Sinatra Living: Marketing and Promotion

Solar Decathlon 2017: Sinatra Living

2017

Synapse: Construction Education Committee Presentation

University of Nevada, Las Vegas. Solar Decathlon Team.

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solar decathlon 2017
Where to begin

What is the Solar Decathlon?

The U.S. Department of Energy Solar Decathlon showcases innovative solar powered houses that are designed, built, and operated by collegiate teams. The winner of the competition is the team that best blends technology, market potential, and design excellence with smart energy production and maximum efficiency.
What is the Solar Decathlon?

**design**
The design must be formed to innovatively combine knowledge from multiple disciplines, in order to address the market and competition objectives.

**build**
The next challenge begins with reinforcing design intent with physical form. Taking into consideration building tolerances as well as structural viability, form and function marry.

**transport**
Moving on, the design and building of the project must now consider moving to. The built home must also incorporate mobile capability as part of the final objective.

**compete**
Team Las Vegas will compete against 16 teams, all with the same objective, to win. This time all sixteen houses will find a sense of place in Denver, Colorado.
What is the Solar Decathlon?

- architecture
- engineering
- market potential
- communications
- innovations
- water
- health & comfort
- appliances
- home life
- energy
What is the Solar Decathlon?

In the past...

1. Market appeal
2. Communications
3. Engineering
What is the Solar Decathlon?

In the past...

nationally

1

internationally

2
Quick Facts:
Currently Resides at the Springs Preserve
Quick Facts:
- 2013: 2nd Place Internationally
- 1st Place Market Appeal
- 2nd Place Communications
- 3rd Place Architecture
solar decathlon 2017 + Team Las Vegas
Interior environments constitute a multi-sensory experience from which the brain acquires and uses new and retained information to direct behaviors (Albright, Salk Institute, 2009)
90% of what we experience everyday is the designed environment
A person on average will spend 90% of their life in the interior environment.
The need for neuroscience-informed design strategies is especially evident in states such as Nevada, where the senior citizen population grew more than 50% over the past decade and expected to make up one fourth of the state’s population by the year 2030.
Team Las Vegas

Why Solar Decathlon matters?

energy

lifestyle

automation
SUNAPSE 2017

Aging in place...

1 facilitating orientation  Priming the user with appropriate visibility through fenestrations of the building is a primary component to facilitate orientation.

2 autonomy  The project allows for autonomy in spaces where mobility may be most difficult for an older person, such as the kitchen, bath, and living space.

3 intellectual + sensory-stimulation  The design provides for multipurpose activities and consequently a sense of novelty and variety throughout the day. It is a high priority to create variety in multipurpose spaces, as it is a form of intellectual and sensory stimulation.

4 providing a safe and secure environment  The interior environment is nested within a sequence of transparent and opaque partitions to create a comfortable enclosure for privacy and security. These partitions are rhythmic in material to allow for transparency and privacy.

5 balance between private and social spaces  The home is divided into social and private modules. Both modules allow for generous outdoor exposure and semi-visibility to the adjacent spaces to retain way-finding abilities.

Principles of aging-in-place design

The design of the interior environment and architecture consists of several principles in which evidence-based design research converges to fruition. Environments which integrate proper orientation for the user, behave autonomously in daily activities, provide intellectual and sensory stimulation, security, and balance private and social spaces are ideal for the aging individual. These principles create interior environments for true independent living and successful aging.
### SUNAPSE 2017

**Automate. Analyze. Control.**

<table>
<thead>
<tr>
<th></th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>master security system</td>
<td>centralized hub for smart lock control</td>
</tr>
<tr>
<td>02</td>
<td>automated smart locks</td>
<td>added security, ease of nightly lock up</td>
</tr>
<tr>
<td>03</td>
<td>learning thermostat</td>
<td>central location, adjusts to users patterns</td>
</tr>
<tr>
<td>04</td>
<td>floor/roof sensors</td>
<td>sense occupant activity, fall detection</td>
</tr>
<tr>
<td>05</td>
<td>health monitoring</td>
<td>blood pressure, blood sugar</td>
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<tr>
<td>06</td>
<td>smart TV</td>
<td>family communication, control center</td>
</tr>
<tr>
<td>07</td>
<td>smart appliances</td>
<td>energy savings, communicate with home</td>
</tr>
<tr>
<td>08</td>
<td>sleep monitoring</td>
<td>track respiration and sleep cycles</td>
</tr>
</tbody>
</table>
2017 conceptual design
2013 Module Chassis

- Custom manufactured
- High cost, heavy steel
- Irregular shape
2017 Chassis Option

- Pre-manufactured mobile-home chassis
- Low Cost
- 1 week production, 1 week shipping
- Appeals to homebuilders
2017 Concept
Floor Plan
2017 Concept

Dining Space
Project Process

Modules
Project Process

Redundancy
Project Process

Integrated Mechanical Unit

INTEGRAL VENT

SOLAR THERMAL COLLECTORS

WASTE WATER STORAGE

A/C CONDENSERS

HOT WATER STORAGE
Community Outreach
- Las Ventanas Retirement Community
- Lou Ruvo Center for Brain Health
- Osher Lifelong Learning Institute