

# Shiley-Marcos School of Engineering

*Inspiring Innovation*



## Sustainability and Humanitarian Engineering Garage: \$500,000

### Background

The Shiley-Marcos School of Engineering is seeking \$500,000 to build a **sustainability and humanitarian garage**. Transitioning to new, sustainable resource practices, presents one of the most significant challenges of the 21st century. The challenge is unprecedented in scope. It requires a fundamental shift in consciousness, as well as in action. It calls for a fresh vision and new approaches for shaping an evolving new reality.

As a starting point, USD need not look beyond our own backyard. The City of San Diego has become one of California's most concentrated centers of clean-tech employment, with more than 850 companies. Between 1995 and 2010, employment in the sector increased 73 percent, while total regional employment grew 26 percent. These companies represent 10 percent of the total green jobs in the state, 13 percent of renewable energy jobs in the state, and 11 percent of energy efficiency and green building jobs. By all indicators, this trend is predicted to continue.

In Fall 2014, the Shiley-Marcos School of Engineering added a specialization in sustainability to its educational curriculum, where students in many different disciplines can learn and prototype sustainable solutions. This curriculum requires a complementary laboratory space for students to test and practice the concepts of sustainability they will be learning. Currently, the Shiley-Marcos School of Engineering does not have such a space.

### Objectives

The Shiley-Marcos School of Engineering embraces the spirit of innovation that thrives in a garage and celebrates that space in one's home where so many inventors and entrepreneurs, including Donald Shiley, have done groundbreaking work. To best prepare

engineering students for employment in the clean-technology and sustainability sector, we are seeking support to build a sustainability and humanitarian engineering. This learning laboratory will provide hands-on training for engineering students to focus on energy, water, sustainable design, and green materials and processes.

Students will work collaboratively to develop sustainable materials, learn methods for green processing, and gain a holistic understanding of how to reduce energy consumption, including electricity and water use. Working with faculty and industry partners, students will create innovative designs and practices to build a greener community and more sustainable future.

The space will be developed and built, not only as a location for prototyping and testing sustainable product design, but also as a place where sustainable practice is demonstrated in the fabric of the construction. Sustainable materials will be used and also displayed with learning modules attached.

The energy consumption of the lab — and perhaps the entire infrastructure — will be minimized, monitored and displayed in real time as a learning and design tool. This will be a lab where water use and greenhouse gas generation of the university can also be monitored and shared as a learning tool. It will be a place where reuse and recycling is exemplified. Further, it will be a design laboratory where students will create and prototype new efficient products and materials in collaboration with community and industry.

### Impact

The sustainability and humanitarian garage will:

- Prepare USD engineering students for employment in the growing clean-tech and sustainability sector, in San Diego and elsewhere;

- Attract and enable corporate partnerships; and
- Raise USD's local, national and international reputation as a sustainable university.

## For More Information

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