shall comply with the SD2011 Building Code.

33. If a team applies for state PV tax credit would it offset the overall PV cost for use in the Affordability contest?

No.

34. If used materials are implemented, should the associated cost be for the retail new price, or the cost of the used material, assuming the same costs are available to the public.

This will be addressed by a professional cost estimating firm in coming months.

35. Beyond the "narrative summarizing the most important elements of the conceptual design solution", are there any specific expectations for the display board (i.e., diagrams of technical systems, specifications, cost analysis, etc.)?

No. The only requirements are those specified in RFP Amendments 2 and 3.

36. Parts of our conceptual design may require additional information from NREL, such as the solar PV and thermal caps. Has this been finalized?

There are no solar capacity limits.

37. Does furniture count into the cost of the house that will part of the assessed value of the house? Loose furniture? Built-in furniture?

Built-ins will count. The question about “loose” furniture will be addressed by a professional cost estimating firm in coming months.

38. Regarding the triptych poster board:

- a. Are we allowed to label and place notes on the drawings or is the 500 word narrative the only written word allowed?
- b. Can the folding leafs of the board be any dimension we choose or is there a standard fold line that must be observed?

The answer to question #38a is the same as the answer to question #11.

The width of each of the two folding leaves shall be 25% of the total width of the triptych display board when laid flat.

39. We know that this is to be a blind review so we should not use our University name, however, are we allowed to use our concept names such as "HomeSolar", etc?

Yes, as long as the concept name doesn't reveal or suggest the name or exact location of the university.

40. Our conceptual design involves both finished and unfinished space that is separated from the main "house." We will follow the total square footage rules specified in ANSI Z765-2003; however, we wanted to confirm that having these separate buildings does not violate any other Solar Decathlon rules.

The design of multiple, disconnected finished areas is not prohibited.

41. Has a maximum capacity for solar PV and thermal been decided upon or has this been addressed indirectly in the new rules by the affordability contest and the removal of extra points for exceeding the net zero goal?

There are no solar capacity limits.

42. Can we use Gator Board instead of regular form board for the panel as it is more sturdy and would resist transportation impacts better? The thickness and appearance is similar to that of foam board.

You may use Gator Board.

43. Can our submission relate to the written proposal we already submitted? Can we use the same title / name of the project or do we have to make sure our submission can formally not be traced back to our proposal until the author letter gets opened?

The Conceptual Design Proposal Supplement may relate to the written proposal in terms of the design themes or substance. You may use the same title/name of the project, consistent with limitations provided in the answer to question #39. The supplement may not reference the written proposal already submitted, such as a page or table number. The conceptual design evaluation will be conducted independent of and without any access to the written proposal.

44. Can our model be in two parts if it stays within the overall weight limit? Our concept is largely based on the Mall and another site condition with very specific character so we would like to show both setups.

No, the model shall be shipped and displayed in one piece. If the model consists of multiple components, the components shall be firmly attached to each other or firmly mounted on a base in the desired orientation. Also, please see the answer to question #7 regarding “another site condition.”

The maximum size of the model is limited to the solar envelope (Rules 5.1 and 5.2) and the scale that you choose, i.e., 1:50 or 1:48. A weight limit is specified only to limit shipping costs and minimize handling requirements.

45. Why was the qualitative lighting design contest cut from the competition?

The stand-alone Lighting Design contest was removed to make room for the new Affordability contest. However, daylighting quality and electric lighting quality will be evaluated by the Architecture Jury. One or more lighting experts will serve on the Architecture Jury. Lighting controls will be evaluated by the Market Appeal and Engineering juries.

46. What is the width of the main road for the competition, Decathlon Way, and the side streets?

The village is redesigned before every competition, so we cannot provide exact dimensions at this time. However, a review of the [Flickr photo library](#) should give you a general sense of the size and scale of the Solar Decathlon village.

Revisions to Attachment E, “Statement of Work”

- In Section 6.0, the deliverables schedule table is deleted and is replaced with the following:

6.0 DELIVERABLES

Due Date	Payment	Deliverable Name		Format	Comments
PHASE I (\$50k total)					
August 17, 2010	5%	Web Site		URL	<ul style="list-style-type: none"> • Must be code compliant • Corrections and resubmittal due 14 days after receipt of reviewer comments
November 23, 2010	10%	Design Development Phase	Building Information Model	Revit*	<ul style="list-style-type: none"> • 80% design development • Corrections and resubmittal due 14 days after receipt of reviewer comments
	20%		Drawings	DWF	
			Project Manual	PDF	
5%	Health and Safety Plan		PDF	<ul style="list-style-type: none"> • Includes Project Manager's, Construction Manager's, and Health and Safety Officer's proof of recent OSHA 30-hour construction safety training • Corrections and resubmittal due 14 days after receipt of reviewer comments 	
January 4, 2011	5%	Virtual House Tour		3ds Max*	Must be presented by one or more student team members at the 2011 International Builders Show in Orlando, FL
	5%	Physical Model		1:24 Model	
PHASE II (\$50k total)					
March 22, 2011	5%	Construction Documentation Phase	Building Information Model	Revit*	<ul style="list-style-type: none"> • Must demonstrate code compliance and reflect final design • Corrections and resubmittal due 14 days after receipt of reviewer comments
	20%		Drawings	DWF	
			Project Manual	PDF	
	5%	Stamped Structural Drawings		PDF	<ul style="list-style-type: none"> • Must be suitable for submission to National Park Service and reflect final design • Corrections and resubmittal due 14 days after receipt of reviewer comments
Stamped Structural Calculations		PDF			
April 26, 2011	5%	Project Summary		PDF	Corrections and resubmittal due 14 days after receipt of reviewer comments
June 30, 2011	5%	Public Exhibit Materials		PDF	Corrections and resubmittal due 14 days after receipt of reviewer comments
Fall 2011	5%	Disassembly		n/a	Safe, National Park Service-compliant disassembly of the project and complete, on-time removal of all equipment and project components from the competition site
November 22, 2011	5%	Final Report		PDF	Corrections and resubmittal due 14 days after receipt of reviewer comments

* The building information model shall be submitted as a Revit file. Teams shall coordinate any training needs directly with the software providers. NREL is not responsible for providing or coordinating software training.