This year Team OC has stepped into the competition for the first time. Team OC is a collaboration between Irvine Valley College (IVC), Saddleback College, Chapman University, and University of California, Irvine (UCI). The goal for this year's competition was to design and construct a highly efficient solar powered home that would eventually be constructed and on display at the Orange County's Great Park in October 2015. Marketed toward Southern Californian residents; featuring modular construction and the most efficient energy practices.

**DESIGN GOALS | RULES**

- 5,000 SQ.FT lot with 1,000 SQ.FT of air conditioned space
- Total Budget | $300,000
- Structural Budget | $70,000
- Modularization of Structure
- Mitigate Thermal Energy Infiltration
- Incorporation of “Photovoltaic” (PV) Panels

**BUILDING CODES**

- 2013 CBC (California Building Code)
- 2009 IRC (International Building Code)
- American Society of Civil Engineers (ASCE) 7-10
- Life Cycle Analysis | Materials Red List
- Americans with Disabilities Act (ADA) Regulation Compliant

**ALTERNATIVES**

- Corrugated Metal Decking
- Strong Walls
- Structural Insulated Panels (SIP)
- Hollow Section Steel (HSS) Columns
- Moment Frame System for Cantilever Structure

**DESIGN SCHEMATIC**

- Foundation | Steel 10x22 W-Flange Perimeter Supported by Standard/Seismic Foundation Piers.
- Lateral Resisting System | Lateral Forces resisted by shear transfer ties and steel foundation stakes. Type A shear walls with ½” plywood diaphragm
- Sustainability Practices | Sustainable by utilizing lightweight wood framing and optimizing to only use standard Type A Shear Walls.
- Wood Framing System | Roof and floor framing both sized to 2x12 DF#1. Headers will be conservatively sized for critical deflection locations. Cantilevered & Canopy structures detailed taking into consideration constructability, assembly time, and transportation.

**CONSTRUCTION ADMINISTRATION**

- Materials and Labor Included in Total Budget | $300,000
- Construction Schedule | 2 Months
- Assembly Time | 5 Days

**BUILDING SUMMARY**

- A Family Dwelling, One Story Home:
  - Main Dwelling for Family (2 Bedroom/1 Bath/1Kitchen) with outdoor bath and patio area under halo/canopy.
  - Studio Dwelling for Rent/Grandparents (1 Bedroom/1 Bath/1 Kitchenette) with outdoor bath and patio area under trellis
- 1 Car-Garage car port with 3-D printer
- Leasable Area | 4,680 SQ.FT

**TEAM ORANGE STRUCTURAL TEAM**

- Project Manager | Team Orange
  - Saman J. Shaolian
- Project Engineers | Team Orange
  - Francisco J. Magallon
  - Alexander D. Talebi
  - Armand Terzian
  - Oliver D. Espinosa
  - July Aye

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**ARCHITECTURAL DESIGN:**

**STRUCTURAL MODEL | REVIT:**