

Tools for Smart Growth and Sustainable Campus Development

Summary by Michael Davies

Panelists

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During this workshop, Rich Miller illustrated recent smart growth, sustainable development (SD) and low impact design (LID) initiatives at the University of Connecticut (UConn) and Mike Dietz focused on LID practices related to stormwater management and water quality.

SUSTAINABILITY STRATEGIES AT THE UNIVERSITY OF CONNECTICUT

UConn has pursued sustainable development for a number of reasons. Most importantly, the University is in the middle of a \$2.3 billion capital improvement program designed to enhance and rebuild the campuses in order to attract and retain the most qualified students and faculty. Since the implementation of this program, known as UConn 2000, and now 21st Century UConn, the UConn applicant pool has in fact increased along with other metrics, such as average test scores and diversity of incoming students. For example, UConn now admits more than 100 high school valedictorians and salutatorians each year, and is consistently ranked as the top public university in New England. Prospective applicants are beginning to demand smart campus growth initiatives. Schools with programs in place will differentiate themselves in the marketplace.

UConn's main campus is located in Storrs, within the rural northeastern Connecticut town of Mansfield. The university owns 4,000 acres in Mansfield, including its 886-acre Agricultural/East Campus. As an important first planning step for ensuring sustainable growth, UConn's Office of Environmental Policy led a multi-stakeholder process to update UConn's East Campus Master Plan. For the first time, this effort analyzed not just development opportunities but also conservation goals for important, GIS-mapped, natural, historic, recreational and cultural resources.

Another critical organizational first step toward a more sustainable campus was getting stakeholder support for the various initiatives being proposed. UConn created the “Environmental Policy Advisory Council” (EPAC) that included representatives of the various school departments and committees. The advantage of an inclusive council is the greater ease with which points of contention may be identified, decision makers engaged, and solutions proposed and implemented. Of paramount importance was the need to get the president’s office both involved and supportive of the changes being made.

EPAC adopted an Environmental Policy Statement reaffirming UConn’s commitment to sustainability, focusing on the following areas:

- Environmental performance
- Responsible management and growth
- Outreach
- Academics
- Teamwork

UConn’s ENVIRONMENTAL IMPACT EVALUATION PROCESS

As a state facility, UConn is required to perform an Environmental Impact Evaluation (EIE – the CT version of an EIS as required under NEPA) for all larger capital projects. The EIE serves as an effective “big picture” planning tool and requires public hearings at both preliminary and later stages of a process that typically takes at least nine months to complete. Thus, the EIE is a valuable tool for analysis and dialogue on a wide range of potential environmental impacts and any proposed mitigation strategies.

SUSTAINABLE DESIGN

UConn has commissioned its first LEED building, the first LEED athletic complex in the NCAA. The university is also pursuing LEED certification and/or sustainable design goals for several other construction projects. In an effort to formalize green design initiatives on campus, UConn is one of only a handful of universities nationwide to have developed its own campus sustainable design guidelines (SDGs). All new construction on the campus must comply with these guidelines. The SDGs have helped:

- signal a paradigm shift on the part of the university;
- present identifiable standards that can be measured;
- engage the community;
- acknowledge success;
- demonstrate commitment;
- facilitate benchmarking.

SDGs from other universities and organizations were considered in the development of UConn's own guidelines. Institutions whose SDGs were reviewed included Stanford University, University of Buffalo, University of Minnesota, and the Heinz Foundation.

One debate that has been addressed at UConn is whether or not to mandate the use of the LEED process as the mechanism for implementing green design in buildings. The positive aspects of using the LEED system are that it provides the design team with clear objectives and standards. As such, it is a good instrument to focus design. It is also a well known program (a label, for all intents) that serves as an advertisement of the university's commitment to sustainability in new buildings. LEED's third-party verification process also enhances the credibility of the project.

The problems and concerns with LEED include the high cost premium of the certification process, especially professional fees incurred for documentation and assessment of design options. This inevitably forces trade-offs with respect to features that might address programmatic needs. Because of the time and cost involved with this process, LEED is often poorly suited to smaller projects. Having a campus specific set of SDGs can help fill the gap that may occur if LEED is not used on a small project. And lastly, LEED is often inconsistent with the value-engineering (VE) process. During VE, many design elements that have a high premium are substituted for lower cost (but often higher life-cycle cost) alternatives.

SUSTAINABILITY INITIATIVES TO DATE

Among the initiatives implemented at UConn are the following:

1. The new athletic facility is the first of its kind to be LEED rated.
2. A "UConn Green Campus Fund" provides an alternative for alumni, staff and other donors who choose to direct contributions toward sustainability efforts – in less than a year since its creation, the fund has raised about \$10,000 for sustainability initiatives on campus.
3. The design of a new gateway road into UConn's undeveloped North Campus includes a vernal pool crossing extension to accommodate migratory patterns of amphibian populations.
4. A 64-acre environmental education park was created on land adjacent to UConn's capped landfill.
5. A Campus Bicycle Plan will guide more bicycle-friendly development around a network of trails and shared roadways and will ensure more amenities to promote biking as a viable campus transportation alternative.

At the LEED athletic facility, used sneakers were collected for recycling from students and faculty in order to demonstrate how the sneakers' tread is re-used in the synthetic turf. The Green Campus Fund consists largely of alumni contributions and will be expanded to encourage more faculty and staff contributions. At the capped

landfill, landscape architecture students designed the new preservation area resulting from the EPA- and DEP-approved closure plan. For the bicycle plan, the key considerations were connectivity of the routes, proper signage, removing bikers from pedestrian walkways, and providing storage racks at key destination points. The idea was not only to provide bicycling facilities but also to foster a bicycling culture.

STUDENT AND FACULTY INVOLVEMENT

An essential element to the success of the sustainability program was getting students and faculty involved. The new 300-member EcoHusky Student Group, whose logo is a green paw print logo (a metaphor for a diminishing ecological footprint), is a student group established to focus on campus sustainability. The group performs student outreach, takes trips to relevant facilities, and holds regular meetings and lectures to increase knowledge. Equally important is getting senior faculty, staff, and administration to both buy in and support the effort. UConn has established an “Environmental Leadership Award” that is given periodically to deserving recipients in several distinct categories.

NON-POINT SOURCE WASTEWATER MANAGEMENT

UConn has spent a great deal of effort in addressing non-point source wastewater discharges. Michael Dietz presented innovations at UConn designed to reduce water volume following rain events. Additional information can be seen at UConn’s Nonpoint Education for Municipal Officials (NEMO) website (<http://nemo.uconn.edu/tools/publications.htm>). Some of the technologies employed were as follows:

1. swales
2. buffers
3. vegetated strips
4. rain gardens
5. porous pavements
6. green roofs
7. rain barrels

The unifying theme amongst these ideas was to increase infiltration and/or decrease volume of water directed to the sewer system in a manner that is also aesthetically pleasing.

QUESTIONS AND ANSWERS

- Q:** How can you prevent oils and contaminants from non-point sources infiltrating into groundwater?
- A:** Research has shown that concentrations of most pollutants in stormwater are low, so groundwater contamination is usually not an issue.
- Q:** To whom does the Office of Facilities (i.e. Miller's group) report?
- A:** The Office of Facilities reports to UConn's Chief Operating Officer, who in turn reports to the President. Miller noted the importance of reporting directly to the top administrative personnel as an essential means of achieving implementation.
- Q:** What was the receptiveness of contractors to SDGs?
- A:** Contractors were not resistant to the new guidelines. The key issues were having pre-construction meetings that clearly laid out expectations and requirements to the contractors. The key to keeping contractors happy in this regard was avoiding change orders.

