



2022-2023 Sustainability and Climate Action

BARNARD

www.barnard.edu/sustainability-climate-action

REFLECTION & RENEWAL

Early summer is a season of change and renewal and a time to take stock of Barnard's progress in making our campus more sustainable as well as furthering the global movement for equitable climate action. Below are just a few of the many ways students, faculty, and staff contributed in 2022-23.

Faculty participants from nine departments joined a retreat and workshop series to develop interdisciplinary co-taught climate courses and modules, building on the multiyear efforts of the CEP and faculty partners.

Barnard's emerging pathway to net-zero emissions was met with great enthusiasm at the full meeting of the Board of Trustees this March. One major step in our journey is the upcoming renovation of the R&D Science Center (the former Altschul Hall), which will leverage three main sustainability strategies: electrification, adaptive reuse, and biophilic design and healthy material choices.

Barnard continues to be a leader in tackling Scope 3 emissions through our Circular Campus framework. Our Rheaply reuse platform is free and available for all students, faculty, and staff and is currently used by 1,300+ members of our community. This year, Barnard added compost collection points in outdoor locations and in Hewitt Dining Hall, where student teams conducted regular waste audits and educational campaigns. Our 11 edible planters on campus will soon bloom with delicious herbs.

While there is still much to be done, each of these steps represents progress on Barnard's commitment — and responsibility — to meet the challenges of the climate crisis and equip our graduates to do the same.

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Climate Action 2022-2023: By the Numbers

ACADEMICS

COURSES

240+ COURSES IN
OVER 75% OF
DEPARTMENTS
AND PROGRAMS,
2018-23

DEGREES

10
SUSTAINABILITY-
RELATED DEGREES

PEDAGOGICAL SUPPORT

4 CEP WORKSHOPS WITH 84
PARTICIPANTS, 2020-2023

1 SUSTAINABILITY TEACHING
GUIDE

CAMPUS CULTURE & OPERATIONS

PATHWAY TO NET ZERO

1 PRESENTATION TO
THE BOARD

1 COMPREHENSIVE
CAMPUS STUDY FOR
NET-ZERO PLANNING

16% NY STATE
RENEWABLE
HYDROELECTRICITY

74% OF ELECTRICITY
EMISSIONS COVERED BY
RENEWABLE ENERGY
CREDITS (RECS)

CAMPUS-WIDE SURVEY RESULTS

71% OF STUDENTS FEEL
THAT SUSTAINABILITY IS
IMPORTANT TO THEIR
CAREER PATH

81% OF STUDENTS AND
68% OF FACULTY AND
STAFF FEEL EMPOWERED
TO CONTRIBUTE TO
SUSTAINABILITY
INITIATIVES ON CAMPUS

CIRCULAR CAMPUS

72 HOURS OF PEER
WASTE-SORTING
EDUCATION

1 FURNITURE
GIVEAWAY EVENT

970+ GREEN SALE
SHOPPERS

24,781 LBS. DIVERTED
AT GIVE AND GO
GREEN

FINANCE & GOVERNANCE

3 GRANTS (CU
CLIMATE SCHOOL,
NYSAR3, NYPA)

1 CAMPUS
CONVERSATION

1 YEAR OF
WORKDAY
SPENDING DATA

6 SENIOR STAFF
ON THE
SUSTAINABILITY
STEERING
COMMITTEE

ACADEMICS

Expanding and enriching our climate-related academic offerings is a cornerstone of Barnard's sustainability strategy. Our vision, as articulated in the 2019 Climate Action Vision, is that:

1. All students graduating from Barnard engage with climate and sustainability from multiple perspectives in coursework and research across the curriculum.
2. Barnard's interdisciplinary approach to climate and sustainability supports innovative research, fosters civic engagement, and builds practical solutions.

To make this vision a reality, we are building on the longtime leadership of the Environmental Sciences Department and creating more pathways for students into climate topics, such as the recently established Political Ecology track in Anthropology and a new minor in Environmental Humanities, launched by the Consortium for Critical Interdisciplinary Studies (CCIS). These initiatives, and the other eight tracks, majors, and concentrations, answer student and faculty calls for more opportunities to engage with climate issues from multiple perspectives.

Barnard's efforts, since 2017, to count sustainability-related courses have helped fuel an ongoing project, in collaboration with the Columbia Climate School and the University Registrar, to create a more automated system for flagging and counting these courses on both sides of the street.

Finally, the Foundations Review Committee is considering whether to add Climate & Sustainability to Barnard's general education requirements.

**SUSTAINABILITY-RELATED AND
SUSTAINABILITY-FOCUSED COURSES
OFFERED, 2022-2023**

42

PEDAGOGY SUPPORT AND FACULTY DEVELOPMENT



In 2022-23, the Center for Engaged Pedagogy and Barnard Sustainability and Climate Action collaborated on a fall faculty retreat and spring pedagogy workshop. This series focused on co-teaching, with an emphasis on potential first-year seminars, but was open for faculty working on courses across the curriculum.

Faculty collaborated on new modules and courses, including a course on “The Desert” by Nathan Gorelick (English and FYE) and Jordan Balaban (Biology); a design and translation module created by Sandra Goldmark (Theatre), Laurie Postlewate (French and FYE), and Rebecca Naegele (Design Center); and a module with learning goals, assessment criteria, and library engagement strategies for any first-year seminar or writing class that engages with the discourse surrounding the climate crisis, by Almudena Marín Cobos (Spanish and Latin American Cultures), Vani Natarajan (Library), and Michael Shelichach (English and FYE).

This effort was funded by the Provost’s Office and builds on four workshops held in previous years. The working group that has developed this multiyear series was honored this spring with the Linda A. Bell Award for Collaborative Creativity and Excellence in Teaching, and the team’s work was presented at a 2023 Climate Teaching Symposium at MIT.

18
FACULTY IN
9
DEPARTMENTS
IN THE
2022-23
CLIMATE
CO-TEACHING
RETREAT AND
WORKSHOP

COURSE HIGHLIGHTS

Here are just a few examples of how Barnard faculty teach climate and sustainability-related topics in a wide range of disciplines.



Environmental Science: Bermuda, Case Studies

Martin Stute & Terryanne Maenza-Gmelch

Explore the local flora, fauna, geology and hydrology of various habitats, including a spring break field trip to Bermuda.



Comparative Literature: Trees of Knowledge

Erk Grimm

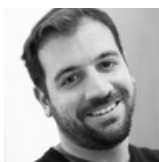
An introduction to the new field of “ecocriticism” and literary responses to ecological concerns and transformations of natural habitat.



Economics: Environmental & Natural Resource Economics

Belinda Archibong

What are the links between economic behavior and environmental quality?



History: Water Histories

Angelo Cagliotti

How did water shape human and environmental histories around the globe?



First-Year Seminar: Hot Stuff, Volcanoes

Sedelia Rodriguez

Explore the science behind volcanoes, their impact on the environment and societies, as well as our enduring fascination with them.



RESEARCH HIGHLIGHT:

Elizabeth Cook, Assistant Professor of Environmental Science, received the Early Career Faculty Impact Fellowship from Columbia World Projects for her work on future urban sustainability.

SUMMER FOOD INSTITUTE

In summer 2022, Barnard Sustainability launched a pilot Summer Food Institute, with six field trips, speaker events, and activities. In 2023, the program grew to include an undergraduate summer course and Pre-College Program.

Students gain knowledge and hands-on experience in agriculture and soil health; human health and nutrition; justice and equity; and food systems and climate change.

Led by 2022 World Food Prize winner Cynthia Rosenzweig and food justice and nutrition expert Natalie Greaves-Peters, the undergraduate course will provide an in-depth approach to these topics with a unifying theme of policy. Field trips include visits to Stone Barns, Bruckner-Mott Haven Community Garden, Governor's Island, and more.

Every two weeks, students come together to cook and share a meal inspired by the topics they have studied, led by Carolina Saavedra, Community Education Manager for Stone Barns and chef at La Morada restaurant.

The Columbia Climate School and Stone Barns Center for Food and Agriculture are key partners in the course and programming.



Dr. Cynthia Rosenzweig,
NASA-GISS



Natalie Greaves-Peters,
MS, RDN

BARNARD UNDERGRADUATE SUMMER COURSE

**Food Journeys in the New York
Metropolitan Region:
Towards Sustainable Farms,
Healthy Communities, and Just
Policies**

BARNARD PRE-COLLEGE PROGRAM

**Sustainable Food and the City
10-day program**

**Instructors:
Leslie Raucher, Jazmine Garcia**

 **COLUMBIA CLIMATE SCHOOL**
Climate, Earth, and Society



**STONE BARNS CENTER
FOR FOOD & AGRICULTURE**

CAMPUS CULTURE & OPERATIONS

Barnard students explore climate and sustainability in disciplines across the curriculum; similarly, the College takes a 360-degree approach to tackling our own emissions and impact.

Our emerging plan for net-zero emissions addresses all three scopes, including decarbonizing our buildings, procuring renewable energy, and expanding on our innovative “Circular Campus” approach to consumption and Scope 3 emissions.

The College committed in 2019 to defining a timeline for net-zero emissions. Since then, we have worked with Energy Strategies to define a step-by-step plan to decarbonize our buildings, procure renewable energy, and measure and manage emissions from consumption and travel. Barnard’s innovative Scope 3 emissions calculator is currently being adapted for Columbia University and allows us to track and target indirect consumption-based emissions using circular economy strategies.

This work has been supported by funding from NYSERDA, ReCharge NY, NYSAR, and the Columbia Climate School.

SCOPE 1

Direct greenhouse gas (GHG) emissions that occur from sources that are controlled or owned by an organization – for example, burning fuel for heating or cooling

SCOPE 2

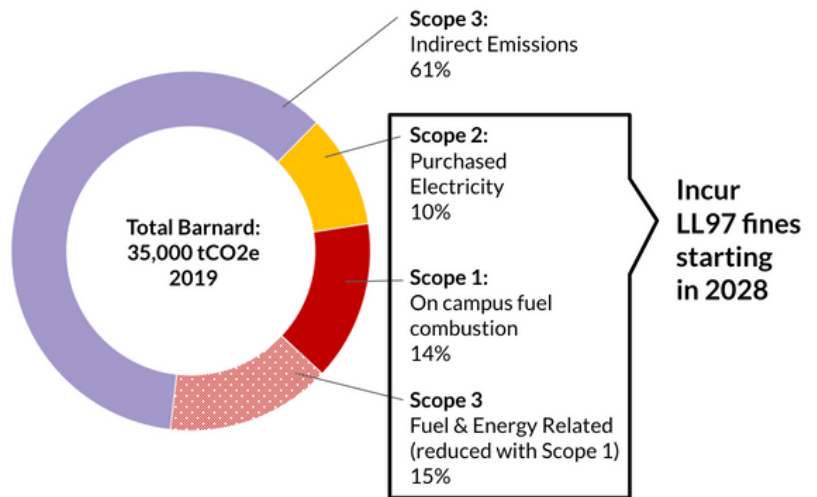
Indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling – for example, electricity for lights and computers

SCOPE 3

Results of activities from assets not owned or controlled by the reporting organization but that the organization indirectly impacts in its value chain: travel, purchased goods, food, and waste

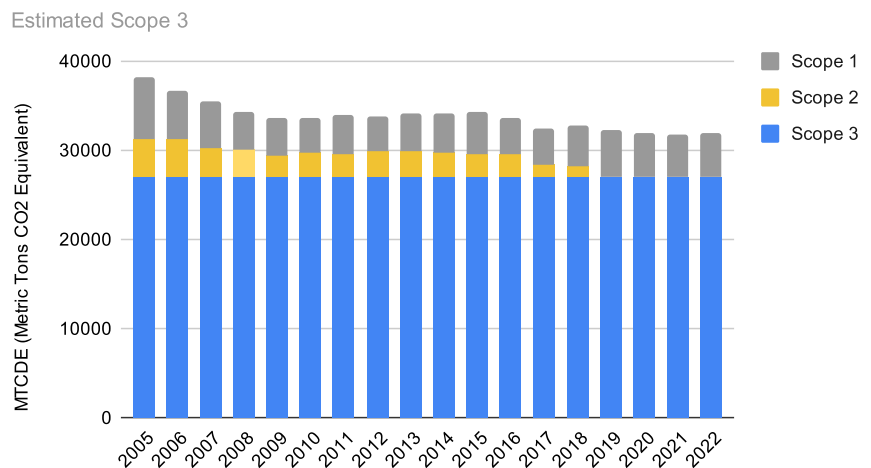
PATHWAY TO NET ZERO: BARNARD'S EMISSIONS BASELINE ACROSS ALL THREE SCOPES

One key step in planning for net zero has been to gain a clear understanding of our emissions; Barnard has taken a comprehensive approach, especially in terms of assessing our Scope 3 emissions, which have historically been undercounted by many organizations.



Barnard and Energy Strategies developed a unique calculator that indicates that our indirect, consumption-based emissions (Scope 3) are as much as 61% of our total. This baseline informs the emissions reduction strategies outlined in the following pages.

Barnard GHG Emissions 2005 - 2022



Emissions for this year totaled 31,955.00 MTCDE.

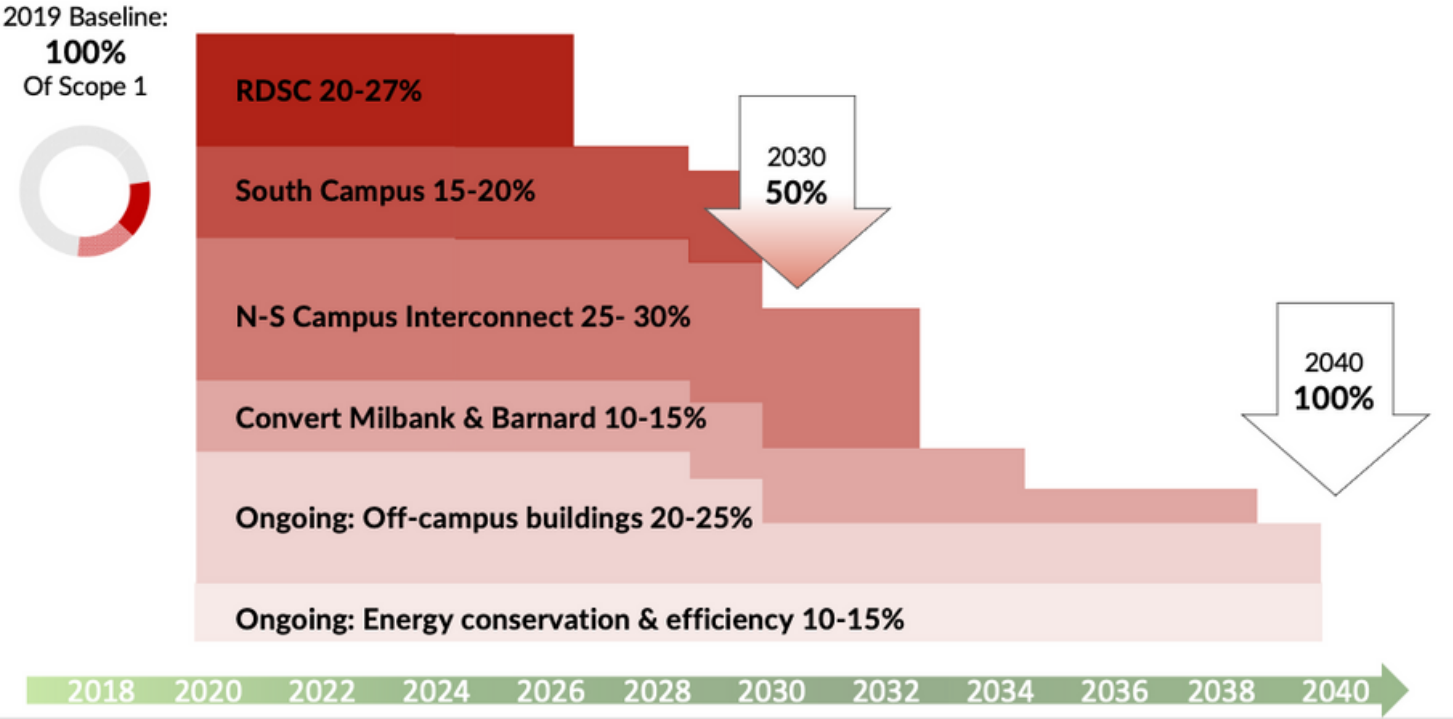
This is in line with emissions from the past few years. Renewable energy credits (RECs) produced by wind were purchased to cover 100% of our electricity use. Upgrades to building systems, implementing sustainable purchasing guidelines, and purchasing offsets will allow the downward trend in emissions from 2005 levels to continue at a meaningful level.

PATHWAY TO NET ZERO: DECARBONIZING OUR BUILDINGS (SCOPE 1 EMISSIONS)

As Barnard works to reduce our reliance on fossil fuels in our own buildings, we have an important opportunity to align capital planning with decarbonization strategies. As deferred maintenance and renewal projects come online, we can electrify our heating and cooling and reduce emissions dramatically.

This type of project not only opens up funding opportunities for the College, it can also serve as a model for decarbonization of existing buildings – a critical challenge for all urban campuses.

The first step in this process is the renovation of the R&D Science Center. Since the building currently serves a significant segment of the north end of the campus with a natural gas boiler, this all-electric renovation will reduce campus-wide Scope 1 emissions by as much as 27%. Subsequent projects have been identified, with a proposed target of net zero by 2040.

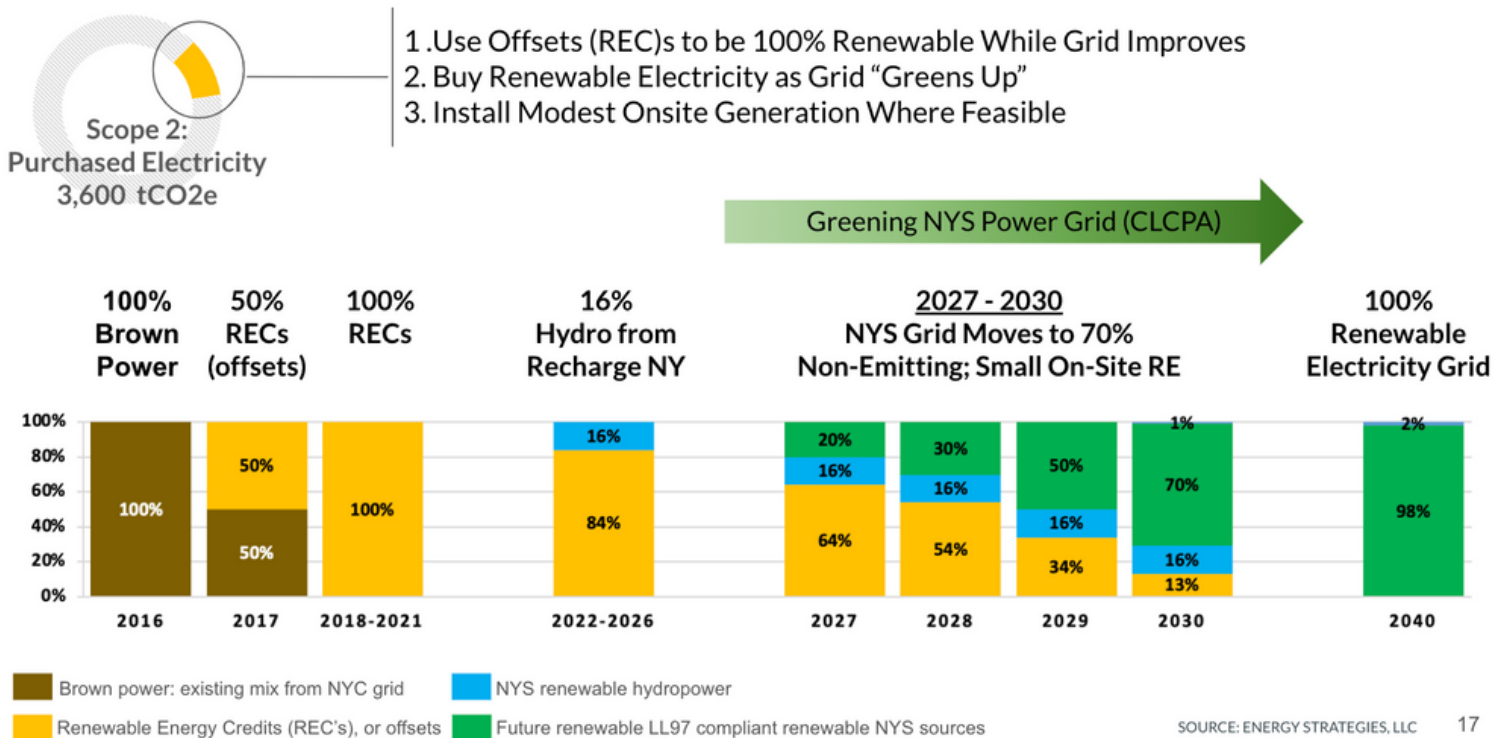


PATHWAY TO NET ZERO: PROCURING RENEWABLE ENERGY (SCOPE 2 EMISSIONS)

As with all New York campuses and buildings, an electrification strategy relies on the “greening” of the New York region and grid. Barnard must continue to identify opportunities for renewable energy procurement as they come online.

Our progress to date, in a limited market, is encouraging. Since 2017, we have used wind renewable energy credits, or RECs, to offset our purchased electricity. In 2022, we were awarded a contract with Recharge NY for local renewable hydropower, which now accounts for 16% of our procurement – and saved the College \$45,000 per year through 2029.

Next steps in this space, as for all New York energy customers, are uncertain. But Barnard can and will continue to find opportunities for renewable energy procurement, in collaboration with our local neighbors, while also pursuing any feasible on-site generation.



PATHWAY TO NET ZERO: CIRCULAR CAMPUS (SCOPE 3 EMISSIONS)

Barnard’s leadership in measuring indirect, consumption-based emissions (Scope 3) demands an equally innovative strategy to address them. Barnard is leveraging circular economy principles to build a Circular Campus.

Circular Campus is a holistic, systems-based framework designed to reduce emissions, waste, and costs, transform consumption patterns on campus, increase access and affordability for students, and support the transition to a just, sustainable economy.

The framework encompasses five key areas: design, construction, and deconstruction; green spaces; reuse and sustainable purchasing; waste; and food and dining.

Circularity is nothing new – it’s an intuitive, ancient strategy practiced by communities around the world. Circularity is also nature’s default, in which waste from one system is always fuel for another. Our job is to see it, name it, and make it the default.



CIRCULAR CAMPUS: DESIGN, CONSTRUCTION, AND DECONSTRUCTION

The design for the R&D Science Center follows three main sustainability strategies: electrification, adaptive reuse, and biophilic design.

The decision to renovate and repair Altschul Hall instead of demolishing it aligns with Barnard’s Circular Campus strategy. By repurposing the existing structure, the College minimizes the amount of construction waste and reduces the carbon footprint by at least 50%. Careful choices for new materials and biophilic design, including a green wall in the ground floor atrium, will support health and well-being. And last but certainly not least, electrification of heating and cooling will reduce Scope 1 emissions by 27% campus-wide.

The renovated RDSC will retain 80% of the structural material of the original building. A NYSAR grant for the summer of 2023 will help maximize reuse, down to the sharing and rehomeing of furnishings and equipment.



54%

REDUCTION IN EMBODIED CARBON
(FROM NEW CONSTRUCTION)

27%

REDUCTION IN SCOPE 1 EMISSIONS
CAMPUS-WIDE VIA ELECTRIFICATION

CIRCULAR CAMPUS: REUSE AND SUSTAINABLE PURCHASING

Internal reuse is a cornerstone of Barnard's Circular Campus framework; numerous initiatives on campus are designed to reduce waste and consumption-based emissions while supporting affordability and access.

Give & Go Green 2023 is an annual program on campus for the collection of donations of gently used items from students at the end of the year. These items are cleaned and sold to first-year and transfer students in the fall during the Green Sale. Items that are not kept are donated to our partners, including Wearable Collections, College Boxes, Renewable Recycling, Better World Books, and Goodwill. Access Barnard purchased 125 dorm-essential bags to distribute in Fall 2023 from Grad Bag, an organization that transforms lightly used dorm-room essentials for redistribution to incoming students in need. This year, Give & Go Green reclaimed **24,781 lbs.** of dorm essentials, mini-fridges, clothing, textbooks, and much more.

Rheaply, our internal reuse platform, is free for all students, staff, and faculty to exchange, rent, and sell gently used items.

In collaboration with SGA's Earth Day Festival, Barnard Sustainability held the annual Re-Bear Clothing Boutique with clothing sourced secondhand from students; the event also included a waste-sorting game.



Finally, kitchen kit/party pack rentals provide students with access to affordable kitchen essentials while reducing the amount of waste disposed of by students at the end of the year.

125

GRAD BAGS RESERVED FOR ACCESS
BARNARD STUDENTS IN FALL 2023

CIRCULAR CAMPUS: WASTE

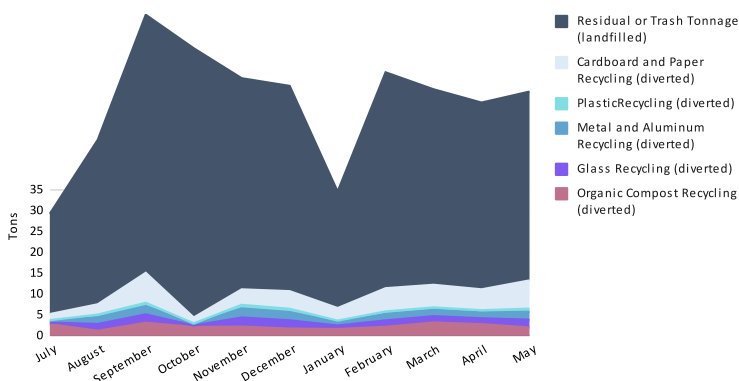
Barnard first introduced food scrap collection in 2017. The program was severely affected by the pandemic and by the transition to a new dining provider. Nonetheless, 2022-23 represented a strong step forward.

Compost bins were added in outdoor locations, and signs were refreshed. Student teams conducted 72 hours of waste-sorting education in our dining halls and around campus to help our community learn how, what, and why to compost and recycle properly.

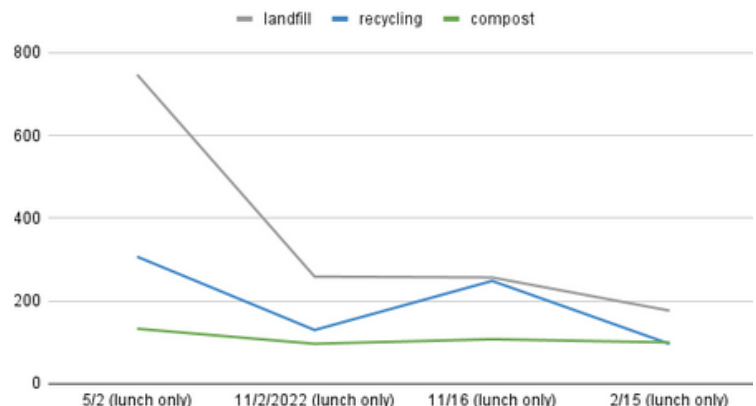
Waste audits were conducted twice a semester in each dining hall starting in May 2022, with a total of five waste audits from Spring 2022 to 2023. The waste audit data below demonstrates that compost collection and education campaigns were significant; however, the most important waste reduction factor was the switch back to reusable dishes and utensils, instead of the disposables that had been in place since the pandemic. This provides an important cue for our strategies for other dining locations.

Overall, total waste disposed (landfilled and diverted) was consistent with FY22 tonnage; however, total waste sent to landfill increased by 2.6% while total waste diverted decreased by 27.1%. The average recycling rate declined from 24% in FY22 to 17.9% in FY23.

Total Waste
July 2022 - May 2023



Hewitt Lunch Waste Audits: 5/2/22, 11/2/22, 11/16/22, & 2/15/22



CIRCULAR CAMPUS: FOOD AND DINING

Barnard is collaborating with Chartwells to define clear objectives for supporting sustainable food systems on campus and minimizing the impacts of our dining service operations. Key areas of focus include sustainable food sourcing, food service, and food waste.

Progress this year included returning to reusable service ware in Hewitt post-pandemic, introducing “front of house” composting in Hewitt, tracking waste data, and encouraging more local and sustainable foods.

Moving forward, one key goal is to eliminate disposable single-use plastics across campus in our dining locations. One of the initiatives to reach that goal is to institute a reusable container program to replace the disposable containers available at the dining locations on campus.

Chartwells has supported sustainable foods on campus and provides data on some sourcing policies, as shown below. An important next step will be to partner on establishing clear, shared targets that also encompass food service and food waste.



92%

ECO/FAIR TRADE
CERTIFIED
COFFEE

91%

SEAFOOD FROM
SUSTAINABLE
SOURCES (SFW
CRITERIA)

91%

CERTIFIED
HUMANE
CAGE-FREE
EGGS

CIRCULAR CAMPUS: GROUNDS



A Barnard Sustainability Climate Action Grant was awarded to the Cathedral Gardens rooftop garden to expand growing space and improve garden beds.

Nora Gmelch '23 and Silvia Giordano '25 designed and planted two pilot sections of native garden near Futter Field.



We planted more natives in Morningside Park, removed invasive species, and started an edible garden.

We installed 11 edible planters around campus. A compost tumbler was built by Garden Club students on the Altschul Hall patio.



ENVIRONMENTAL JUSTICE AND COMMUNITY RESILIENCE

Barnard's sustainability strategies are based on the knowledge that climate solutions must be built with and must benefit communities most impacted by climate change. For us, circularity is as much about building community connections and resilience here in New York as it is about reducing waste and emissions. Our commitment to environmental justice and community resilience manifests in many ways.

In 2023, Barnard partnered with the Office of Manhattan Borough President Mark Levine to honor 20-plus local New York "Circularity Champions": schoolteachers, artists, community activists, and other leaders who are building a circular, resilient, and equitable New York.

We are making our Rheaply reuse platform available, for free, to local community organizations, including International House, Riverside Church, the Interchurch Center, Union Theological, Teachers College, Morningside Area Alliance, and St. John the Divine.

And we are teaching about the intersections of race, gender, and climate in multiple disciplines, including the Environmental Humanities minor in CCIS, the Political Ecology track in Anthropology, Environmental Science, and Art History.



FINANCE & GOVERNANCE

In an effort to build a system of distributed leadership and distributed accountability for sustainability goals, Barnard worked to develop governance structures to enable climate-smart decisionmaking at all levels. In March, our proposed Pathway to Net Zero was presented to the full Board of Trustees, and a Sustainability Steering Committee comprising senior staff members was established. The steering committee will help shape and elevate the work of the existing Climate Action Committee.

We have successfully collected a full fiscal year of spending data through our integration into Workday. Data is now available for travel, fuel usage, consumable goods, and red meat consumption, enabling us to analyze our consumption patterns to reduce our scope 3 emissions. In addition, we have created a draft sustainable purchasing guide that will embed sustainability criteria into our procurement processes, fostering responsible supply chain practices and encouraging the adoption of sustainable products and services. The draft will be refined by a diverse working group in the fall.

We held our third Campus Conversation this spring to discuss:

- Should Climate & Sustainability be included in the Foundations curriculum?
- How can each department and student club work toward a just, equitable, and circular campus?
- Can Barnard reach net-zero emissions by 2040?

Our second submission to AASHE STARS will be ready in the early fall. Barnard aims to elevate our rank from silver to gold, demonstrating the College's growing commitment to sustainability and environmental stewardship over the past three years. Based on our last submission, Barnard has been ranked in the top 10 for "Well-Being & Work" in AASHE's Sustainable Campus Index.

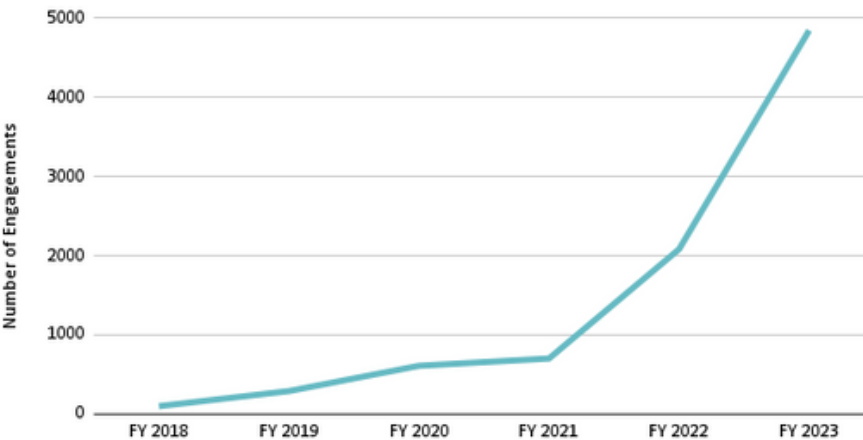
ENGAGEMENT

Over the past year, our organization has experienced exponential growth in community engagement, fostering meaningful connections and expanding our reach to various stakeholders. In 2023, we achieved a staggering total of 4,842 interactions with students, faculty, staff, alums, and external community members. Co-creating events with departments we have not worked with before, being allotted mandatory NSOP session time, tracking Green Sale shoppers, and the addition of Jazmine



Garcia, Sustainability Coordinator, to the team are the largest drivers. It is noteworthy to mention that this number marks a substantial progression from the 100 touch points recorded in 2018, exemplifying the remarkable growth we have achieved. Moreover, growth trajectory continued even from the previous year, with the number of events hosted increasing from 30 in 2022 to an impressive 44 in 2023.

Community Engagement
FY 2018 - FY 2023



4743%

INCREASE IN
ENGAGEMENT
SINCE 2018

SUSTAINABILITY LEADERSHIP 2022-23



Sandra Goldmark
Associate Professor of Professional Practice &
Director of Campus Sustainability and Climate Action, Barnard College
& Senior Assistant Dean for Interdisciplinary Engagement,
Columbia Climate School



Leslie Raucher
Associate Director of Campus Sustainability and Climate Action,
Co-chair, Barnard Staff Advisory Council



Jazmine Garcia
Food Sustainability Coordinator, Campus Sustainability and Climate Action

STEERING COMMITTEE

Emma Wolfe, AVP and Sr. Advisor to the President for External Relations and Leadership Development
Laura O'Connell, Associate Vice President for Facilities and Capital Projects
Leslie Grinage, Vice President for Campus Life & Student Experience and Dean of the College
Linda Bell, Provost, Dean of the Faculty
Sandra Goldmark, Associate Professor of Professional Practice in Theatre, Director of Campus Sustainability and Climate Action
Sarah Gillman, Senior Vice President for Strategic Finance & Operations

CLIMATE ACTION COMMITTEE

Angelo Caglioti, Assistant Professor of History
Deby Finkelstein, Director of Auxiliary Services
Delaney Michaelson '24, Student Government VP of Student Services
Jazmine Garcia, Sustainability Coordinator, Campus Sustainability and Climate Action
Julian Jones, Project Manager, Capital Projects
Katelyn Dutton '14, Director of Family Engagement & Special Assistant to the President
Kathryn Gerlach, Director of Media Relations
Leslie Raucher, Associate Director, Campus Sustainability and Climate Action
Lino Machado, Director of Custodial Services
María S. Rivera Maulucci, Professor of Education
Mary Joan Murphy, Executive Director of Student Health and Wellness Programs
Mary Rocco, Director, Engaged Scholarship and Community Engagement
Nechama Stein '25, Student Government Representative for Sustainable Initiatives
Sandra Goldmark, Chair, Associate Professor of Professional Practice in Theatre, Director of Campus Sustainability and Climate Action
Severin Fowles, Professor of Anthropology
Terryanne Maenza-Gmelch, Senior Lecturer in Environmental Science