

# Innovations in Campus Sustainability: New Lessons from the Ivy Towers

BY ELIZABETH SHREEVE AND ROBERT SEGAR

University and corporate campus planners have been trading ideas for years. A half century ago, Stanford University's cloistered quads provided a paradigm for Silicon Valley's high-level tech facilities. More recently, the efficient layouts and robust amenities of business campuses such as Google's – with day care centers, health clubs, dining options – raised the bar for academic institutions seeking to attract top students and hone fundraising.

At this juncture, heightened awareness of global warming and sustainability poses a new challenge for both sectors: balancing financial pressures with the need for environmental stewardship.

University campuses – especially

those with academic missions tied to core disciplines of sustainability, from engineering to business innovation – can provide corporate real estate (CRE) managers, CEOs, CFOs and board members in all industries with a laboratory of cost-effective measures to achieve institutional or corporate goals.

At the same time, universities are operating under tighter budget constraints. More students, less money, higher standards for sustainability – how can that be achieved?

## **Balancing Budgets and Stewardship**

Recent university developments demonstrate that sustainability contributes significantly to the quality of life on campus, attracting the best students and

new talent while positively affecting bottom-line performance in productivity, energy savings, community relationships, customer and constituent profile, real estate flexibility and best practices in the use of land and other resources.

University case studies offer an emerging set of best practices and innovation for corporations to consider in their own real estate planning. Strategies include:

➤ Collaboration with energy companies and public-private partners and other partners to accomplish aggressive energy-efficiency goals while achieving strong place-making

➤ Making best use of resources including landholdings, construction/capital improvements and management/maintenance practices

➤ Using strong design of buildings and



Rochester Institute of Technology

landscape to foster community, commitment to academic mission and versatile, high-functioning outdoor spaces.

**UC-Davis: Net-zero-energy as mission and market**

At the University of California at Davis, an innovative 200-acre (81-hectare), \$280-million campus expansion called West Village is under construction as a “zero net energy” project aimed at supplying its own power from renewable energy sources.

Initiated in response to growing enrollment and lack of available housing, West Village will provide housing for about 475 faculty/staff and 3,000 students along with shops, community college facilities and open space, including a village square, bike/pedestrian systems

and functional green space with water-polishing wetlands and bioswales. The first phase of construction includes mixed-use buildings, student housing and a leasing/recreation center.

West Village aims to achieve zero net energy by using renewable energy sources and incorporating effective site planning and building energy-efficiency measures into every stage of development and design. The university is already tapping a \$1.9-million grant from the California Energy Commission’s Public Interest Energy Research Program to analyze and design energy technologies and smart grid/network for gathering, storing and distributing energy. One of the renewable energy technologies is a biodigester developed by UC Davis researchers.

UC Davis and its development partner,

West Village Community Partnership, are working with private-sector interests to tap best practices in the industry, including Chevron Energy Solutions, which is helping shape the energy strategy; local energy consulting firm Davis Energy Group; and Pacific Gas and Electric Company, the area’s power utility.

West Village also draws upon expertise of the university, including the UC Davis Center for Entrepreneurship, the UC Davis Water Efficiency Center, the UC Davis Energy Institute, the UC Davis Energy Efficiency Center, the UC Cooperative Extension Livestock Air Quality Program, the UC Davis Western Cooling Efficiency Center, the UC Davis California Lighting Technology Center and the UC Davis Biogas Energy Project.

UC Davis West Village



Monterrey University Campus



**University of Monterrey: Overlaying a ‘New High Sustainability Campus’ onto the Old**

The University of Monterrey, Mexico, Latin America’s leading institution in a number of disciplines, is currently overhauling its entire campus plan – without changing historic and existing buildings – to transition from an auto-dependent community to a pedestrian/transit emphasis.

The master plan incorporates greater sustainability through the use of indigenous plant materials, natural water-retention and filtration and low maintenance landscaping, as well as site-design strategies to enhance the learning and collaboration among students and faculty.

“The growth of the Monterrey campus is not unlike that of many corporate campuses that experience a range of construction and rehab over a period of years,” said Rene Bihan, SWA Group’s Landscape Architect. “Studying the students’ daily pattern of life, pedestrian and vehicular uses and the university’s growth plans and branding or identity goals are critical tools for planners to create a new landscape overlay plan.”

Designing in this comprehensive fashion also makes it easier to incorporate sustainability features that blend into the site – gray water systems to recycle street run-off and roof drainage, for example.

SWA planners are also re-introducing indigenous plant materials and water-conservation strategies as a “teaching tool,” demonstrating that local plants can be beautiful – and tasty – in the case of fruit-bearing shade trees or screening plants such as berries and beans.

**Rochester Institute of Technology: Add-on Space with Mission-wide Impact**

At the Rochester Institute of Technology (RIT) in New York, new facilities at the edge of campus are creating a better integration with the surrounding community, while establishing a highly-competitive international student environment. RIT Global

Village, a 189,000-sq.-ft. (17,559-sq.-m.) mixed-use development, includes teaching space, housing, retail and community/social areas.

The global student population – both inbound students from other countries and U.S. students preparing for exchange and grad programs abroad – formerly occupied cramped and dispersed locations. The new project provides a truly international experience, fostering greater commitment to study objectives while engendering strong bonds to RIT.

To promote interaction, Global Village sports a multi-functional outdoor plaza with casual and formal outdoor restaurant and café seating for more than 200 people, an outdoor living room/lounge with a fire pit and small performance area and a sun-facing lawn for a range of seating and socializing options. During the winter, the outdoor lounge transforms into a small skating rink.

The addition of a green roof above the restaurant provides attractive views from rooms above as well as increased habitat and improved storm water management and water polishing. The project’s design accommodates additional expansion in an attractive, walkable environment close to the university’s core spaces.

**The Next Innovation: Bringing it all together**

Given primary focus on education and research, college campuses often have the edge in trying new ideas and tools. Sustainably designed campuses help maintain positive relationships with surrounding communities and experience fewer problems with expansion, traffic and other issues.

What’s more, sustainability that’s evidenced in an organization’s physical campus enhances its brand image in support of fundraising, business relationships and recruiting. One “holistic” approach is to foster productivity and creativity by setting up social spaces for informal interactions and synergetic relationships among departments rather than “balkanized” divisions.

Site design can also greatly enhance flexibility of the campus in handling

changing work methods or curriculum and phasing for expansion and flexible scenarios for ownership, lease, rental and sublease.

Good planning, design and vision must all be brought into the discussion in developing the campus of the future. In the days to come, universities and colleges will continue to offer testing grounds and case studies for campuses of all kinds.

**About the Authors**



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