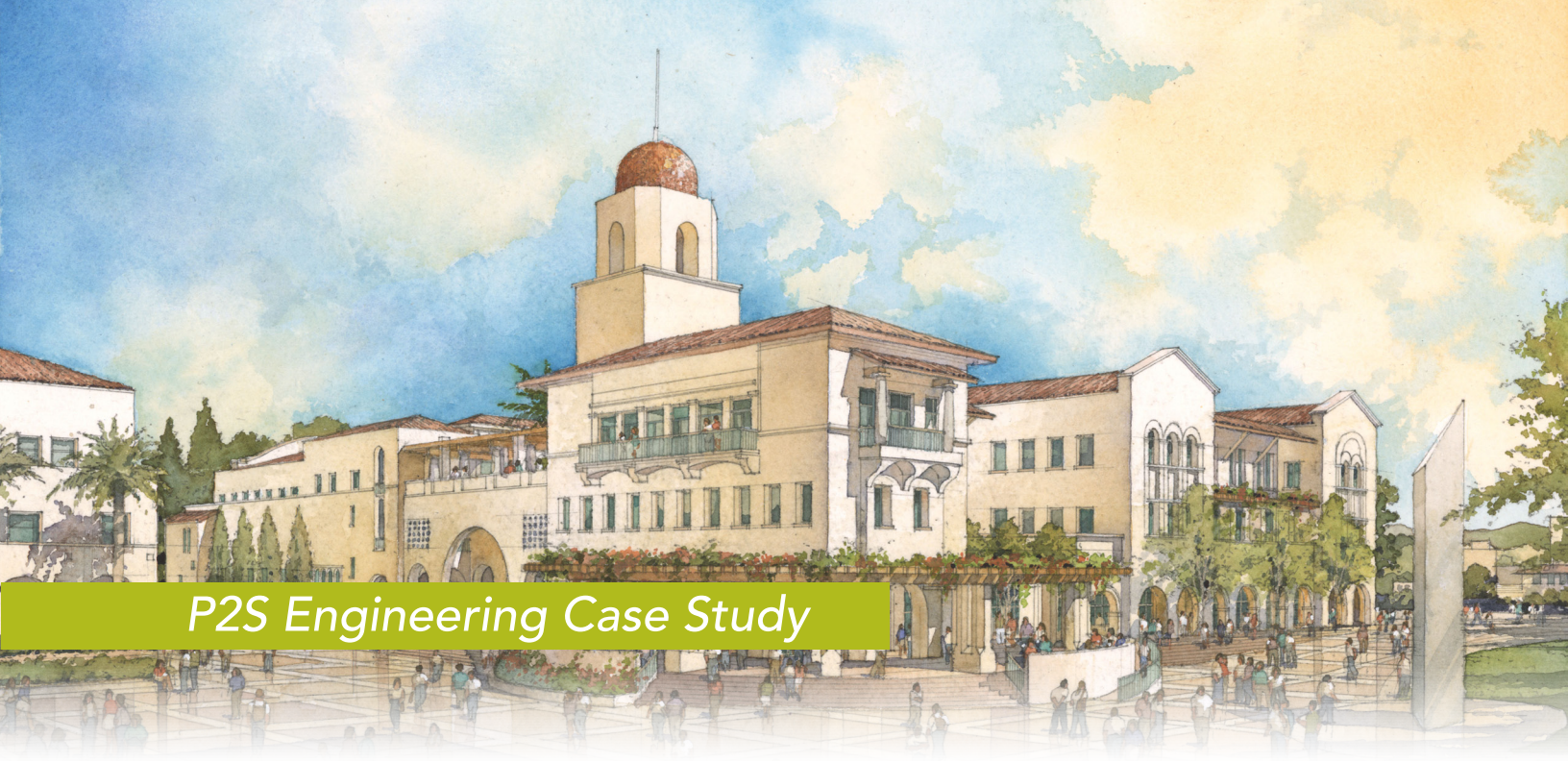

P2S Engineering Case Study

# San Diego State University — New Aztec Center

*San Diego State University's New Aztec Student Center Incorporates P2S Designed Green Technologies to Qualify for LEED™ Platinum Certification*

As the San Diego State University Class of 2011 dons their caps and gowns, the University is making plans to raze the existing Student Union building and begin construction on a highly sustainable student union engineered by P2S Engineering.

The new Aztec Center Student Union, designed by architect Cannon Design, features a classic Mission Revival design that pays tribute to the rich history of San Diego State University. Beyond the architecturally beautiful arches, arcades, balconies and courtyards of the new Student Union, the engineering design will incorporate sustainable features that will contribute to its LEED Platinum Certification.

P2S Engineering provided mechanical, electrical, plumbing and telecommunications design for the new three-story, 202,000 square foot building. The new building will house associated student offices, a fitness and recreation center, an intercultural relations center which includes a meditation room, meeting and program spaces including a 1,200 seat lecture-style hall and a 300 seat theatre. Dining areas will include three cafés, a pub, market and convenience store.

"We've incorporated a number of energy-saving features that will not only make the building more efficient, but will significantly reduce operating costs," said Kent Peterson, Vice President and Chief Engineer of P2S Engineering. Peterson, who is also acting as Project Manager for the highly visible project said, "We've incorporated both photovoltaic (PV) solar panels and skylights for power generation and natural daylighting, sunshade devices and operable windows for energy reduction and natural venting."

According to Peterson the project takes advantage of traditional engineering methodologies along with a number of new green engineering technologies that work together to make for a cleaner building that requires less natural resources, while providing increased comfort for students, faculty and visitors. The design team used an integrated strategy to maximize benefits while minimizing resources and costs. P2S included sub-metering of all utility

systems within the building to allow the owner to better understand energy and water consumption patterns.

The HVAC is designed to consume 40% less energy than Title 24 standards and incorporates several low-pressure variable air volume (VAV) systems with economizers. Radiant slab heating and cooling with a dedicated outside air system is provided in parts of the building to reduce fan energy and improve indoor air quality. Carbon dioxide sensors will provide demand-based ventilation for high occupancy spaces.

The electrical design includes highly efficient light fixtures and task lighting to illuminate the spaces within the buildings, effective daylight and demand controls to harvest daylight savings and reduce overall lighting power densities, use of energy efficient distribution transformers to reduce energy losses and provision of renewable power through PV system on the roof to offset a portion of the building energy usage.

Demolition of the existing facility is scheduled this summer, and construction is slated to begin later this year. The project is scheduled to open in August of 2013.