This service-learning project addressed stormwater-related problems in the lower Campus Creek area of the KSU campus. Landscape Architecture and Bio-Eng. students were grouped with landscape architecture professionals and faculty into ten teams of 10-12 people to design best management practices (BMPs) for two previously-identified problem areas on campus. On October 26, 2006 guest lecturers, Andrae Keverick (LA) and Tom Price (PE), spoke on stormwater management and sustainable site planning. Keverick highlighted ways to work with clients to implement environmentally responsible stormwater management plans. Price discussed innovative, affordable, and ecologically responsible solutions for stormwater management in urban areas. That evening Dennis Haag (Ecologist) offered examples of how stormwater pipelines and naturally-adopted ecosystems can be used in stormwater management.

During the October 27th Stormwater Management Planning/Design Charrette, teams were presented with two goals: 1) design a rain-garden, stormwater management BMPs, and/or streambank improvements along a target area of Campus Creek, to improve the environmental setting and reduce stormwater runoff, and 2) demonstrate specific ways to address urban stormwater runoff to KSU students, staff, faculty, and visitors. Teams 1-2 were assigned to the large parking lot area behind the Wind Ensoon Lab, Team 3 investigated the Campus Creek corridor, and Teams 4-10 explored the area near the International Student Center, Derby Dining Complex, and adjacent residential halls. Team members worked on-site and in Seaton Hall, developing conceptual designs for their assigned focus area, then presenting the work at an open house. Team members explained their designs for stormwater management and storm improvements and answered questions posed by guests and other team members. Most teams included designs and sketches for rain-gardens, bio-swales, porous pavement in parking lots, water retention ponds, vegetated detention areas, and green roofs. Many of these conceptual design ideas will be utilized by KSU faculty and students in the coming years to develop feasible and affordable solutions for storm management within the Campus Creek Watershed.

The project has continued to provide significant benefits to the community, including:

1. The implementation of rain gardens and other stormwater management practices has improved the aesthetic appeal of the campus and reduced stormwater runoff.
2. The project has provided opportunities for students to apply their knowledge and skills in real-world settings.
3. The project has helped to raise awareness about stormwater management among the campus community.
4. The project has helped to reduce the risk of flooding and erosion in the Campus Creek area.
5. The project has provided an opportunity for students to engage with professionals and gain valuable experience.

The project has been successful in achieving its goals of improving stormwater management on campus and providing opportunities for students to learn and grow.

**SELECTED RESPONSES:**

- "I learned a lot from the professors and professionals. It was a great experience to work as part of a team and not be looked at as though I was a student."
- "I enjoyed interacting with the professors and professionals. It was a great opportunity to work as part of a team and develop solutions for future stormwater management projects."
- "My group went to the top of the class by creating innovative and functional solutions. The project provided an opportunity to work on designing terraces, bioswales, and rain gardens."
- "I enjoyed working on the project and developing solutions for stormwater management."
- "The experience of working on a stormwater management project was beneficial in many ways. I have begun to understand stormwater management and the need for it in urban areas."
- "The project will continue to support and inform stormwater management in my future projects."

**Open-ended Responses on Student Post-participation Survey Fall 2006 Stormwater Management Planning/Design Charrette**

- "How did the stormwater management project impact you personally?"
  - "I learned a lot from the professors and professionals. It was a great experience to work as part of a team and not be looked at as though I was a student."
  - "I enjoyed interacting with the professors and professionals. It was a great opportunity to work as part of a team and develop solutions for future stormwater management projects."
- "What do you think were the most important lessons learned from the stormwater management project?"
  - "I learned about the importance of designing terraces, bioswales, and rain gardens."
  - "I enjoyed working on the project and developing solutions for stormwater management."
- "What would you change about the stormwater management project?"
  - "I would have liked more interaction with community partners."
  - "I would have liked more opportunities to work on designing terraces, bioswales, and rain gardens."
- "What was the most significant impact of the stormwater management project on the campus community?"
  - "The project provided an opportunity to work on designing terraces, bioswales, and rain gardens."
  - "I enjoyed working on the project and developing solutions for stormwater management."
- "What are some ways the stormwater management project could be improved in the future?"
  - "I would have liked more interaction with community partners."
  - "I would have liked more opportunities to work on designing terraces, bioswales, and rain gardens."

**Other feedback:**

- "The experience of working on a stormwater management project was beneficial in many ways. I have begun to understand stormwater management and the need for it in urban areas."
- "The project will continue to support and inform stormwater management in my future projects."

**KSU WaterLINK: Connecting Students, Faculty, Staff, Professional Planners/Designers, and Community Watersheds Kansas State University Stormwater Management Project – Manhattan, Kansas**

This collaborative planning/design charrette and design-build project has engaged students, faculty, staff, and professionals in the task of considering ecologically sound methods to treat stormwater that falls on the Kansas State University (KSU) campus.

In the process of envisioning the future and implementing a rain garden, new goals have been achieved.

1. A rain garden was designed and implemented, thus reducing stormwater runoff and increasing water as a naturally occurring resource along a section of Campus Creek. The rain garden was constructed during the Spring 2007 semester for KSU students, staff, and faculty, with assistance from community partners – at the International Student Center (ISC).

This project was made possible by a collaboration between the Kansas State University Landscape Architecture and Bio-Engineering Department, the University Landscape Architectural Planning and Design Program, and the University’s Office of Sustainability (KSU WaterLINK).

2. Specific ways to effectively address urban stormwater runoff are being vividly demonstrated to KSU staff, students, faculty, administrators, and visitors. Additionally, ongoing maintenance, monitoring, and documentation of results offer insights for future design considerations.

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