中国国际太阳能十项全能竞赛

SOLAR DECATHLON CHINA

SOLAR DECATHLON CHINA 2017

COLLEGIATE TEAM COMPETITION

TEAM APPLICATION WEBINAR

MARCH 18TH, 2016

U.S. DEPARTMENT OF ENERGY

国家能源局 National Energy Administration

中国产业海外发展协会 China Overseas Development Association

National Energy Administration of China

U.S. Department of Energy

China Overseas Development Association

Team ABC University

2017 Solar Decathlon China

A Trans-Disciplinary Experiment in Sustainability

The Organizing Committee, Solar Decathlon China 2017

What's Solar Decathlon?

Solar Decathlon is an award-winning research, education and outreach program challenging twenty colligate teams to design and build an attractive solar-powered house of a building area between 1200 to 2,000 ft^2.

Each team should demonstrate the house's originality in design, high efficiency in energy production and consumption, high performance in indoor environment quality, and affordability in construction.

Team Sweden, Sweden, Third Place Winner, Solar Decathlon China 2013

What is The Ten Contests?

The Solar Decathlon consists of ten juried and measured contests. These contests are designed to assess appealing, performance, and affordability.

Juried (jury evaluation)
Architecture, Market Appeal , Engineering , Communications, & Affordability

Measured (monitored performances)
Comfort Zone, Appliances, Home Life, Commuting, & Energy Balance

Team Application Webinar: Agenda

- Solar Decathlon China 2017 Collegiate Teams
- Guidelines on Technical Volume, Full Application
  - Format and Components
  - Key Content for Technical Volume (Example)
- Summary and Application Submission
- Upcoming Events

Overview of Solar Decathlon China 2017 Teams

- Tsinghua University
- Tongji University CAUP & Technical University Darmstadt
- Tongji University & Technical University of Munich
- Southeast University & Technical University of Braunschweig
- South China University of Technology & Politecnico Di Torino
- Xi'an Jiaotong University & U of Wollongong
- Beijing Jiaotong University
- Shanghai Jiaotong University & University of Illinois at Urbana Champaign (USA)
- Ryerson University, Seneca College, University of Toronto, & Humber College (CANADA)
- Indian Institute of Technology Bombay
- Nanjing Tech University
- Shandong University of Science and Technology & Western New England University
- College of Management Academic Studies (COMAS), Israel
- Fujian University Of Technology & New Jersey Institute of Technology (USA)
- Shenyang Jianzhu University

Overview of Solar Decathlon China 2017 Teams

- Drexel University (US)
- Shanghai University of Engineering Science
- Hunan University
- Seoul National University (SOUTH KOREA)
- Xi'an University of Architecture and Technology
- Nanjing University & Syracuse University
- Changzhou Institute of Technology
- Shandong University & National Institute of Applied Sciences of Rennes & University of Rennes 1 & National School of Architecture of Britanny
- McGill University & Concordia University
- Istanbul Technical University & Istanbul Kültür University & Yildiz Technical University & Marmara University
- Technical University of Denmark
- University of Rennes 2, High School Joliot Curie of Rennes, & Technical School of Compagnons du Devoir of Rennes (FRANCE)

Technical Volume: Format and Component

- 20 Pages Maximum PDF File
  - Cover Page (1 page)
  - Project Overview (10%)
  - Technical Description, Innovation, and Impact (30%)
  - Workplan (40%)
  - Technical Qualifications and Resources (20%)
  - Concept and Design Elements

Technical Volume
Key Content

- What is important to Include in the Technical Volume
  - Design Summary: Proposed Scheme, Concept, Innovations
  - Architectural Conceptual Design
  - Multidisciplinary Collaboration and Innovation
  - Impact of Project
  - Curriculum and Facility Integration
  - Project Schedule and Workplan

Technical Volume
Key Content

- Tips on Designing Solar Decathlon Proposals
  - Innovation
  - Impact
  - Curriculum Integration
  - Workplan and Project Management

Technical Volume: Key Content

1 INTRODUCTION → Project Overview

Include a summary of your project, such as design conceptions, innovations, and goals that is relevant to the topics of Solar Decathlon China 2017
Describe the background of your organization and the anticipated impact of your Proposal

2 TECHNICAL INNOVATION & DESIGN → Technical Description, Innovation and Impact

3 FUNDRAISING & TEAM SUPPORT → Technical Description, Innovation and Impact | Workplan

4 ORGANIZATION & PROJECT PLANNING → Workplan

Technical Volume: Project Description

1 INTRODUCTION

Team Las Vegas is proposing an elegant, sustainable, and innovative home design that aims to be net zero energy as part of participation in the 2013 Solar Decathlon supported by the Department of Energy and the National Renewable Energy Laboratory (NREL). The home will be constructed and tested at the 2013 Solar Decathlon competition at a location to be determined by NREL. Imagine a home that captures energy instead of reflecting sunlight; one that filters rainwater and sequesters carbon in its vegetation and soils; one that actually gives back to the ecosystem in which it resides, and supports sustainability for all species. The design philosophy imagines a new type of home that could transform the housing market in Las Vegas. The house incorporates all of the high-tech opportunities (smart walls, smart ECS interfaces, solar thermal, PV, etc.) available, without focusing the design on these systems. The systems will support the project's conception, rather than being its driving force.

The conceptual design that Team Las Vegas has developed is the "Autonomy House," designed to operate independently from all traditional public utility services. It is a self-sufficient structure designed mainly as a recreational or vacation home, while also having the capability to function as a permanent, year-round residence in our arid desert environment. Environmental technologies and renewable energy combine to allow the users to live grid-free in a place of their choosing without having to give up any modern comforts. Careful consideration of accessibility and age-in-place considerations assist in creating a home that can be enjoyed during any stage of life.

Team Las Vegas consists of a collaboration between students and faculty from Architecture, Engineering, Business, and Communications. The two-year effort will be integrated into several education programs, including the Solar and Renewable Energy Minor and Renewable Energy Graduate Certificates (both supported by NV Energy), the David G. Howryla Design-Build Laboratory (supported by the named donor), the Mendenhall Innovation Center (supported by the named donor), and the Engineering Senior Design courses (supported by Fred and Harriet Cox). In addition, industry support is provided through the Architecture and Engineering Advisory Boards, and through existing partnerships with industry. The final outcome from the project will be a home that is used in the competition and eventually brought back to Las Vegas for continued use and testing. The final use of the home has not been determined; however, potential uses include a permanent office space for Green Chips in downtown Las Vegas or use at UNLV for educational and research purposes.

UNLV Lied Library

School of Architecture

Science & Engineering Building

Project Summary:

Performance Goals

Design Concept

Collaboration

Institution Support

And More…

Technical Volume: Project Description

2 TECHNICAL INNOVATION & DESIGN

2.1 Design Philosophy and Inspiration

We are constantly inspired by the desert – the intense sun, the relentless wind and the powerful landscape. Living in a place where the environment is harsh and the natural resources are scarce makes Team Las Vegas particularly aware of sustainable and conservational design measures. By learning from other residents of the Mojave Desert, such as the Paiute native American community, we can be part of the natural and dynamic cycle of the desert, be reciprocal in terms of what the environment provides, and most importantly, leave minimal impact on the Earth.

We formed our concept around three major considerations: 1) architecture: phenomenology and culture, 2) engineering: energy balance and technological innovations, and 3) ecology: conservation and ecosystems. Following these guidelines, our goal is to create a net-zero home that can be self-reliant in any climate including the harsh desert. This home will serve as a verdant refuge in the arid environment by generating energy through solar panels and harvesting rain water and grey water for use in the house as well as for recharging ground water supply. By incorporating passive design strategies, efficient active systems and appliances, we will be able to minimize the energy load required for the house and achieve energy balance. We also want to create memorable experiences through the architectural design of the home. It will be a home with all the modern comforts and amenities without overextending our energy budget, and it will have the feeling of a custom home with a reduced price tag.

The Mojave Desert is a unique and fragile place. The power of its landscape is undeniable; the intense heat of the sun unforgettable. Our environment always challenges designers to think first and foremost about the environmental conditions. We are a group of designers and engineers that are constantly reminded of the climatic challenges and have practical experiences on solving these issues. A work of desert architecture must, however, also capture unique characteristics and provide refuge, while celebrating the unforgettable majesty of this place. Our design will celebrate the experiences of the desert landscape by offering new perspectives on the vistas that surround us.

Colors and textures of the Mojave

Light filters through a native mesquite tree

2.2 Design Approach

Team Las Vegas will focus on design elements that are well adapted for the Mojave Desert climate, but will be able to adjust to other milder climates as well. The building must be oriented for optimum solar performance and the amount of glazing will be carefully controlled to minimize heat gains and losses. The use of screen walls as an exterior shading device can stop the solar radiation before it enters the building, thus lowering heat gain through the building envelope. Daylighting will be used primarily on south and north enclosures as it is most easily controlled in those locations. Clerestory windows will be placed high to provide optimal daylight factors for all corners of the house, minimizing the use of electric lights and reducing energy loads. Combining the use of operable windows and doors, natural cross ventilation will be optimized for cooling. Evaporative cooling will also be incorporated, as the predominant winds pass over the water features and into the house, effectively altering the temperature as well as the humidity to create more comfortable spaces.

Project Summary:

Design Philosophy

Design Approach

Natural and Social Context

Design Considerations

And More…

Technical Volume: Key Content

1 INTRODUCTION → Project Overview

Include a summary of your project, such as design conceptions, innovations, and goals that is relevant to the topics of Solar Decathlon China 2017
Describe the background of your organization and the anticipated impact of your Proposal

2 TECHNICAL INNOVATION & DESIGN → Technical Description, Innovation and Impact

Introduce the Relevance of your project to the purpose of the Competition
Describe how the project will achieve the expected performance and outcome
Demonstrate the project's technical capability to achieve such goals
Describe the specific innovations proposed by the project and their potential impact on the current industry/ design/ institutional status

3 FUNDRAISING & TEAM SUPPORT → Technical Description, Innovation and Impact | Workplan

Demonstrate Technical support for the team from institutions, industrial partners, etc

4 ORGANIZATION & PROJECT PLANNING → Workplan

Technical Volume
Technical Description, Innovation and Impact

2.3 Technological Design Approach

Team Las Vegas will design a house that incorporates all of the high-tech opportunities, including smart walls, digital environmental control interfaces, solar thermal collectors, and high efficiency photovoltaic panels. We aim to fully integrate these systems and technologies so that they will no longer be present in the resident's sensory foreground, but act as hidden supporting systems for the architectural experience. This approach should help promote market acceptance because the consumer has a choice of purchasing a beautiful piece of architecture that is also energy efficient, instead of having to live with, for instance, awkwardly-installed solar panels that are poorly integrated into the building's design.

In addition to utilizing passive strategies for thermal comfort, the Team has identified various commercially available products to support their design. Since cooling is a major issue for our geographical location, the Team has done research in several cooling technologies. The team has been researching a new HVAC system called DOAS (dedicated outside air system), which conveys 100% outside air to each conditioned space via a constant-volume outside air unit (a total energy recovery ventilator). In addition to delivering ventilation air directly to each space, DOAS excels at humidity control (with an enthalpy wheel) and virtually eradicates microbial problems that contribute to sick-building syndrome. We are also investigating cooling grids made of capillary tube systems, which can be embedded in gypsum board or mounted on ceiling panels. This system provides an even surface temperature distribution. Due to the flexibility of the polypropylene tubes, cooling grids represent an excellent solution for both retrofit and new applications. We have also investigated TEX•COTE® Coolwall exterior wall paint finish, which can lower exterior wall surface temperatures by as much as 40 degrees. This exterior coating system uses the same heat reflective technology the military uses to reduce heat signatures produced by their vehicles. It is formulated to reflect solar heat by changing the invisible portion of the light spectrum, thereby helping to reflect heat without changing color. A study conducted by the U.S. Department of Energy's Oak Ridge National Laboratory showed that using this product can reduce a home's cooling costs by as much as 21.9%.

For heating in the winter, the team has identified a radiant floor system called Warmboard. Warmboard is a whole-home floor heating solution. By bringing the home's floor up to a mildly warm temperature (typically 75˚-85˚) one can experience silent, even, and comfortable warmth. Additionally, radiant heating will dramatically improve indoor air quality and lower the heating cost traditionally associated with inefficient HVAC systems. Warmboard responds faster and more accurately to changing heat loads, when compared to other radiant systems. This system responds quickly to fluctuating heating needs and will provide constant comfort.

We have done a series of investigation of photovoltaic elements for the house, including working closely with personnel of the UNLV Center for Energy Research. Our research strongly suggest using a product from SunPower Corporation. One of the reasons is that these are among the most efficient panels produced in the world, with efficiencies ranging from 19%-21%, allowing us to use fewer panels to meet our power requirement. Sunpower is an American company. Bombard Renewable Energy, one of our sponsors, is Sunpower's Las Vegas representative. So financially it will be desirable to do this. The units can be acquired either as panels or as building-integrated forms. The high efficiency crystalline solar PV panels under consideration are manufactured in an all black design, with each panel having a black back-sheet with the metal contacts between the cells located on the backside of the panels. Additionally, the panel frame is black which further integrates multiple panels into the architectural style of the home. Another option is to cover the roof with solar. These solar shingles take the place of conventional roofing materials and lay flat on the roof

Technical Description:

Passive Strategies

Technologies and Products

Advanced Building Systems

Energy Performance

And More…

Technical Volume
Technical Description, Innovation and Impact

2.6 Internal Review Process for the Design-Build Studio

Architects today are better positioned to see the effects of social, economic, and environmental change than ever before. With the advent of computer modeling and animation, they are also able to develop new ways of thinking about how to conceive and deliver buildings of ever-greater complexity, responding to the challenges of speed, flexibility, and cost in ways that seemed unimaginable a generation ago. One of the unintended side-effects of the embracing of the 'virtual' has been the tendency among many students towards a lack of rigor in considering the actual materials from which their buildings are to be constructed. Yet, these are the 'notes' that, strung together, become the symphonic whole of any great architectural work.

It is for precisely these reasons that the University of Nevada Las Vegas (UNLV) School of Architecture initiated its David G. Howryla Design-Build Studio. Many students who have participated in design-build programs across the country have cited them as critical formative experiences in their development as design professionals. This observation underscores the importance of careful consideration of the goals, methodologies, and opportunities that comprise the Design-Build Studio.

In the Design-Build studio, students formed groups to study the three finalists and winners from each Solar Decathlon in the past; each group also selected one additional noteworthy entry to discuss with the class. They focused on determining what was significant about the selected work, including determining why the finalists and winners were successful. Their research explored how the teams achieved these results in areas such as specific approaches, innovative systems, etc.

In the beginning of the studio, individual students were to propose a design concept, then a process of elimination was applied to narrow down the approach from twelve designs to six, then to three, and then down to the final design concept. During the process of elimination, a conscious decision was made not to describe the methodology at the beginning of the project, as it was important that this process not influence the initial explorations.

Alternate concept: Living Desert House

The two rounds of eliminations left the studio with three teams which spent the next two weeks developing designs that were presented to a jury of faculty and student members from the School of Architecture, the College of Engineering, and professional architects. All three teams had the opportunity to collaborate with the engineering students and faculty in recognizing and planning for areas in energy efficiency, constructability, cost estimation, and transportation consideration. In the final joint review session, the multidisciplinary jury ranked each team's proposal, and the highest scoring proposal was chosen to represent UNLV in the Solar Decathlon.

Alternate concept: Desert Solar House

In practice, there were a few challenging moments, but ultimately, the three schemes that were presented were all credible, serious design proposals; the collaborative process did not 'water down' the ideas; in fact, by working together, the students were able to explore more ideas than would have been possible individually. Interestingly,

Technical Description:

Collaboration Process

Technical Support

Architectural Design

Conceptual Design

And More…

Technical Volume: Key Content

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Describe the specific innovations proposed by the project and their potential impact on the current industry/ design/ institutional status

3 FUNDRAISING & TEAM SUPPORT → Technical Description, Innovation and Impact

Technical Qualifications and Resources

4 ORGANIZATION & PROJECT PLANNING → Workplan

Describe project goals and technical workscope
Describe the project management strategies and include a project schedule
Include a Work Breakdown Structure and Task Description for different phases and periods of the project
Provide management plan approach of managing the work

Technical Volume: Workplan

4.4 Project Organization and Timeline

Team Las Vegas has devised a project organization plan that includes the different phases of the competition. See table 4.1 for details.

Timeline		Task Name	Deliverables
Q1 12	J	Design & Planning Phase	
	F		
	M		· Schematic Design Review
Q2 12	A		· Target 50% Completion for Website
	M		· Schematic Design Model/Manual
	J		
Q3 12	J		
	A		· Design Development Review
	S		· Target 100% Completion for Website
Q4 12	O		· Design Development: BIM, Model & Manual
	N		· Computer Animated Walk-through
	D		· Construction Documentation Review
Q1 13	J	Construction Phase	· Scale Model
	F		· Health & Safety Plan
	M		· Construction Documentation : BIM, Model & Manual
Q2 13	A	Transporting & Commencing	· Project Summary
	M		· Public Exhibit Materials
	J		· Completion of Construction / Testing /Commissioning
Q3 13	J	Deconstruction Phase	· Assembly / Open House / Testing Transport Systems
	A		
	S		
Q4 13	O	Hauling back and deploying in	
	N	Las Vegas	· Disassembly
	D		· Final Report

Table 4.1 Estimated Project Timeline

4.5 Decathlon House After the Competition

Workplan:

Project Timeline

Project Phases and Tasks

Milestones and Go-NoGo

Decistions

And More…

Technical Volume: Workplan

4.3 Conflict Resolution

Conflicts will arise during the design and construction of any project, and Team Las Vegas has a thorough understanding of the need for a clear and concise process that anticipates issues and provides clear resolution when necessary. The project's Design-Build project structure provides a delivery system where design and construction are contracted as a single entity that will design, engineer, procure and execute construction. Within this structure, Team Las Vegas will utilize decision matrices and the expertise of design-build professionals in the community to mediate issues and ensure issues are resolved in a timely and fair manner.

UNLV has identified three ways to combat any conflicts that may arise during the next two years.

- To reduce the number of conflicts, open dialogue and communication between all participants is crucial. Key to this is a successful and strong leadership team. The project manager and all five team leaders have shown strong communication, leadership and technical skills and will encourage discourse as a means to early and successful conflict resolution.

Fig. 4.1 Team Las Vegas Organizational Structure

Workplan:

Organizational Structure

Management Plan

Roles of Team Members

Conflict and Communication Management

And More…

Techical Volume: Key Content

5 CONCEPTUAL DESIGN → Concept and Design Elements

Provide drawings, illustrations, diagrams, etc, to demonstrate important conceptual design
Include all material in the Appendix (Excluded from 20 Pages)

6 CURRICULUM INTEGRATION → Technical Qualifications and Resources

7 CONCLUSIONS

8 APPENDICES → Provide Supporting Document

Techical Volume: Key Content

5 CONCEPTUAL DESIGN → Concept and Design Elements

Provide drawings, illustrations, diagrams, etc, to demonstrate important conceptual design
Include all material in the Appendix (Excluded from 20 Pages)

6 CURRICULUM INTEGRATION → Technical Qualifications and Resources

Include financial/ equipment/ facility support from industrial or institutional partners
Describe team's expertise and team members' qualifications
Describe the curriculum/ academic integration of the project with the institution's courses

7 CONCLUSIONS

8 APPENDICES → Provide Supporting Document

Technical Volume:
Technical Qualifications and Resources

Table 6.1 Course Integration

Courses	Solar Decathlon Components											
	Exterior Architectural	Interior Architectural	Landscape	Structural	Solar	Mechanical	Electrical	Materials	Construction	Cost & Financial	Market	Communication & Outreach
AAE 495/795, Meditations in Making		■										
AAE 770, Research Methods in Environmental Design	■	■										
AAE 780, The Design Build Process	■	■										
AAI 680, Furniture Design		■										
ABS 521/522, Construction Technologies I & II	■	■		■								
ABS 531/532, Environmental Control Systems I & II	■	■		■								
ABS 541/542, Structures for Architects I & II	■	■		■								
ABS 632, Solar Energy Applications in Architecture	■	■		■	■							
ABS 741, Integrated Building Systems	■	■										
CEM 250, Construction Materials and Methods								■	■			
CEM 451/451L, Construction Estimating									■	■		
CEM 480, Sustainable Construction									■	■		■
ECO 707, Environmental/Natural Resource Economics										■	■	■
EE 495, Photovoltaic Devices and Systems					■	■	■					
EGG 150/450, Introduction to Solar Energy Utilization					■						■	■
ENV 101, Introduction to Environmental Science											■	■
ENV 206, Introduction to Climate Change											■	■
ENV 407, Environment and Society											■	■
ENV 420, Environmental Impact Analysis										■	■	■
HIST 441/443, American Environmental History												■
JOUR 202, Electronic Media Production I												■
JOUR 261, Integrated Marketing Communications												■
LAND 242, Irrigation			■									
LAND 258, Xeric Plant Materials			■									
LAND 443, Stormwater Management	■		■									
LAND 499, Sustainable Design for the 21st Century City			■									
ME 707, Radiation Heat Transfer						■						
ME 714, Computational Aspects of Solar Energy					■	■						
ME/EE/CE 497/498, Senior Capstone Design				■	■	■	■					
MKT 301, Marketing Management											■	■
MKT 422, Integrated Marketing Communication											■	■
NRES 411, Environmental Law												■
SOC 407, Environment and Society												■

Technical Qualifications and Resources:

Course/ Campus Integration

And More…

Technical Volume: Technical Qualifications and Resources

3.4 Facilities and Equipment

There are several research facilities that will serve as excellent resources for Team Las Vegas:

CNC milling machine

CER Solar Site

- The Center for Energy Research (CER, http:/www.cer.unlv.edu) is a soft-money-funded operation that has performed a number of solar and renewable energy projects over the last 15 years. Included has been a project funded by the National Renewable Energy Laboratory (NREL) on the development of a zero energy house and its energy performance comparison to an adjacent code-built house. Both were monitored for five years. Currently the CER is the lead, in collaboration with Pulte Homes and NV Energy, on a large DOE-funded project on the development of a new housing tract (185 homes) that is designed to reduce the electrical energy peak demand by 65% compared to code built developments. CER also has a Solar Site that has two large high concentration (500X) PV systems, a number of solar and hybrid lighting systems, including a Sunlight Direct system, and a Façade Evaluation Facility. Lastly, CER has a wide variety of testing facilities related to PV and solar domestic water heating components and corresponding evaluation capabilities.

4.1 Team Las Vegas Organization

Team Las Vegas is proud to contribute to the diversity of the Solar Decathlon competition. Our team is composed of a diverse group of people. We are not only a combination of architecture and engineering students and faculty, but also a mix of skills, trades, and life experiences – our team includes an artist, nuclear engineer, anthropologist, set designer, furniture maker, biologist, journalist, construction superintendent, historian, interior designer and welder. We are each other's teachers. We believe this diversity will contribute to a successful entry for Team Las Vegas. (See figure 4.1 for organizational structure)

4.2 Faculty and Student Team

Administrators

Tom Piechota	Assocate VP Interdisciplinary Research	Sustainability and Interdisciplinary Research
	Professor	Civil and Environmental Engineering
David Baird	Director, Professor	School of Architecture
Nancy Strouse	Senior Associate VP for Development	UNLV Foundation

Principle investigator

Eric Weber	Assistant Professor	Architecture
	Director	David M. Howryla Design-Build Initiative & Building Technologies Laboratory

Technical Qualifications and Resources:

Facility and Research Support

Faculty and Student Qualification

And More…

Techical Volume: Appendix

5 CONCEPTUAL DESIGN → Concept and Design Elements

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Include all material in the Appendix (Excluded from 20 Pages)

6 CURRICULUM INTEGRATION → Technical Qualifications and Resources

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7 CONCLUSIONS

8 APPENDICES → Provide Supporting Document

Technical Volume: Appendix

November 8, 2011

Dear Solar Decathlon committee:

It is our pleasure to financial support the proposal by the University of Nevada, Las Vegas (UNLV) to participate in the 2013 Solar Decathlon Team. UNLV will support the Solar Decathlon Team through a financial commitment totaling $200,000. The specific commitments are outlined below:

- Vice President for Research and Dean of Graduate College ($40,000 for Graduate Student support)
- Dean of Engineering ($40,000 for Graduate Student support)
- Director of School of Architecture ($60,000 for Graduate Student support and faculty support)
- Associate Vice President for Interdisciplinary Research (representing the Renewable Energy Education Programs) ($60,000 for Graduate Student and Undergraduate support, and materials and supplies).

We believe this opportunity will showcase the abilities of our students and faculty in the various disciplines, while helping the Department of Energy advance the use of new technologies. Please contact me if you have any questions.

Sincerely,

Signature

Appendix:

Supporting Documents

Letters of Sponsorship

Conceptual Design Diagrams

Bio/ Resumes of Team Leaders

And More…

Summary and Application Submission

- Summary: Key Content for Technical Volume
  - Design Summary: Proposed Scheme, Concept, Innovations
  - Architectural Conceptual Design
  - Multidisciplinary Collaboration and Innovation
  - Impact of Project
  - Curriculum and Facility Integration
  - Project Schedule and Workplan

Summary and Application Submission

- Submission

  - Please Submit the Technical Volume and Other Required Materials for the Full Application by April 18th 2016

  - Please email the PDF of the Full Application to submit@sdchina.org.cn

  - Please mail physical copy of the Full Application to

    Miss Youran Zhao

    Organizing Committee Solar Decathlon China

    No. 6-3, Building A, SOHO 2 Guanghua Rd, Chaoyang

    Beijing, China, 100020

    北京市朝阳区光华路SOHO2期 A座6-3， 100020赵悠然（收）

Next Steps: Upcoming Events

- Team Contact Confirmation

  - All Teams: Please Identify 1 Person per Institution as Primary Point of Contact and Send the **Team's Name, Institution Name, Contact Name, Title, Email, Phone Number of the Contact** to support@sdchina.org.cn

Next Steps: Upcoming Events

- Team Introduction Video

  - OCSDC Will Host a Ceremony in April to Officially Initiate The 2017 Solar Decathlon China Competition.

  - Each Team is Required To Make a One-minute Team Introduction Video for the Solar Decathlon China 2017 Community.

  - Please keep the file as AVI, WMV or MP4 format under 100 MB and forward the video to support@sdchina.org.cn before April 1st, 2016

Thanks!