

University of Rochester



The University of Rochester located in Rochester, New York is a leading private research university established in 1850. The school enrolls approximately 6,304 undergraduates and 4,822 postgraduate students. With nearly 29,000 employees, the university serves as the largest employer in Greater Rochester and sixth largest private employer in New York state.

In May 2013, the school began work with SmartWatt to implement energy system optimization solutions at facilities within the University’s sprawling 158 building campus. To date, SmartWatt has completed 23 lighting and advanced controls projects on campus.

THE CHALLENGE

While historic and beautiful, many of the University’s century-old libraries, lecture halls, and field houses contained poor lighting and controls. Even facilities constructed a few decades ago relied on lighting systems that are considered inefficient and expensive by today’s standards.

- **Maintenance Costs:** The first project SmartWatt initiated was the University’s Wilson Commons student union, which presented its own set of unique challenges. Boasting a towering 80 ft. high ceiling with no easy service access, the building was illuminated using very old halogen spec lamps with lifecycles of a year or less so they required constant maintenance. When it came time to relamp the fixtures, the University was forced to hire an expensive specialty contractor to complete the dangerous job.
- **Energy Costs:** Lighting at Wilson Commons was kept on day and night, providing illumination even when unnecessary. In addition, campus-wide lighting systems had large heat outputs that required increased, artificial cooling measures to achieve a comfortable climate. These inefficiencies led to massive energy costs.
- **Poor Exterior Lighting:** Exterior lighting at outdoor sites was inconsistent making safety and security a concern at night for staff and students.

“Working with [SmartWatt] is always a great experience. The team is professional and has a get-it-done attitude, while understanding the stresses and parameters we have in terms of schedule.”

-Doug Grotke, Project Manager in the Department of Transportation & Parking Management



THE SOLUTION

Beginning with the Wilson Commons project, SmartWatt upgraded lighting systems and facilities across the campus, installing controls and exterior lighting solutions to lower operating expenses and increase illumination outdoors.

- **Interior Lighting Systems:** SmartWatt customized a solution that used long-lasting LED lighting retrofits, which come with a 10-year warranty.
- **Exterior Lighting Systems:** The installation of LED fixtures throughout exterior spaces helped to enhance the lighting quality at night. The lights are more consistent at higher levels and don't degrade, improving reliability.
- **Advanced Lighting Controls:** Advanced wireless lighting controls allow the lighting to be dimmed automatically based on preset schedule or zone occupancy.

THE IMPACT

Safety and energy savings were the key drivers of the energy systems optimization projects completed by the University of Rochester and SmartWatt. The outdoor lighting upgrades received positive feedback from users. The control systems allow for reliable distribution of interior and exterior lighting, especially at night, creating a safer and more secure campus for students, staff, and visitors.

In addition, there has been a dramatic reduction in maintenance and energy costs as LEDs use power efficiently, require minimal service, and yield a lower heat output which saves on cooling costs. Since 2013, the campus has logged an estimated 62% reduction in lighting energy use, and \$323,000 in energy and maintenance savings. The Wilson Commons project realized an impressive ROI of less than three years.

Financial Impact

\$323K / total annual cost savings

Annual energy cost savings: **\$176K**

Annual maintenance cost savings: **\$147K**

Environmental Impact

1,704 tons / CO₂ reduction

By removing this quantity of CO₂ from the atmosphere, these projects will have the same effect on the local environment as:

Saving **173,974 gallons** of gasoline

Planting **1,464 acres** of trees