

Solar Decathlon: A Cleaner Future

Goal: Build a zero net energy efficient home for the Solar Decathlon 2015 Competition.

Advisors: Jack Brouwer and Mark Walter, UCI Professors, Will Vicent, SoCal Edison, Chris Tindall, McParlane & Associates



Innovation

- 3D Printing: Cradle to cradle.
- Use of dryer powered by paraffin
- Cooking powered by hot water

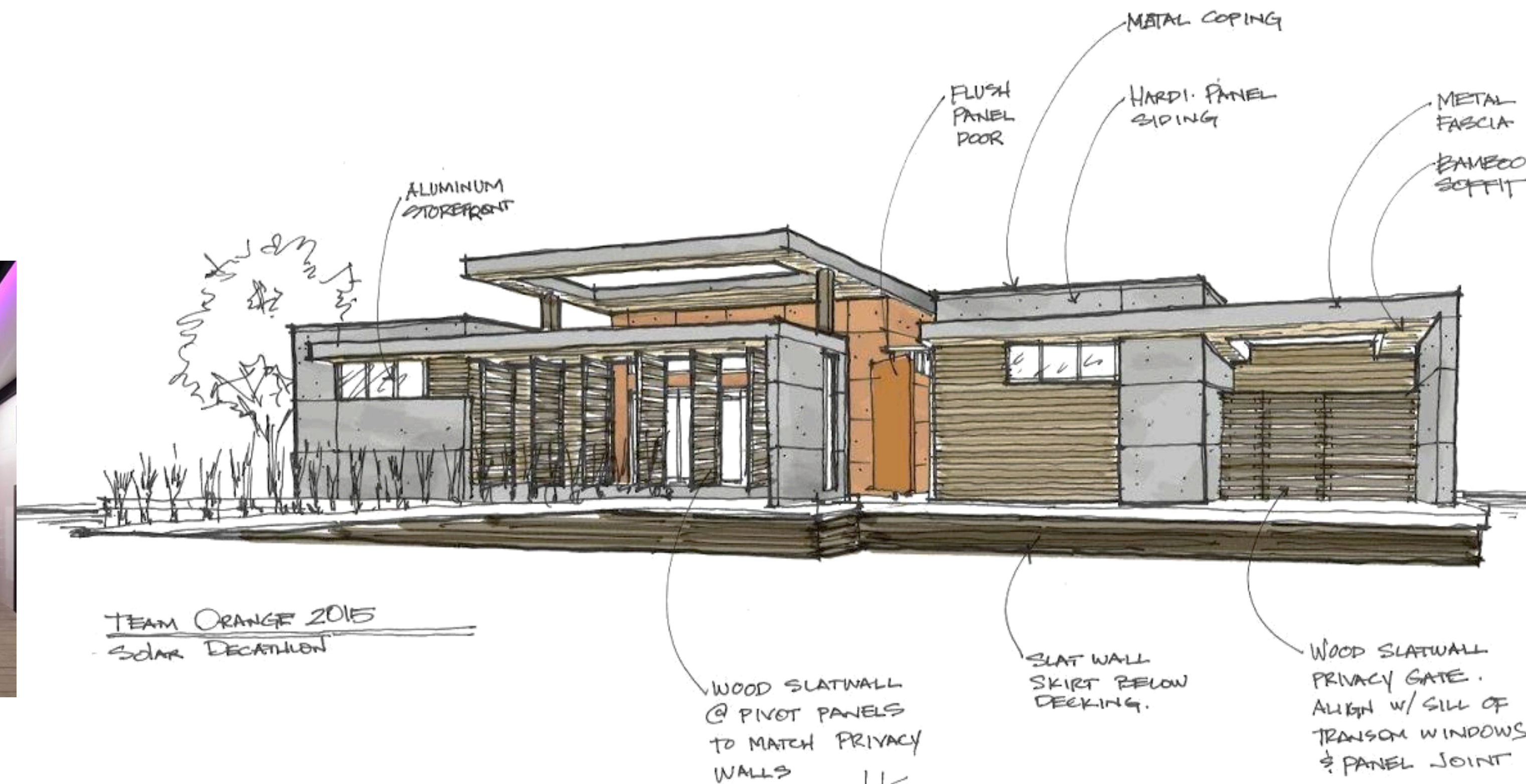
Background

The Solar Decathlon is a world-wide competition started in 2002 and occurring biannually where students from different disciplines come together to design, build, and operate solar-powered houses that are cost-effective, energy-efficient, and attractive.

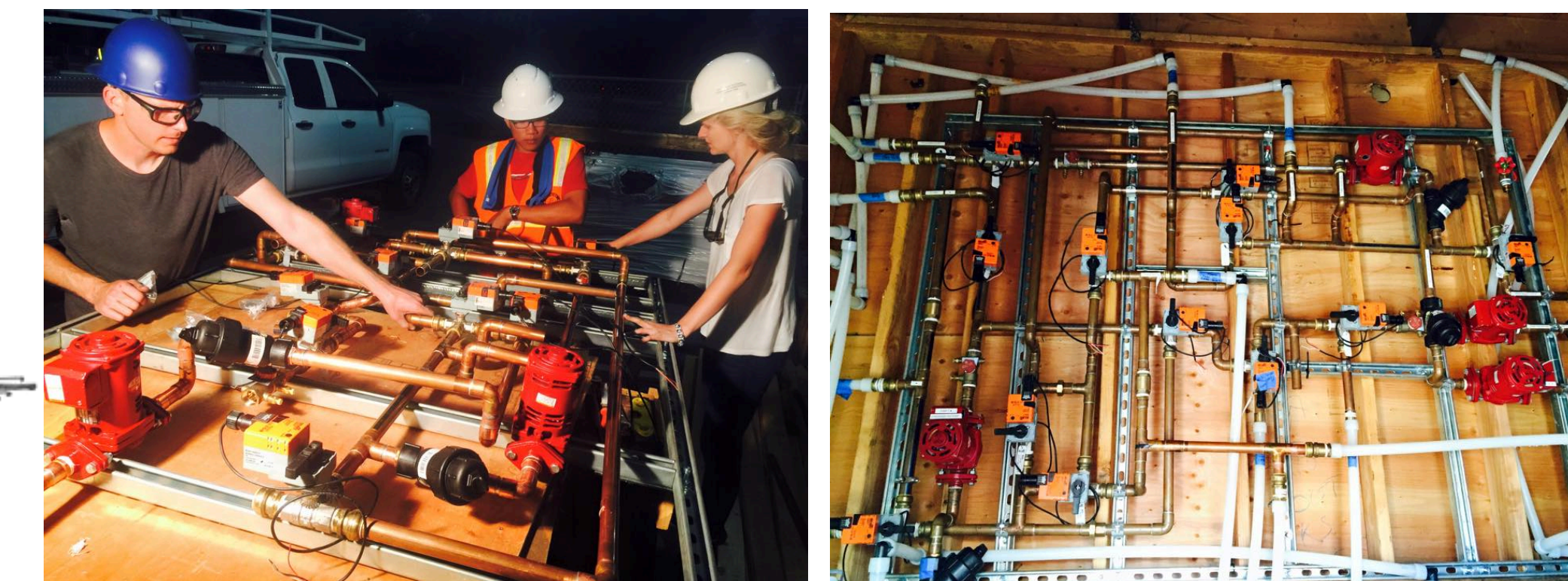
The Competition:

- Estimated construction must be \$250,000
- Comfort zone must be kept between 71°F and 76°F
- Interior relative humidity must be below 60.0%

Example of v-ray model vs. actual home



Piping skid to circulate the home's hot and cold water

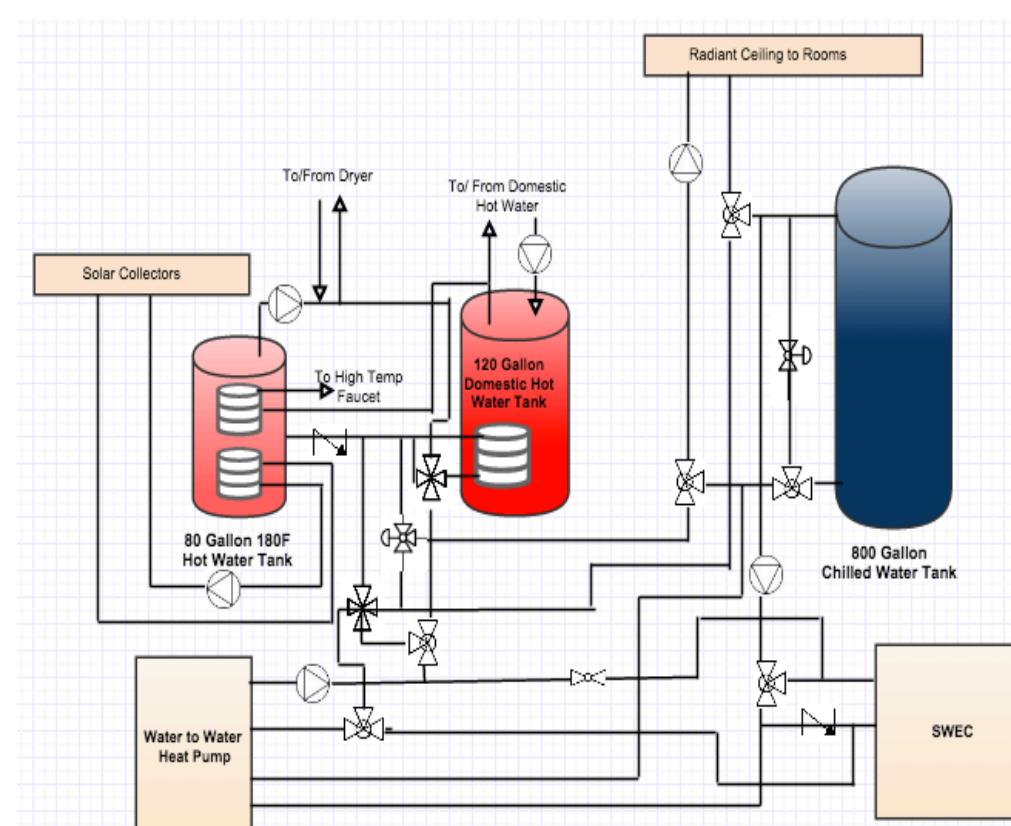


Chilled water tank to create stratification and thermocline.

Team Members: Moritz Limpinsel, David Kincade, Nick Tran, Teagan Barnes, Trevor Jenks, Amihan Amargo, Frank Cai, Jasmine Llave, Ian Pareja, Okechi Kwem, George Agcopra, Jesse Inuoye, Karen Romine, Javier Vega, Yon Chung, Omar Kilany,

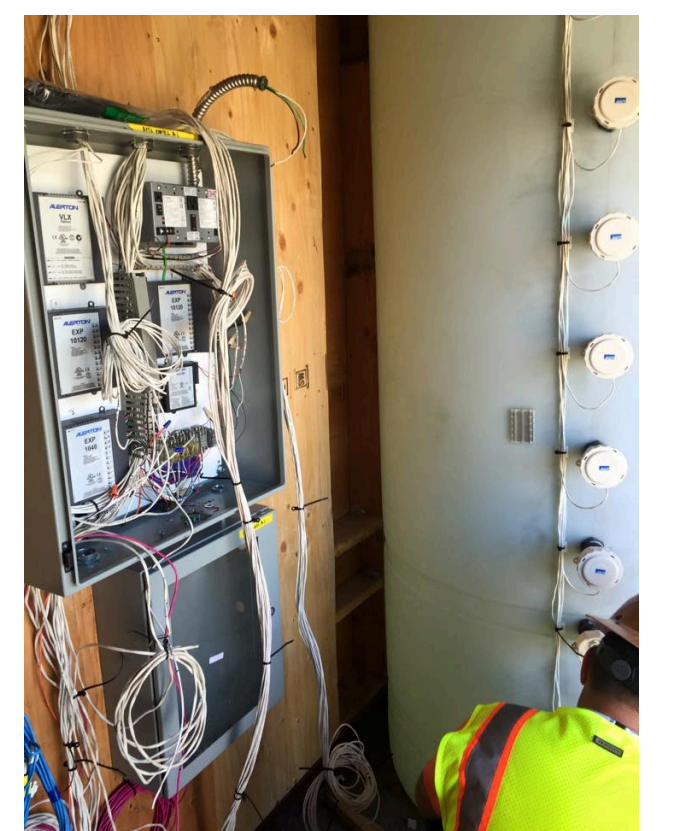
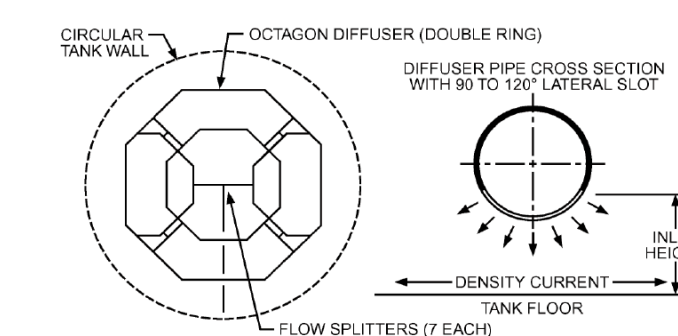
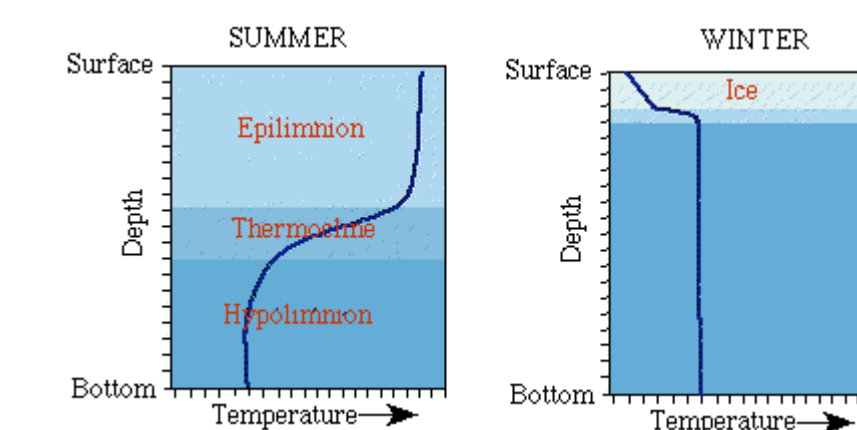
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Design of HVAC system



Results:

2nd Place in Engineering Contest out of 14 teams!!



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