



ANNUAL IMPACT REPORT

CAMPUS SUSTAINABILITY

AY 2022–2023

**Brooklyn
College**

Annual Impact Report on Campus Sustainability

Academic Year 2022–23



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EXECUTIVE SUMMARY

Brooklyn College is committed to building a culture of sustainability across campus. We aim to reduce our environmental impact through engagement, education, and research initiatives. Our efforts continue guided by eight focus areas, including:

Campus Operations
Environmental Justice
Engagement
Carbon Neutrality/Net-0
Carbon Emissions
Waste Minimization
Academics and Research
Smart Operations/Growth
Food and Nutrition

At Brooklyn College, every member of our campus community plays a vital role in shaping a sustainable future. It is a collective journey with broad involvement of the student body in sustainability planning, implementation, policy, and initiatives through the undergraduate student government (USG), student-led clubs and organizations, and campus events through the leadership of the Brooklyn College Campus Sustainability Council and the Office of Sustainability. Students are not just participants; they are primary partners in campus-wide initiatives aimed at reducing our impacts on the environment, whether by eliminating the use of single-use plastics or minimizing greenhouse gas emissions through waste minimization.

Looking Forward

- ✓ We are actively pursuing further energy-saving measures to meet ambitious sustainability goals.
- ✓ We plan to expand our sustainable dining efforts through procurement specifications, programming, and menu planning.
- ✓ We will continue to seek partnership and funding opportunities to support decarbonization and sustainability-related programming.
- ✓ We will continue to align our work with priorities outlined in the College's 2024 Strategic Plan, with a particular emphasis on Campus Culture and Belonging and Campus Infrastructure.

This summary provides a brief overview of Brooklyn College's sustainability efforts. More detailed information can be found in the full report.

2022-2023 ACADEMIC YEAR HIGHLIGHTS



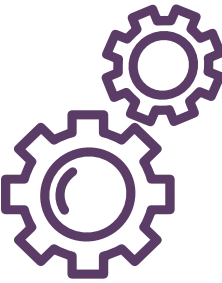
Progress on BuildSmart 2025

Goals: Improved accounting of energy savings by project with 10 of over 85 energy conservation projects completed representing 1 million kWh saved.



Increased Student Engagement:

Over 150 student pledges for a Plastic-Free Ocean campaign, 252 volunteers contributing 454 hours to sustainability initiatives.

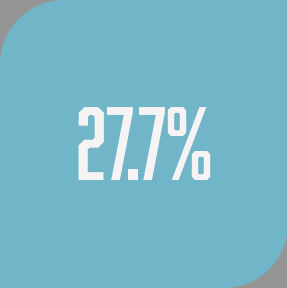
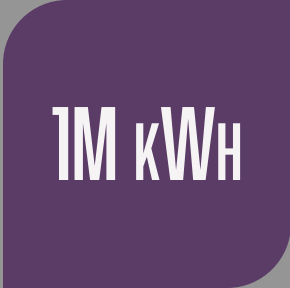


Applied Learning: Campus-based internships are available to students to work with the Sustainability office and the BC Eats garden. Academic programs increasingly collaborate with operational partners to use the campus as a “living lab” for both informal learning activities and rigorous research.



Improved Campus Operations:

Converting to LED lighting in 20% of relamping locations which represents 37 tCO₂, partnered with NYC Parks to establish a Native Plant Bed, piloted a food waste collection program.



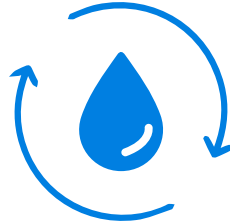
Peer Recognition: STARS Silver Rating received by the Association for the Advancement of Sustainability in Higher Education.



Waste Reduction: Released guidelines for green events, achieved a 27.7% waste diversion rate through increased recycling and composting initiatives.



Reduced Reliance on Bottled Water: Installed an additional 5 water bottle refilling stations, with over 375,000 plastic bottles diverted from landfills.



INTRODUCTION

Brooklyn College's mission on sustainability is to cultivate a culture of sustainability across our entire campus community. The Campus Sustainability Council is tasked with advising the College's administration and implementing various initiatives. We achieve this by promoting awareness, engagement, and commitment to reduce our carbon footprint through campus-based education, research, operations, and community-based collaboration and services. Sustainability planning relies on a broadly cross-function team that actively recognizes the constraints, opportunities, and responsibilities associated with a diverse and complex institution located in one of the most densely populated cities in the United States.

As our mission has evolved, we now also acknowledge the challenges posed by extreme weather events and environmental impacts. Aligned with recent state and local legislation aiming to achieve net-zero emissions by 2050, we embark on this journey with a shared vision of leading the way in sustainable practices.

Our efforts are guided by eight focus areas:

- | | |
|--|-------------------------|
| Campus Operations | Waste Minimization |
| Environmental Justice | Academics and Research |
| Engagement | Smart Operations/Growth |
| Carbon Neutrality/Net-0 Carbon Emissions | Food and Nutrition |

The Campus Sustainability Task Force formed a [campus sustainability plan](#) in 2010 that focused on building sustainability into campus operations and academic programs. Much has been accomplished since then, including the launching of an Urban Sustainability undergraduate program and the hiring of a dedicated full-time Sustainability Coordinator. ■

CAMPUS
OPERATIONS

ENVIRONMENTAL
JUSTICE

ENGAGEMENT

CARBON
NEUTRALITY

CAMPUS
SUSTAINABILITY:



EIGHT AREAS
OF FOCUS

WASTE
MINIMIZATION

ACADEMICS AND
RESEARCH

SMART
OPERATIONS /
GROWTH

FOOD AND
NUTRITION

SUPPORTING STUDENT EXPERIENCES

The focus over the 2022–2023 Academic Year has been on increasing engagement and campus culture around sustainability through collaboration on campus tabling and volunteer/stewardship events. The tabling events provided campus community members with information about new initiatives, including the elimination of single-use plastics through the a “make a wish” for a plastic-free ocean campaign. Thanks to volunteer events to plant native pollinator plants, rake leaves and collect food waste for composting, promote tap over bottled water, sustainability outreach aims to get students involved, creating a sense of belonging and connection that encourage continued engagement.

Most notably, during the Spring 2023 semester, Campus Sustainability, with the assistance of campus partners, spearheaded and established a Native Plant Bed adjacent to the West Quad building and the Tennis Court on campus. This accomplishment was greatly facilitated by the support received from Facilities, Building and Grounds, for allowing us to manage the space. After a few emergency repairs to nearby infrastructure that had disturbed the ornamental planting and soil, the Sustainability Club (STAT) was instrumental during the Fall 2022 semester in assisting with the cleanup of the plant bed, which had been overgrown with bindweed. This presented us with the opportunity to rehabilitate and beautify the space, garnering increased support from students, staff, and faculty alike for the project.

Working with NYC Parks’ Greenbelt Native Plant Center in Staten Island, we were able to acquire 15 varieties and nearly a thousand native plants for the space.

During Earth Month in April, we partnered with the Undergraduate Student Government (USG), Student Activities, Involvement, and Leadership (SAIL) Center, and several other administrative offices on campus, including Human Resources Services, to amend the soil and plant everything over the course of two days.

With over a hundred student volunteers, we transformed the space into a Native Plant Bed for pollinators, promoting biodiversity and providing a continued point of engagement for students and staff who wish to volunteer to help maintain the campus space.

“What I really enjoyed about this event was the diversity of the attendees when it comes to experience level and even college major,” student volunteer Katherine Veligurskiy told The Vanguard in an interview by Gajewski, Paulin, April 2023. “I felt so welcomed as someone who has never gardened before.”



“I felt so welcomed as someone who has never gardened before.”





Visibility on campus around sustainability was also a major focus this last academic year. Campus Sustainability teamed up with the Sustainability Club starting early in the Fall 2022 semester to reach more students and engage them in ways we could make Brooklyn College more sustainable. Through several events and weekly tabling, we collected over 150 pledges from students for a Plastic-Free Ocean campaign to reduce plastic waste on campus and spread awareness of the impact single-use plastics have on our environment. As part of Brooklyn College’s Single-Use Plastic Elimination Reduction (SUPER) campaign, we worked with the Undergraduate Student Government (USG) to collect feedback from the student body on this issue.

During the Spring 2023 semester, Campus Sustainability partnered with the BC Sustainability Club and GrowNYC Flatbush Junction Food Scrap Drop-off site to pilot a satellite food scrap drop-off site on campus twice a week. The pilot was wildly successful (see the Waste Minimization section), allowing us to engage students around food waste and other sustainability-related initiatives on campus. In total, we sponsored and co-sponsored over 50 sustainability events during the 2022–2023 Academic Year, including tabling, weekly food scrap collection, and volunteer landscaping.

Engagement hours, i.e., the number of encounters and hours students and staff have dedicated to sustainability initiatives, is a strong metric for measuring engagement. Over the course of the 2022–2023 Academic Year, there were 16 volunteer events, 252 total volunteers, 454 volunteer hours, and 792 total engagement hours. This shows tremendous growth in the efficacy of outreach to students, staff, and community members alike. ■





IMPROVING CAMPUS OPERATIONS

Brooklyn College has developed a wide variety of initiatives to promote and integrate sustainability into campus practices. From Environmentally Preferable Purchasing specifications to Green Cleaning and Integrated Pest Management programs, the campus seeks to make our operations more sustainable. Our progress is tracked annually to the GreenNY Council through Sustainable CUNY. The Office of Sustainability collaborates actively with the College's Office of Facilities, Planning and Operations, and other college stakeholders to identify

opportunities to make progress and adopt the greenest practices where feasible.

New initiatives in the 2022-2023 Academic Year followed on the heels of the New York State Executive Order 22 to accelerate the environment performance of State agencies. This includes making significant progress on energy conservation projects from accelerated retrofitting with LED lighting, to retrocommissioning of and upgrades to Building Management System (BMS) throughout campus.

FY 22-23 Green Procurement

Batteries	\$3,317
Computers: Desktops, Notebooks, Tablets or Displays	\$867,222
Copy Paper	\$19,591
Floor Coverings: Hard, Resilient, or Carpet	\$11,200
Green Cleaning Products and Services, General Purpose, Disinfectants, Hand Soaps, Floor Maintenance	\$31,385
Integrated Pest/Vegetation Management Services	\$14,198
Janitorial Paper	\$49,618
Paint	\$19,823
Printers and Ink Cartridges	\$26,553
Lighting	\$88,280

**Amount spent on green products, goods and services, demonstrating the College's commitment to reducing its carbon footprint. Custodial Services use 100% all green cleaning products and services and janitorial paper.*

The Campus Sustainability Council is proactive in identifying and pursuing opportunities to further sustainability performance through improved efficiency of existing systems and through future pathways to reduced greenhouse gas emissions.

Following Executive Order 22 directives, the College has made notable progress in achieving key objectives related to waste minimization, with a particular focus on reducing single-use plastics and managing organics. ■





WASTE MINIMIZATION

The 2022–2023 academic year saw a boost in efforts to minimize waste and promote sustainable reuse and recycling. The on-campus battery recycling program was expanded, allowing for alkaline and rechargeable batteries to be dropped off in recycling tubes in most buildings across campus. Students heralded a Food Scrap Collection pilot program, increasing visibility around waste and community composting. Tracking of organic waste was initiated with a 300% increase in landfill diversion rates over the course of FY23 Q4.



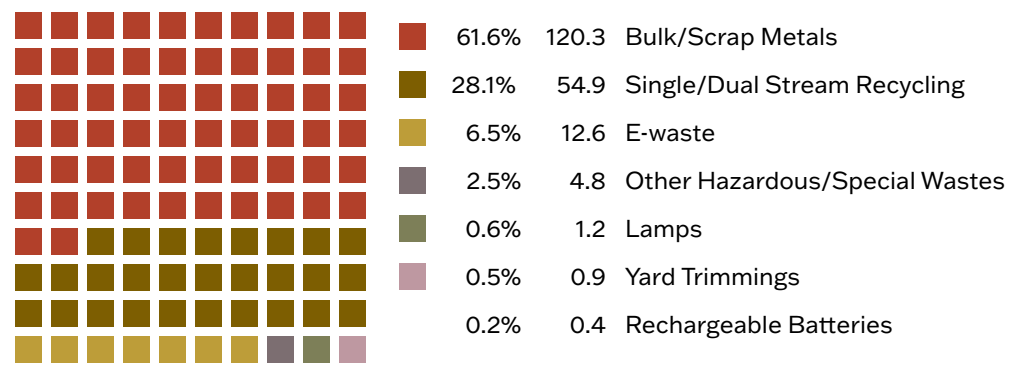
The annual Leaf Raking event, popular with students seeking a break from studying, was another successful approach to promoting waste minimization practices. In total, the campus prevented a whopping 1.605 tons of food and yard waste from landfills, thanks to the efforts of multiple stakeholders including students and Facilities.



Brooklyn College has also undertaken measures to reduce or eliminate the need for bottled water on campus. In Spring 2022, a single-use plastics reduction plan was drafted, identifying the reduction of plastic water bottles as a primary focus. This objective was solidified as a top priority in the plan after surveys of the campus community. The college collaborated with the student government to install a dozen bottle refilling stations, encouraging the use of reusable bottles. Various programs, centers, schools, and student clubs on campus have distributed reusable bottles as part of their annual giveaways.



Waste Diverted from Landfill
195.2 Tons Waste Diverted



Waste Diverted from Landfill Breakdown (In Tons)
Actual or estimated weight of recycling/composting by material

The College is committed to expanding these efforts, intending to replace drinking fountains with bottle-filling stations across campus. By the end of Spring 2023 semester, the student government, in collaboration with the Office of Sustainability, installed an additional 5 water bottle filling stations in the Student Center (SUBO), further reducing the need for bottled water purchases at events held in SUBO. The college aims to encourage tap water as an alternative for all catering events and promote alternatives in procurement and dining services.

Green Events Guidelines issued to the campus prior to the Spring 2023 semester targeted the use of bottled water and other single-use plastic items and promoted more sustainable practices for on-campus events. The guidelines have been adopted by partners, such as Magner Center and USG, as we continue to integrate green purchasing best practices in our procurement processes. Supporting the Green Events Guidelines are twenty-two water bottle-filling stations across campus. Five new stations were added in the Student Center, with all stations featured on the BC Navigator smartphone application map.



Filling stations were further promoted by Student Affairs S.A.I.L. during the annual New Student Activities Fairs with the distribution of reusable water bottles. Altogether, the new stations in SUBO alone saved 6,224 bottles from landfills over their first 6 months in use. In AY 2022-2023 alone, 74,909 water bottles were saved—an equivalent of 6.1 metric tCO₂ equivalent (epa.gov).

The College's commitment to sustainability extends to waste reduction and recycling efforts. Initiatives have been implemented to increase waste diversion rates and minimize landfill contributions. Recycling bins are strategically placed across campus, with clear signage to promote proper waste disposal. Educational campaigns and workshops have been organized to raise awareness about recycling best practices among students, faculty, and staff. These efforts have resulted in a significant increase in recycling rates over the past year. According to our waste data, the College diverted 195.2 tons of waste from the landfill, or 27.7 % diversion rate in FY 2022-2023. Moving forward, the College continues to explore innovative ways to reduce waste generation and promote a culture of sustainability within the campus community. ■

FOOD AND NUTRITION

Dining options on campus were perhaps hit the hardest in the past several years due to unavoidable repair work and the pandemic. As campus life has resurged, the College has reimagined the integration of sustainability and campus nutrition. Dining services contract language prepared for the forthcoming bid cycle built in sustainability requirements from eliminating select single use plastic items to increased plant-forward choices. To maximize dining options adhering to environmentally-friendly practices, food truck vendors selling on campus limit single-use plastic items, like straws, containers, and bags.

Additionally, the Offices of Procurement and Strategic Initiatives leading the search are seeking diverse input from campus partners, including the Office of Sustainability, in future decision-making and implementation of changes.

With growing interest in sustainable food systems among the campus community, the Office of Sustainability was tasked with the reopening of the College's community garden. The Brooklyn College Garden reopened in June 2023 after an extensive spring cleanup carried out, along with a group of community gardeners, students, faculty, and staff volunteers, and NYC H2O.

The garden contains 38 plots and 45 plot holders from the campus and the neighboring community, who have worked together to improve accessibility and programming to allow for student involvement. To make it more accessible, they have cleared walking areas and will continue to do so, adding ten additional beds to utilize the space.

The garden helped to expand food-system related programming on campus during the 2022–2023 academic year. For example, students of Urban Sustainability program, College NOW Community Roots, Midwood High School eco interns and others volunteers in several campus gardens, furthering urban agriculture as a unique feature of our diverse campus. ■





SMART OPERATIONS/GROWTH

Brooklyn College is an anchor institution in the community, recognizing our choices in the built environment have a lasting impact. That's why we are committed to helping New York State meet the BuildSmart 2025 target of achieving 11 trillion BTU of energy savings at state facilities by 2025. We leverage facility planning, capital funding, intergovernmental partnerships, and expert technical assistance to drive our campus' progress on meeting these ambitious energy targets:

- ✓ Over 10 retrocommissioning and small repair projects have been completed, representing nearly 1 million kWh saved.
- ✓ Master planning included an asset inventory, identifying 87 projects associated with over 15 million kWh in potential energy savings. Over 25 projects are currently in the scope of work or design phases.
- ✓ Comprehensive assessment report of all 10 buildings' heating/building management systems along with recommendations to meet NYC's 2020 Energy Conservation Code.

- ✓ Steam submetering initiated to allow targeted analysis of energy use data at the building-level with completion projected for mid-year 2024.
- ✓ Capital project implementation involving over \$20 million aimed at energy master plan-related objectives, including new campus wide control systems which will operate buildings more efficiently.
- ✓ One of 15 state entities partnering with NYPA's Decarbonization Leadership program to build action plans, leading to impactful reductions in greenhouse gas emissions.
- ✓ Transparent, reporting using recognized sustainability frameworks to track and benchmark our emissions reduction progress. The college was awarded a STARS Silver Rating from the Association for the Advancement of Sustainability in Higher Education (AASHE) in 2023.





CAMPUS AS A LIVING LAB AND RESEARCH

Through its faculty, Brooklyn College is a leader in sustainability related research and education. The Center for the Study of Brooklyn, the Urban Soils Institute, Brooklyn Urban Ecology and Environment Program, College NOW Community Roots, and the Science and Resilience Institute at Jamaica Bay are just some of the different research centers and academic programs on campus. The college offers a comprehensive interdisciplinary undergraduate program in urban sustainability, offering three major concentrations in environmental science, economics, and sociology for students to choose from.

The concept of “Campus as a Lab”, features prominently in Physics Professor Micha Tomkiewicz’s 2022–2023 work. Professor Tomkiewicz, along with Economics Professor Yehuda Klein, participated in the University’s Reduction of Single Use Plastics

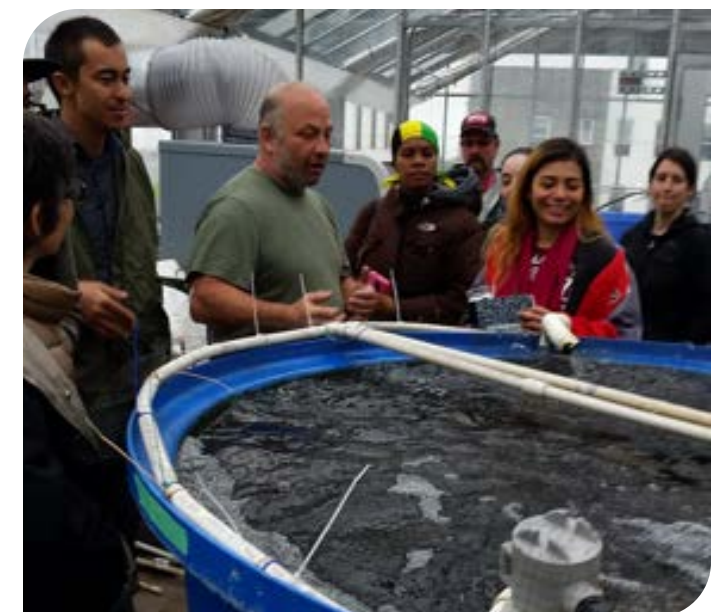
working group which evaluated and made recommendations on alternative products. This along with other topical sustainability policy issues affecting the campus are regularly expounded on in Tomkiewicz’s [Climate Change Fork](#) blog.

Tomkiewicz employs team-based learning in his courses, assigning students to investigate energy use and other operational practices on campus and to evaluate against a broader science and policy backdrop. The coursework provides valuable practical experience to students and highlights how cooperation between administration and faculty can benefit planning for on-campus changes.

A notable development in recent years, the Urban Sustainability program’s faculty and students worked together to establish a teaching garden as part of their SUST 2301 Sustainable Urban Garden and Social Justice, which began in spring of 2022. Faculty from both Urban Sustainability and Health and Nutrition Science programs introduce student to the history and practices of urban gardens, agriculture, and food production in connection to values of sustainability, resilience, social, environmental and climate justice.

The course features hands-on learning about gardening and examining different social and sustainable types of agricultural systems, including the Native American Three Sisters method of cultivation of growing corn, bean (a nitrogen-fixing legume), and squash (a low-lying creeper) together on a mound, in the same area. This garden was aptly named the BC Eats Garden in the fall of 2023, providing a gathering space for students to engage in a grassroots exchange of ideas on social justice and urban sustainability.

Produce grown in the space is regularly given away for free to community members and students. BC Eats welcomes everyone regardless of enrollment in the class.





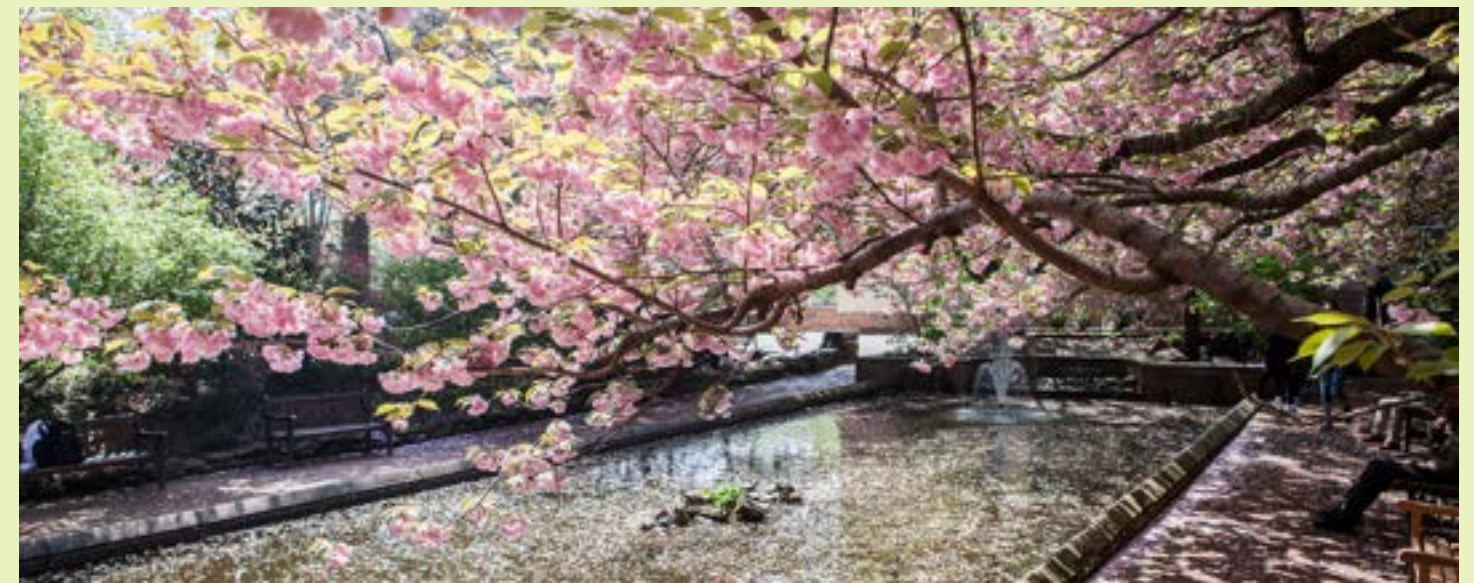
The iconic East Quad Plaza is utilized every year to teach students in the Introduction to Earth and Environmental Sciences class surveying techniques.

However, other academic programs are increasingly incorporating campus-based experiential learning into the classroom. For instance, Health and Nutrition Science students in the Health and Human Ecology course learned about green building concepts before attending a detailed tour of the campus' first LEED Silver certified building in the spring semester.

Urban agriculture and green infrastructure are a major interest among students. Undergraduate in the Urban Sustainability program further expanded the nascent BC Eats vegetable garden as part of the Sustainable Urban Gardens and Social Justice course. Urban Sustainability and revitalizing

of the Brooklyn College Garden, College NOW Community Roots course worked in several campus gardens, learning about urban agriculture and soil health throughout the academic year.

Jennifer Cherrier, Professor in Earth and Environmental Sciences Department, spearheaded the introduction of a novel smart-sensored hybrid technology ([ECOWeir™](#)) on campus. The test bed of drought- and flood-resistant plants was designed by a Brooklyn-based design firm, LOCAL, in consultation with Cherrier and installed by a cadre of volunteer students, staff and faculty in June 2023. The site will be used for interdisciplinary research by both students and faculty to evaluate the efficacy and scalability of this approach to larger watersheds, similar to green infrastructure being installed by the New York City Department of Environmental Protection.





LOOKING AHEAD

Brooklyn College has continued to expand its sustainability initiatives in a wide variety of facets. From community outreach through student involvement to material changes such as improved lighting efficiency and water bottle filling stations, these initiatives have grown in size, scope, and results. Brooklyn College continues to improve and expand sustainability initiatives and foster an environmentally minded campus community.

ACKNOWLEDGMENTS

Contact Information

Carrie Sadovnik

*Director, Office of Environmental Health and
Safety/Sustainability
Co-Chair, Campus Sustainability Council
carrie.sadovnik52@brooklyn.cuny.edu*

Rebecca Boger

*Department Chair and Professor of Earth and
Environmental Sciences and Urban Sustainability
Co-Chair, Campus Sustainability Council
rboger@brooklyn.cuny.edu*

Stalin Espinal

*Sustainability Coordinator
stalin.espinal@brooklyn.cuny.edu*

Office of Sustainability

718.951.5400
Sustainability@brooklyn.cuny.edu