

Technical University of Denmark



Sustainability through hands-on experience: Solar Decathlon

Kazanci, Ogun Berk; Jensen, Lotte Bjerregaard; Rønne, Christian; Olesen, Bjarne W.

Published in:

Book of Abstracts. DTU's Sustain Conference 2015

Publication date:

2015

Document Version

Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):

Kazanci, O. B., Jensen, L. B., Rønne, C., & Olesen, B. W. (2015). Sustainability through hands-on experience: Solar Decathlon. In Book of Abstracts. DTU's Sustain Conference 2015 [C-4] Lyngby: Technical University of Denmark (DTU).

DTU Library

Technical Information Center of Denmark

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Sustainability through hands-on experience: Solar Decathlon

Ongun Berk Kazanci*, Lotte Bjerregaard Jensen, Christian Rønne, Bjarne W. Olesen

DTU Civil Engineering

*Corresponding author email: onka@byg.dtu.dk

It is crucial to reflect the idea and concept of sustainability into something tangible. An international student competition, Solar Decathlon, achieves exactly this through giving the students an opportunity to design, build and operate a plus-energy house that uses solar energy as its only direct energy source. The competition consists of many different sub-competitions such as energy-efficiency, sustainability, architecture, market viability and others.

DTU has competed in Solar Decathlon twice, in 2012 in Madrid, Spain and in 2014 in Versailles, France. The student-designed, built and operated houses were constructed and tested in Denmark and then transported to the respective competition locations. Figure 1 shows these two houses.



Figure 1. The exterior views of the two houses: FOLD (left) and EMBRACE (right) (Source: Solar Decathlon Europe)

Student involvement takes place in different ways including special courses, theses, integration into existing DTU courses, and sometimes even on a voluntary basis. The students learn to think the design process from a holistic point of view and learn to think of buildings as a part of a bigger energy structure.

The competition in its nature is multi-disciplinary and involves a broad range of professions from computer science, architectural engineering to building services engineering. The students involved in the competition obtain a unique hands-on experience in designing a sustainable and plus-energy dwelling that is a once in a lifetime experience.