



LaGuardia Community College deploys campus-wide solutions for sustainability



DARE TO DO MORE

Student Enrollment:
45,694

Institution Type:
2-Year Community College

Institution Size:
1,875,399 gross sq.ft.

Region:
New York City



A Higher Level of Sustainability

LaGuardia Community College (LaGCC) is located in Long Island City, Queens and is committed to diversity, equity, and inclusion — serving students from 150 different countries. The college offers more than 60 majors, certificates, and programs as well as 70 continuing education programs.

LaGCC is proud to be a participant in the New York State Energy Research and Development Authority’s (NYSERDA) REV Campus Challenge and has a robust Sustainability Council comprised of students, faculty, and staff. The mission of the Sustainability Council is to develop and implement initiatives, events, and campus amenities that promote conservation of natural resources, energy efficiency, recycling, and carbon footprint reduction through education and activities both inside and outside the classroom.

Focusing on Energy Efficiency

The college is focusing on reducing their energy and costs by controlling two key cost components: demand and consumption.

The demand charge is significantly higher during ‘peak’ usage, such as when multiple air conditioners turn on at the same time. Therefore, efficient building operations and strategic electric use are required to achieve savings during peak times and avoid grid constraints that affect the larger community. As power use can quickly scale up, an account can exceed its peak demand within minutes and must be reduced immediately to avoid excess costs and potential area brownouts on peak electric demand days. However, building operators are often busy elsewhere when electric loads need to be suddenly “shed.” Although computerized Building Management Systems can control equipment remotely and real-time monitoring systems provide insights into a facility’s load, most buildings still need actual hands-on intervention to successfully manage peak load reductions.



Ken Chong - Building Operations' Assistant Engineer

“Electric demand charges can comprise the largest component of an electric bill. Investment in a demand response project can provide excellent payback by managing peak load automatically.”

*Kenneth Campanelli,
Executive Director of
Facilities Management
& Planning at LaGuardia
Community College*

An Innovative Approach

To overcome the challenge of quickly responding to rapid load increases, the college developed an automated load shedding system that would eliminate the need for operator intervention. The system was envisioned, designed, and created in-house by the Buildings Operations' personnel with assistance from the Sustainable CUNY team. The college utilizes the Building Automation System (BAS) and Real-Time Energy Management dashboard to run and manage daily building operations.

The core of the system is a Load Shedding Agent (LSA) software that runs on the college's network and communicates with both the dashboard and the BAS. The team created alerts in the dashboard that warn the facility operators and managers as power consumption approaches predefined thresholds, and send signals to trigger software scripts that shed the correct amount of electric load.

The LSA eliminates the need for a building operator to manually trigger the controls in the BAS by automatically and safely curtailing power use, with minimal impact on the building's occupants.

A core principle of New York State's clean energy vision is innovation. As a REV Campus Challenge member, the college has demonstrated their commitment to this value by creating a system that builds upon and improves the existing maintenance infrastructure while developing an ingenious solution for a ubiquitous building operations challenge.

Sustainability Actions Taken:

- Installed water refilling stations across campus, reducing more than a half million plastic water bottles
- Installed low flow urinals and efficient faucets to reduce wasted water
- Converted fluorescent light fixtures to LED to help save on electricity consumption
- Installed Occupancy sensors in office, classrooms, and bathrooms
- Upgraded the Energy Management System to save hundreds of kilowatts of electricity
- Installed solar window films to block UV rays, heat, and glare
- Converted 70% of plastic products in cafeteria to biodegradable
- Replaced the 1 million sq. ft. C-Building's facade that improves insulative value/energy consumption
- Converted boilers from oil to gas to reduce operating costs, and CO₂ emissions

Ready to join the challenge? Get started today.

Learn how at nyscrda.ny.gov/REV-Campus-Challenge.