2017

Sinatra Living: Letter of Intent

University of Nevada, Las Vegas. Solar Decathlon Team.

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Project Title: University of Nevada, Las Vegas, Solar Decathlon 2017 Entry
Lead Organization: University of Nevada, Las Vegas
Organization type: University
Previously submitted: No
% of effort contributed by Lead Organization: 100%

Project team:
Principal Investigator for Prime Recipient:
David E. James, Ph.D. PE (Nevada) Associate Professor, Director of Solar and Renewable Energy Programs, UNLV

Team Members:
UNLV Howard R. Hughes College of Engineering
UNLV College of Fine Arts
UNLV Hank Greenspun School of Journalism & Media Studies
UNLV Honors College
UNLV Lee Business School
UNLV William F. Harrah College of Hotel Administration

Key Participants:
Alfredo Fernandez-Gonzalez, Professor, UNLV School of Architecture
Rick Hurt, Research Engineer, Center for Energy Research
Pramen Shrestha, Associate Professor, Department of Civil and Environmental Engineering and Construction

Student team Leads:
Engineering: Evan Thomas
Architecture: Nasko Balakchiev
Communications: Elias Benjelloun
Abstract:

UNLV will deploy a multidisciplinary student and faculty team to design, raise funds, construct, transport, and operate an innovative solar-powered house for the DOE Solar Decathlon 2017. The house will address competition criteria as stated in the Notice Description. The team's efforts will be integrated into curricula in fine arts, business, computer science, engineering, honors, health sciences and hospitality. Lessons learned from prior entries will be applied to the new design.

The proposed home will be designed to be functional, efficient and appealing to its market. The team will use whole house building modeling to evaluate passive and active solar strategies to achieve desired energy-use targets. Modular design, maintaining adequate indoor air quality, lighting controls, and complete life cycle design will be some of the basic considerations. Construction materials and techniques including, but not limited to, advanced framing and reclaimed materials will be incorporated. Intelligent home controls and connected devices will be implemented, with concentration such as advanced multimedia integration, improved security and interactive experiences. The house will not only be a sustainable demonstration home, but also a next generation smart home that is ready for commercialization.