

Final Report

On September 3, 2015, Yale University notified the Office of Energy Efficiency and Renewable Energy that Yale would be terminating its efforts under Cooperative Agreement DE-EE0006552, effective September 15, 2015. This last status report, for the quarter ending on September 30, 2015, along with its attachments, was approved for submission as the Final Report of DE-EE0006552 by the DOE Project Manager, in the closeout communications with the Yale University Office of Sponsored Projects.

Attachments:

E00161 Oristaglio DOE SF-428.pdf

E00161 Oristaglio DOE SF-428B .pdf

SF-2050 11 Patent Certification_14-003502.pdf

Revisions added September 2, 2016: Acknowledgment and Disclaimer (p. 2).

Project Title:	Y-House: Your Match
Covering Period:	July 1, 2015, to September 30, 2015
Approved Project Period:	April 15, 2014, to April 15, 2016
Submission Date:	March 16, 2016
Recipient:	Yale University PO Box 208047 47 College St, Suite 203 New Haven, CT 06520-8047
Award Number:	DE-EE0006552
PI:	Michael L. Oristaglio Executive director, Yale Climate & Energy Institute Phone: 203-432-0579 Fax: 203-432-3980 Email: michael.oristaglio@yale.edu
Submitted by:	(Michael Oristaglio, PI)
DOE Information:	Project Manger: Christopher J. Early Project Monitor: Thomas White Financial Assistance Specialist: Christina Raines Contracting Officer: Michael Buck

Acknowledgment

This material is based upon work supported by the Department of Energy under Award Number DE-EE0006552.

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

Research Performance Progress Report (RPPR) for DOE/EERE

This is the sixth quarterly status report, for the quarter ending on September 30, 2015, for project DE-EE0006552, titled "Y-House: Your Match." Y-House is a project entered in DOE Solar Decathlon 2015. The project, which began in April 2014, is in its second budget period.

Project Title: Y-House: Your Match

Covering Period: July 1, 2015, to September 30, 2015

Approved Project Period: April 15, 2014, to April 15, 2016

Submission Date: November 23, 2015

Recipient: Yale University
PO Box 208047
47 College St, Suite 203
New Haven, CT 06520-8047

Website (if available) <http://www.yale.edu/>

Award Number: DE-EE0006552

Working Partners: Yale School of Architecture
Yale Climate & Energy Institute
Yale Office of Environmental Health & Safety
Yale Office of Facilities
Yale Center for Engineering Innovation & Design

Cost-Sharing Partners: Yale Climate & Energy Institute
Yale School of Architecture
Yale Center for Business and the Environment
Yale West Campus
Turner Construction
Reclamation Lumber
IBM

PI: Michael L. Oristaglio
Executive director, Yale Climate & Energy Institute
Phone: 203-432-0579
Fax: 203-432-3980
Email: michael.oristaglio@yale.edu

Submitted by: (Michael Oristaglio, PI)

DOE Information: Project Manger: Christopher J. Early
Project Monitor: Thomas White
Financial Assistance Specialist: Christina Raines
Contracting Officer: Michael Buck

Project Objective:

Y-House is a project in Solar Decathlon 2015. The design objective of Y-House is to re-envision the micro-home through a focus on merging efficiency with spaciousness, personalized form and openness to the natural environment.

The main project objective during Budget Period 1 was to complete the design of Y-House, including the research needed to fully specify its mechanical and electrical systems. The team also had an objective to finalize most of the construction planning before entering Budget Period 2. The main project objective in Budget Period 2 was to complete construction of Y-House for participation in the SD 2015 competition event in Irvine, California, in October 2015. During both budget periods, the team was continuously seeking sponsors to fund its mission.

Background: The overall goal of the Y-House project is the design and construction of a house within the rules and criteria of U.S. Department of Energy Solar Decathlon 2015. The original design objectives for Y-House were efficiency, spaciousness, personalized form and openness to the natural environment. Entering into Budget Period 2, the team took on the additional objective of designing and building Y-House using modern modular construction techniques in order to save on time, on the total cost of construction and shipment, and on the materials used.

The deliverables for the Construction Documentation Phase (BIM, Drawings and Project Manual), the culmination of the Design Phase, were submitted on time on February 12, 2015. A first set of revisions, addressing reviewer comments, was submitted in March; a final set was submitted in June. Based on the final set, the Yale team was approved to proceed with preparations for its participation in the final phase of Solar Decathlon 2015, construction of Y-House and its display at the competition site in October.

Work Planned for this Quarter:

From the last progress report

The project enters its final stages next quarter in preparation for the Solar Decathlon event in October. The plans include the following milestones:

[August 7] Finalize contracts with MODS PDX for fabrication, shipment and installation of Y-House.

[August 17] Submit Final Competition Deliverables on August 17: As Built Phase Documentation (BIM, Drawings, Project Manual), Audiovisual Presentation, Jury Narratives, Final Public Exhibit Materials, and Final Website.

[September 1] Finish construction of mechanical room, supporting structures and

solar trellis at Yale West Campus and arrange shipment to Irvine, California.

[September 25] Arrive in Irvine for competition.

Status:

On September 3, Yale University officially notified the Office of Energy Efficiency and Renewable Energy that Yale would be terminating its efforts under Cooperative Agreement DE-EE0006552, effective September 15, 2015. Earlier, on August 19, Team Yale had informed the organizers of Solar Decathlon 2015 that it would be withdrawing Y-House from the final competition event to be held in October in Irvine, California. A copy of the termination letter is attached below.

On August 17, Team Yale submitted the final electronic deliverables for the competition: (a) the “as built” construction drawings, (b) the project and safety manuals, (c) the audiovisual presentation, and (d) the final website and public exhibit materials. But after consultation with the modular homebuilder that had been contracted to build the structure for Y-House, the team realized that it would not be able to raise all of the required funds in time to meet a construction deadline that would allow the house to be assembled in Irvine by the start of the SD 2015 event.

The remaining effort on the project through the termination date of September 15 was spent winding down contracts that had been started earlier in the year, in anticipation of proceeding with the construction Y-House for the display phase of the competition. Contracts were underway with: (1) the construction and engineering firms Build Equinox, Go Green Solar, US Modular, and MODS PDX for pre-construction engineering and permitting for Y-House, (2) with the architectural firm Coggan + Crawford, for professional design services, and (3) with the design/build firm Pre-Craft Services, for design and construction of a modular mechanical service room and a timber-framed pavilion. The service room had actually been completed by PreCraft Services by the time that the decision was made to withdraw from SD 2015; the unit was paid for and will be used in the future for teaching and research.

Although the Yale team could not be present in Irvine, the students are working on a future for Y-House with a new art foundation that is being established in North Carolina by a group of alumni who would like to adopt the modular, net-zero energy design of the building for their center of operations in Randolph County, North Carolina. To that end, the Yale team will continue its efforts on Y-House under a not-for-profit research and educational organization of the same name. We will keep organizers of SD 2015 informed of the outcome of this initiative.

The final financial reporting form for the contract will be filed directly by the Yale Office of Grant and Contract Administration.

Plans for Next Quarter: None

Patents: None

Training and Professional Development: None

Publications/Presentations/Travel: Travel and presentations to Yale Alumni Clubs in Boston, Houston, San Francisco, Pittsburgh, Philadelphia and New York City were carried out in July and August.

Status Summary Tables: See attached Excel file* (EE0006552-2015Q3-Spreadsheet-Major-Tasks.xlsx). This workbook contains only the Major Tasks summary table; as indicated above, the final financial report will be filed directly by Yale GCA.

**Note added March 16, 2016: This file was submitted with the status report filed in November. Yale GCA has submitted the final financial report to close out the award.*

ATTACHMENT: TEXT OF TERMINATION LETTER TO U.S. DOE

3 September 2015

To: U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy

Re: Cooperative Agreement DE-EE0006552, Y-House: Your Match

This letter is to notify U.S. Department of Energy that Yale University will be terminating its efforts under Cooperative Agreement DE-EE0006552, effective September 15, 2015. The work being carried out under this agreement was in support of Team Yale for its participation in Solar Decathlon 2015.

On August 19, 2015, Team Yale informed the organizers of SD 2015 that it would be withdrawing its entry (“Y-House”) from the final competition event to be held in October in Irvine, California. On August 17, Team Yale had submitted the final electronic deliverables for the competition—the “as built” construction drawings, the project and safety manuals, the audiovisual presentation, and the final website and public exhibit materials. But after consultation with the modular homebuilder contracted to build the structure for Y-House, the team realized that it would not be able to raise all of the required funds in time to meet the construction deadlines so that the house could be assembled in Irvine by the start of the SD 2015 event.

Team Yale is grateful for having the opportunity to explore sustainable design through such an inter-disciplinary format as the Solar Decathlon competition, and thanks the organizers for all of their help and support during the project. The team will submit its Final Report on the project under the normal schedule (November 20, 2015).

Although Y-House will not be present in Irvine, the students are working on a future for Y-House with a new art foundation that is being established in North Carolina by a group of alumni who would like to adopt the modular, net-zero-energy design of Y-House for their center of operations. Set on a permanent site in North Carolina, Y-House will be able to fulfill its mission of establishing functional connections between interior and exterior environments and encouraging efficient, comfortable living in an optimized floor plan with generous outdoor spaces. To that end, the student team has set a not-for-profit research and educational organization, also called Y-House, to continue its efforts. We will keep organizers of SD 2015 informed of the outcome of this initiative.

/s/ Michael Oristaglio, PI
Executive director, Yale Climate & Energy Institute
michael.oristaglio@yale.edu | 1.203.432.0579