



U.S. DEPARTMENT OF ENERGY
SOLAR DECATHLON

**ATTACHMENT BC-1:
BUILD CHALLENGE PROPOSAL
REQUIREMENTS**

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Introduction

This document is an attachment to the [Solar Decathlon Competition Guide](#). Teams are encouraged to read the Competition Guide first to best understand this document.

All teams applying for the U.S. Department of Energy Solar Decathlon Build Challenge must submit an application, including a \$100 fee, by Nov. 6, 2018.

Build Challenge applicants must also submit a comprehensive Proposal, including a project management plan, along with their application by November 6, 2018. After an expert review process described in Section 2 of this document, DOE will select participating teams. Applicants not selected to proceed in either Build Challenge Divisions (i.e., National Showcase or Local Build) will be provided the opportunity to join the Design Challenge. The teams selected to proceed with the Build Challenge will also participate in the Design Challenge Weekend at NREL in April 2019.

The organizers expect to accept approximately six teams for each Build Challenge Division (i.e., six National Showcase and six Local Build), for 12 total teams.

For the Solar Decathlon 2020 Build Challenge, DOE expects to inform applying teams of their status in December 2018.

This document outlines all requirements for the Build Challenge Proposal and provides information regarding the review and evaluation process.

Submit questions regarding the Build Challenge Proposal to SDbuild@nrel.gov.

1 Proposal Requirements

Proposals are required to follow a standard format as described here.

1.1 Format Requirements

- The Proposal shall be submitted as a single PDF.
- The Proposal shall be 30 pages or less. If Proposals exceed the maximum page limit, the selection team will review only the first 30 pages and disregard any additional pages.
 - The cover page will not be counted as part of the 30-page maximum.
 - The appendices will not be counted as part of the 30-page maximum.
- Page margins should be 1 inch, excluding headers, footers, and page numbers.
- All units of measurement should be given in English and SI (metric) values.
- All artwork should be clean and legible.

1.2 Proposal Content

The following sections are required and shall appear in the following order.

1.2.1 Cover Page (approximately one page)

The cover page shall include the signature of an authorized official of each participating collegiate institution and a short summary of the team's approach to participation in the Solar Decathlon Build Challenge, including the intended Division (i.e., National Showcase or Local Build).

1.2.2 Table of Contents (approximately one page)

The table of contents should include section headers and page numbers.

1.2.3 Introduction (approximately two pages)

The introduction should be presented first and should provide a brief overview of the entire Proposal. It should indicate how the team is structured and why the team believes it will be successful in its participation and competition in the Solar Decathlon 2020 Build Challenge. It should summarize the support of the leadership from the team's collegiate institution; identify the team's target market; indicate the expected construction location; specify an approach to securing industry mentors or partners; and provide an understanding of the time, financial, and overall commitment necessary for success in the Solar Decathlon Build Challenge.

1.2.4 Technical Team Approach and Innovation (approximately four pages)

The information should demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the "Technical Team Approach and Innovation" topic in the Evaluation Criteria section of this document.

1.2.5 Fundraising and Budgeting (approximately two pages)

The information should demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Fundraising and Budgeting” topic in the Evaluation Criteria section of this document.

1.2.6 Organization and Project Planning (approximately five pages)

The information should demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Organization and Project Planning” topic in the Evaluation Criteria section of this document.

1.2.7 Conceptual Design (approximately ten pages)

The information should demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Conceptual Design” topic in the Evaluation Criteria section of this document.

Graphics (e.g., sketches, drawings, diagrams, and so on) and a one-page, 500-word maximum narrative summarizing the most important elements of the conceptual design solution should be provided.

1.2.8 Collegiate Institution and Community Support (approximately three pages)

The information should demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Collegiate Institution and Community Support” in the Evaluation Criteria section of this document.

1.2.9 Special Considerations (approximately one page)

This section should include any other considerations that may make the team especially suited for participation in this competition.

1.2.10 Conclusions (approximately two pages)

This section should justify and summarize the reasons for your team’s selection for participation in the Solar Decathlon Build Challenge.

1.3 Appendix Content

The appendix is required, with elements to be included described below.

1.3.1 Executive Summary (exactly one page)

The Proposal shall include a one-page summary abstract of the project. The executive summary must contain a summary of the proposed activity suitable for review during the evaluation process and for drawing high-level information about the Proposal for both internal and external summaries. It should be a self-contained page that identifies the name of the applicant school(s), the team leadership, and the project title. It should also include a project summary, the objectives of the project, the potential impact of the project (i.e., benefits and outcomes), and select relevant imagery or drawings.

1.3.2 *Letter(s) of Commitment (at least one page)*

The Proposal shall include at least one letter of commitment from the leadership of all participating collegiate institutions that make up the applicant team. The letter shall be on the collegiate institution's letterhead and signed. Additionally, teams may include letters of support or commitment from industry partners, faculty, or other potential collaborators.

1.3.3 *Project Budget (no page limit)*

Teams shall submit, as part of the appendix, a project budget that outlines all expected costs of participating in the Solar Decathlon Build Challenge, including both cash and in-kind commitments, with breakdowns for construction materials, equipment, facilities, subcontractors, student financial incentives, faculty time, and other related expenses.

The budget must be for the project as a whole, including all work to be performed by the collegiate school(s), industry partners, and their subrecipients or contractors.

1.3.4 *Optional Additional Appendices (no page limit)*

As appropriate and desired, Proposals can include supplemental information such as resumes of team members, letters of support, products under consideration, research projects, site data, and tables of supporting data.

1.4 General Notes

This Build Challenge Proposal Requirements document is provided with the intent to make the preparation process easier for the proposing institutions and the review process fair and comprehensive for the evaluation panel.

Although the appearance of a Proposal is important, the emphasis should be placed on the content and the Proposal organization. With good logic, clear sentences, and correctly spelled words, the reviewers can more quickly understand the Proposal and prevent any misunderstandings.

2 Evaluation Process

The organizers, including DOE and the National Renewable Energy Laboratory, will consider the following criteria to determine a team's likelihood of successfully participating in the Solar Decathlon Build Challenge. These criteria permit selection of the Proposals that provide the highest merit.

Houses and house designs that have appeared in prior Solar Decathlon competitions are not permitted.

Houses and house designs that are expected to appear in upcoming Solar Decathlon competitions before the start of the Solar Decathlon 2020 Build Challenge are not permitted.

Technical reviewers will base their conclusions only on information contained in the Proposals. Applicants should not assume that reviewers are acquainted with the institutions or key individuals or any of their prior work or accomplishments.

2.1 Evaluation Criteria

When evaluating the Build Challenge Proposals, the reviewers will consider the following criteria and weightings:

2.1.1 *Technical Team Approach and Innovation*

(Weight: 25%)

The background includes the proposing organization's history, successes, and current projects or research relevant to the Solar Decathlon competition entry. The capabilities and qualifications of the institution(s) demonstrate a proven track record of success in high-intensity collegiate activities or hands-on projects and suggest a high probability of success in the Solar Decathlon Build Challenge.

The Proposal demonstrates that the institution(s) is taking an aggressive yet practical approach to the project. The Proposal demonstrates that the institution(s) have studied past competitions and proposes a project philosophy that demonstrates it has learned valuable lessons from the experiences of past institutions and their designs.

The Proposal includes ideas with a high likelihood of success and with the potential to benefit professional homebuilders and homeowners.

The Proposal demonstrates a clear understanding of the steps required to successfully design, build, fund, operate, exhibit, and compete in the Solar Decathlon Build Challenge.

The project management plan addresses the roles of project team members, critical handoffs and decision points, the team's approach to project risk management, a description of how project changes will be handled, and the approach to quality assurance.

Environmental, safety, and health considerations are discussed and addressed for the construction and competition phases of the Solar Decathlon, whether participating in the Local Build Division or the National Showcase Division.

The Proposal describes how multidisciplinary teaming (e.g., architecture, construction management, business, communications, and engineering disciplines) is being considered and how multidisciplinary teams will manage communications, responsibilities, and decision-making processes.

2.1.2 *Fundraising and Budgeting*

(Weight: 25%)

The Proposal gives a clear understanding of the costs associated with the project and the need for fundraising, sale of the house after the competition, and/or collegiate institution financial commitment for success.

The Proposal demonstrates that fundraising has been adequately planned, both in approach and in scale.

The level of available or obtainable equipment, instrumentation, and facilities necessary for house construction, operation, and exhibition is adequate.

The team has a plan for ensuring the house is used and maintained following the competition.

The Proposal discusses opportunities to offer internships, stipends, or other means of financial support to enable successful participation and long-term commitment from students.

The collegiate institution has indicated financial and fundraising support of the team to increase the likelihood of success.

The budget in the appendix is completed for the project as a whole, including all work to be performed by the team, industry partners, and their subrecipients and contractors, indicating both in-kind and cash requirements.

2.1.3 *Organization and Project Planning*

(Weight: 20%)

The Proposal demonstrates that the team understands all the activities involved in the project.

The Proposal includes a work plan that indicates a summary of project objectives, task descriptions, the project schedule, and an approach to project management.

The activities are planned and organized adequately to ensure successful completion. The Proposal includes a complete organization chart and timeline that exhibit good planning and understanding of the deliverable and event schedule.

The Proposal indicates who will make decisions and how conflicts will be resolved.

Unique obstacles—such as long-distance communications/collaboration (particularly for multi-institution teams or if students are not all co-located on a

single campus), overseas house transportation, U.S. customs considerations (for international teams), and academic calendars (non-semester based)—are addressed adequately.

2.1.4 Conceptual Design

(Weight: 15%)

The Proposal demonstrates an energy-efficient, solar-powered house design at the conceptual design stage that is appropriate for the Division chosen, showing a clear understanding of the released Solar Decathlon Competition Guide, Build Challenge Division Rules.

The conceptual design communicates ideas, character, and forms of an architectural design, including energy performance considerations, affordability, aesthetics, building envelope, and solar components. Drawings, images, inspiration, or other elements adequately convey the team's approach to design.

The design is likely to inspire and engage both the public and professionals.

The design demonstrates a potential to benefit and inspire professional homebuilders and the U.S. housing industry to reduce the use of energy and increase energy production capabilities in the residential sector.

2.1.5 Collegiate Institution and Community Support

(Weight: 15%)

The Proposal demonstrates clear support for participation in the Build Challenge by collegiate institution leadership, such as a dean, chair, provost, or collegiate institution president.

The Proposal demonstrates that the institution has an architecture, engineering, and/or building science curriculum and that the Solar Decathlon project is integrated into the students' course work.

The institution(s) incentivizes participating students to make long-term commitments to the project by offering dedicated Solar Decathlon course credit, independent study credit, paid research assistantships, or other paid or academic compensation.

The Proposal shows industry partnerships and support for the project such as; local American Institute of Architects, ASHRAE, or Urban Land Institute chapters; elected officials; construction firms; and professional services firms such as architecture, engineering, and construction management.

2.1.6 Quality Program Factors

Other factors such as geographic diversity and technology diversity will be considered for the benefit of the program and impact of the competition.

2.2 Proposal Review Process

Proposals will be evaluated by a team of at least two DOE employees and two National Renewable Energy Laboratory employees. One independent, external reviewer with relevant experience and interest may also be part of the Proposal review process.

Each proposing team found to be competitive will receive a score from 0 to 100 (100 being the highest). The final rank order will be determined based on the combination of Proposal scores and quality program factors.

All Proposals will be evaluated on a competitive basis in two steps:

2.2.1 Initial Evaluation

An initial evaluation will be performed to determine if all required information (i.e., received from a qualified educational institution, contains all required documentation, and so on) has been provided for an acceptable Proposal.

Proposers may be contacted only for clarification purposes during the initial evaluation.

Proposals that are considered noncompetitive for failing to follow requirements or meet minimal levels of acceptability will be eliminated from the ranking before scoring. Teams shall be notified if their submission is determined noncompetitive, and the reasons will be provided. Unacceptable submissions will be excluded from further consideration.

2.2.2 Discussion and Selection

Proposals found to meet requirements will be evaluated to determine which teams have the most promising approaches and potential for a successful Solar Decathlon Build Challenge entry. All acceptable Proposals will be evaluated against the criteria previously listed.

2.3 Compiled Evaluation Notes

Before the final selection, each of the evaluation team members will compile a set of evaluation notes for each Proposal, which include a summary of comments that highlight the strengths and weaknesses considered most heavily as final selection decisions were made. The summary of comments and scores will not be made available publicly, but teams may receive individual feedback on their submitted Proposal.

Teams selected as participants in the Solar Decathlon Build Challenge will be notified and are expected to work toward successful execution. Should a team be unable to continue from any point forward, the team and institution(s) must let DOE know as soon as possible so it can find an alternative or update other activities accordingly.