

## **Architecture**

Architecture is just one of ten equally weighted contests in the Solar Decathlon, yet it is the most visible to outsiders and has required the most attention from the team. Something about an elegantly designed house gives it a profound ability to inspire and wow visitors. The Solar Decathlon does award points for “wow,” but it also includes other factors that professional architects assess when assessing a score to the teams. The jury considers architectural elements, lighting, inspiration, documentation, and holistic design. The Architecture contest is about more than construction; it is about how the design reflects ideas made real.

Because Santa Clara does not have an architecture program, the team has been working with architecture consultant Bill Gould, who owns a firm in San Jose. He teaches a weekly architecture class to give students advice and provide formal instruction in architecture. One could argue that this involvement undermines the “entirely student-designed” tagline the team is proud of promoting, but Gould tries to act as more of an advisor than a collaborator. He provides feedback on design drawings and decisions created by the Architecture sub-team.

Collaboration has also been important within the SCU team. The broad contest affects multiple other sub-teams, including Electrical, Interiors, and Exteriors. Communication is crucial to ensure the vision of the other sub-teams aligns with the vision of the Architecture team. For example, the team had to make a unified decision about which color siding to choose so that the Interiors team could select complementary tiling.

The team also had to select a house name they could stand behind. After much debate, they settled on Radiant House. This continued the tradition of house names beginning with R in the '07 and '09 houses, giving a nod to the success of previous teams. Radiant also has multiple meanings. The sun transfers heat via radiation, so solar power is literally radiant energy. The

house also utilizes radiant heating and cooling methods to save power by circulating water through the walls of the home. Finally, “radiant” projects an image of brightness, excitement, and energy, which are all appealing aspects to associate with solar power and sustainability. The choice of Radiant House has encouraged the team to think about the message their house radiates to the public and how they could best tailor that to match the values of Santa Clara University.

The physical design incorporates many elements that show SCU’s commitment to conscience, competence, and compassion. In particular, the team’s choice of materials displays an uncommon commitment to sustainability and just practices. Their innovative choice of bamboo as a structural material is a primary example of this. The team is devoting many extra hours to modifying bamboo to make it suitable for the walls and joists. Their efforts will not be visible in the final house, but their decision to choose a sustainable and underutilized material sends a powerful message that the sacrifice of time is worthwhile for the sake of the environment. The team is also utilizing recycled steel in both the frame and the siding, giving the home a unique look that re-uses available resources.

The team’s three design objectives are economy, efficiency, and elegance. The layout of the home is designed to follow the natural pattern of the sun to maximize available solar energy. A spacious deck area encourages outdoor entertaining, which cuts down on interior appliance and electricity use. Large windows allow an abundance of natural light and heat to fill the home while still giving an air of sophistication. The solar panel racking system seamlessly incorporates the panels into the roof to avoid the oft-criticized look of traditional solar panel arrangements.

The Radiant House is designed to make sustainability attractive. In a time when more people are beginning to recognize the need to reduce fossil fuel consumption, the house offers proof that elegance is still possible in a new era of environmental consciousness. More so than

any other contest, the Architecture competition best conveys the message that solar power is not an impractical dream but an exciting possibility with the potential to be economical, efficient, and elegant.