

2017

Sinatra Living: Letter of Intent

University of Nevada, Las Vegas. Solar Decathlon Team.

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LETTER of INTENT

Control number: 1398-1513 submitted: 3:49pm 09/15/15

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 Balaktchiev

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.