



SUNY-Cobleskill Students Build Irrigation System for Soccer Field

By Alan Ginsburg

The men's soccer team at the State University of New York at Cobleskill sustained fewer injuries last year. This may be attributed to an automated irrigation system designed and installed by students, which provided a denser turfgrass cover and softer playing field.

"Before, if it didn't rain or the field didn't get some kind of moisture, within a couple of days the ground was almost like concrete," says soccer coach John Price. "Now the field is much nicer and much easier on the players' legs, especially from the constant pounding. Players don't seem to get torn up as easily when they fall." Moreover, he says, while worn spots in the middle third of the field and in the goal areas were a common problem, now the grass seems to hold up longer.

The computer-controlled irrigation system replaces the college's labor-intensive, time-consuming and less efficient process of dragging hoses and portable sprinklers around the 220-by-360-foot field to irrigate. In cooperation with representatives from S.V. Moffett, a local irrigation equipment supplier and distributor, and Hunter Industries of San Marcos, CA, Plant-Science Professor George Crosby and undergraduate technology students in his irrigation course designed and built the six-zone irrigation system featuring 24 sprinkler heads.

In addition to benefiting the athletic department, building the system gave Crosby's students who plan to seek employment in the landscape and turf industry firsthand experience in an important phase of the industry: water management for maintaining quality turf. For the students, says Crosby, designing the system "was like putting together a 5,000-piece puzzle with the pieces all basically the same color."

Getting students to envision a complete picture of what was needed to ensure an adequate irrigation system for the soccer field meant including such puzzle pieces as soil type, amount of water in the soil, estimates of water loss through evapotranspiration during hot summer months, frequency of field use, product selection, sprinkler operating pressures, spacing between sprinklers and operating schedules. Nevertheless, says Crosby, "Designing the irrigation system in the classroom is one thing, but actually installing the equipment and finding out that your pieces of the puzzle fit and complete the picture is something else."

For the more than two dozen students who participated, the project offered a chance to draw on the know-how of a product dealer and a manufacturing representative as well as the expertise of their professor. For Jeff Hume of S.V. Moffett, a Rochester, NY-based supplier of irrigation products and equipment with a branch in Cohoes, NY, assisting the students



The SUNY-Cobleskill soccer team now plays on a softer field thanks to a newly installed automated irrigation system. Photo courtesy: Rose Mackiewicz, SUNY-Cobleskill.

in the project was part of an ongoing relationship he established with Crosby to offer his irrigation classes up-to-date information about the latest equipment, technology and techniques for installing automated irrigation systems.

According to Hume, that entails designing with students in the classroom an irrigation system from start to finish while reviewing industry standards and proper installation techniques. He agrees with Crosby, however, that the best approach for gaining expertise and know-how in irrigation systems is by actually installing one. After Crosby convinced college officials that an automatic irrigation system would mean a greatly improved soccer field that would be more easily maintained and would make more efficient use of water resources, his class had its hands-on project.

Hunter Industries donated 24 I-40 sprinklers and the PSC-600 controller. S.V. Moffett provided the use of a Burkeen pipe puller and trencher and irrigation products at reduced prices, such as pipe fittings, wire, gate valves and solenoid valves. Hume spent two days on the project, and Jeff Crean, Hunter Industries Northeastern regional sales manager, spent a day on the project to offer his expertise in programming the controller and setting the sprinkler heads.

After students completed flow and water-pressure checks from one of the quick-coupling valves of the older network of buried copper pipe and examined the condition of the field for areas needing special attention, they were ready to design their

automated irrigation system. Using AutoCAD and LANDCADD computer software, several students designed what they considered the most adequate automated system for the soccer field and determined the types of products to use.

With their knowledge of hydraulics and engineering from their course, the students selected and sized components and computed anticipated pressure losses through various components of the system, including a 1.5-inch water meter and a reduced-pressure principal backflow preventer, as well as pipes and valves. The completed design was then evaluated by Crosby and the class. Since installation of the system was part of laboratory exercise for the course, the project was completed within a week.

Hands-On Learning

The students participated in all phases of installation: pulling pipe and trenching; laying and solvent-welding PVC pipe; installing and setting sprinkler heads, backflow valves and concrete thrust blocks; wiring valve controls; and wiring and programming the controller. The project also included installing moisture-sensing devices.

Crosby says the system is an excellent model and teaching tool for his future irrigation classes. "It's like a working lab," he adds.



Undergraduate technology students Tom Welch (left) and Rus Myers install a valve manifold on SUNY-Cobleskill's soccer field as part of their class project to design and install an automated irrigation system. Photos by George Crosby.

David Robertson, who recently completed his internship at Lifescapes of Canton, GA, for his bachelor of technology degree, says that working on the college soccer field irrigation

project prepared him for his work with Lifescapes. He reports that the project gave him the opportunity to put into practice his knowledge of the most up-to-date equipment and technology in irrigation systems that he learned about in the class and to have closer contact with industry people whose product knowledge gave him a clearer picture of what he'd face on the job after college. At Lifescapes,



Undergraduate technology student Scott Gray wires a solenoid valve on a lateral line on the automated irrigation system.

Robertson worked on both commercial and residential irrigation systems for office complexes and private residences in the Atlanta, GA, area.

Scott Gray, who also recently completed his internship for his bachelor of technology degree, agreed that the soccer field project prepared him for his work with Irrigation Systems of Maine, a small company based in Yarmouth, ME. "Professor Crosby's class definitely gave me the knowledge for designing an automated irrigation system, and working on Cobleskill's soccer field gave me the practical experience I needed for the work I did in Maine," he relates.

Gray says that he was well prepared for his job designing and installing automated irrigation systems in several athletic fields, including a football field, soccer field, baseball diamond and practice field at the recently built Brunswick High School in Brunswick, ME. He also helped install automated systems in fairways, greens and tees at the Samoset Golf Course in Samoset, ME, in athletic fields at the University

of Maine at Orono and at the private home of novelist Stephen King in Bangor, ME.

Getting to know irrigation industry people from both classroom sessions and working on the project, notes Gray, was equally valuable, especially since he's currently trying to decide whether to work for an established company or start his own. "I think it's good that the industry people come into the classroom," he says. "They know me now, my name, and they call me when they find something that might interest me."

Companies Benefit, Too

Hume admits that working with the students has been a valuable experience for him and his company as well. "Those of us who have been in the industry can offer some approaches to what works and what doesn't," he says. "We can pass on some very productive techniques."

His company, he adds, gains as well from the relationship through recognition when the students graduate and are employed in some phase of the industry. "As a salesman, when I see one of these students on a golf course or as a landscaper, we already have somewhat of a rapport, so it's a little easier to get to know him."

Crean agrees. "If I were a student, I would love to have somebody come in and work with me, somebody who really knows the manufacturing process, somebody who can teach me something from a different perspective," he says.

According to Crean, teaching is the aim of Hunter's Fellowship Program, which provides selected college students majoring in a landscape or turf management program a chance to learn more about the industry by seeing firsthand Hunter's manufacturing process and to attend the annual distributors' meeting and the annual Irrigation Association Exposition as Hunter's guest. "We know we have to reach out and find people who, hopefully, will develop an interest in Hunter Industries and perhaps come to work for Hunter," he adds. "But we also know that someone in the field who is doing irrigation design someday will think about Hunter and their experiences with us." □

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