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Customer Solutions



CALVIN COLLEGE Grand Rapids, Michigan

OVERVIEW

Founded in 1876, Calvin College in Grand Rapids, Michigan, is one of the largest Christian colleges in North America. Its 411-acre main campus includes irrigation of 120 acres of turf, flowers, shrubs, trees and athletic fields. The campus grounds' appearance is important to the administration, faculty, staff and students, and in the early 2000s, the administration agreed an irrigation system upgrade would be beneficial.

CHALLENGES

In 2000, the college irrigation system used 58 separate controllers to irrigate its 140 acres and the grounds crew spent a great deal of time traveling between controllers and troubleshooting issues. Supervisor of Landscape Operations Geoff Van Berkel said, "[we] looked at how big and awkward our system had gotten," and knew we needed a different way of doing things.

THE SOLUTION

Van Berkel researched new irrigation control systems; he consulted with Spartan Distributors Inc. (SDI), the local Toro distributor. SDI evaluated the school's existing irrigation system as well as the size, diverse makeup and varied soil types of the campus. SDI recommended an irrigation approach utilizing the Toro Sentinel® Central Control System. It would be the first Sentinel system used in Michigan, and the SDI team felt it would provide the most efficient management of the college's complex and growing irrigation needs.

The project's irrigation contractor, Kenowa Companies, installed the new control system according to the SDI recommendations for integrating the Sentinel system into the existing irrigation. The use of innovative, efficient irrigation solutions reflects SDI's long-time commitment to green industry in Michigan. SDI worked with Van Berkel and Kenowa Companies to ensure the upgraded system met the college's needs, and the Kenowa team enhanced the project's value with cost-efficient installation. SDI's Bruce Funnell met periodically with Van Berkel on-campus to review project progress, and the college's grounds crew attended SDI classes to become familiar with the Sentinel system.

The Toro Sentinel system's central control functions at the college have expanded steadily. In 2003, the irrigation system consisted of 171 Sentinel-controlled zones and well over 100 non-Sentinel zones. Over the next five years, the college upgraded or installed 300 Sentinel-controlled zones in the system. Today, the Calvin College irrigation system is comprised of 470 Sentinel-controlled zones in 13 locations, and the expansion continues as 81 more zones are being put under the Sentinel system's central control. This irrigation system expansion has been possible because of the Sentinel system's simplicity and versatility.

Customer Type: College or University

Maintained Areas: Campus Landscapes, Athletic Fields, & Off-site Locations the college owns and maintains.

Acres Maintained: 140

Irrigation System Equipment:

- Toro® Sentinel® Central Control System with Davis Instruments Weather Station
- Toro EICON Wireless Output Radio Module
- Irritrol® 450R Series Sprinklers
- Toro 570Z Series Sprinklers
- Toro P220 Series Valves
- Toro TFS Series Flow Sensors

Grounds & Sports Field Equipment:

- Toro Groundsmaster® 4000 Series
- Toro Groundsmaster® 300 Series
- Toro Topdresser 1800 Series
- Toro Workman® MD Series

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RESULTS

Van Berkel uses the Sentinel's reporting capability to monitor operations and troubleshoot any issues at the irrigation system's numerous off-site locations. By using his laptop instead of driving to these sites to manually inspect each zone, labor costs are greatly reduced. "[Calvin College] has so many remote locations now, I need to know that last night it did exactly what it was supposed to do," Van Berkel said.

One example of the Sentinel system's versatility is the college-owned Glen Oaks Apartments complex, which is more than a mile off-campus. The apartment property required irrigation control, but it was not feasible to install a complete satellite controller onsite, nor to run valve wires from the nearest controller. To solve this challenge, SDI configured Michigan's first EICON 12-station Wireless Output Radio Module to run the valves locally, but control them wirelessly from the nearest Sentinel controller. Thus, the Glen Oaks site operates using the functionality of the Sentinel system, and without the cost of a complete controller or the extensive wire runs.

The Toro Sentinel system has provided Calvin College with expandability, versatility and impressive irrigation efficiency. For the past four years, Van Berkel has used the Sentinel system to track college water usage for annual reports to the Michigan Department of Environmental Quality while also utilizing the data to effectively monitor system performance.

As with any college, irrigation at Calvin College needs to occur with minimal disruption of student activities. Six wells are utilized throughout the system, and Sentinel helps optimize the use of these sources to ensure irrigation gets completed within a narrow watering window. Irrigation efficiency is optimized in great part because of the Sentinel system's ability to adjust settings using the ET-based program and the college's weather station software. Once the run time for each zone is adjusted daily, Sentinel's automated scheduler manages start times to maximize utilization of pump capacity and efficiency and thereby minimize the time it takes for all irrigation to complete. Using this technology, Sentinel can help the college save water by irrigation based on evaporation, rainfall and other factors, while still accommodating narrow watering windows.



Along with water savings, the college saves on the labor that would be required to manually calculate and adjust the programming daily. The college saves water and the staff is free for other projects rather than manually analyzing weather and ET factors and adjusting irrigation programming.

As a result, Calvin College is enjoying efficient irrigation that saves water and expenses while nurturing healthy, appealing landscapes that enhance the school's image.

