

B R O W N U N I V E R S I T Y

**Annual
Sustainability
Report
FY19**





Mission

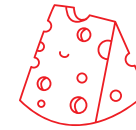
In order to develop sustainable and equitable patterns of global and local resource use, Brown University will minimize its energy use, reduce negative environmental impacts and promote environmental stewardship. Brown will use the opportunities created by these actions to further its educational, research and service missions.



Values

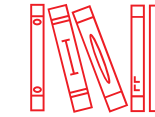
The Office of Sustainability is committed to achieving sustained energy and environmental performance. This requires an ongoing, integrated and systematic approach to resource management including assessing performance, setting goals, creating an action plan and tracking and communicating results.

Quick Facts FY19



11.5%

of Brown Dining Services purchases were certified humane.



1,000

pounds of books were donated to the Million Book Project during the Clean Break program.



33%

of material was diverted from the landfill through recycling, donations, composting and other means.



\$67,500

of summer funding provided to undergraduate students in IBES for internships or research.



334,077

RIPTA trips were taken by Brown students, staff and faculty.



29.7%

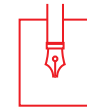
greenhouse gas reduction from Brown's 2007 baseline.



76

trees were planted on Brown's campus.

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Executive Summary



Fiscal Year 2019 was a landmark year for sustainability at Brown. In 2017, President Christina H. Paxson formed two committees to explore ways Brown could directly lower its greenhouse gas (GHG) emissions: the Transition to Renewable Sources for Electricity Committee and the Longer-Term Sustainability Study Committee. In FY19 the committees concluded work resulting in an exciting announcement in February 2019 when the Corporation of Brown University approved an aggressive goal to reduce campus greenhouse gas emissions by 75 percent by 2025 and to achieve net-zero no later than 2040.

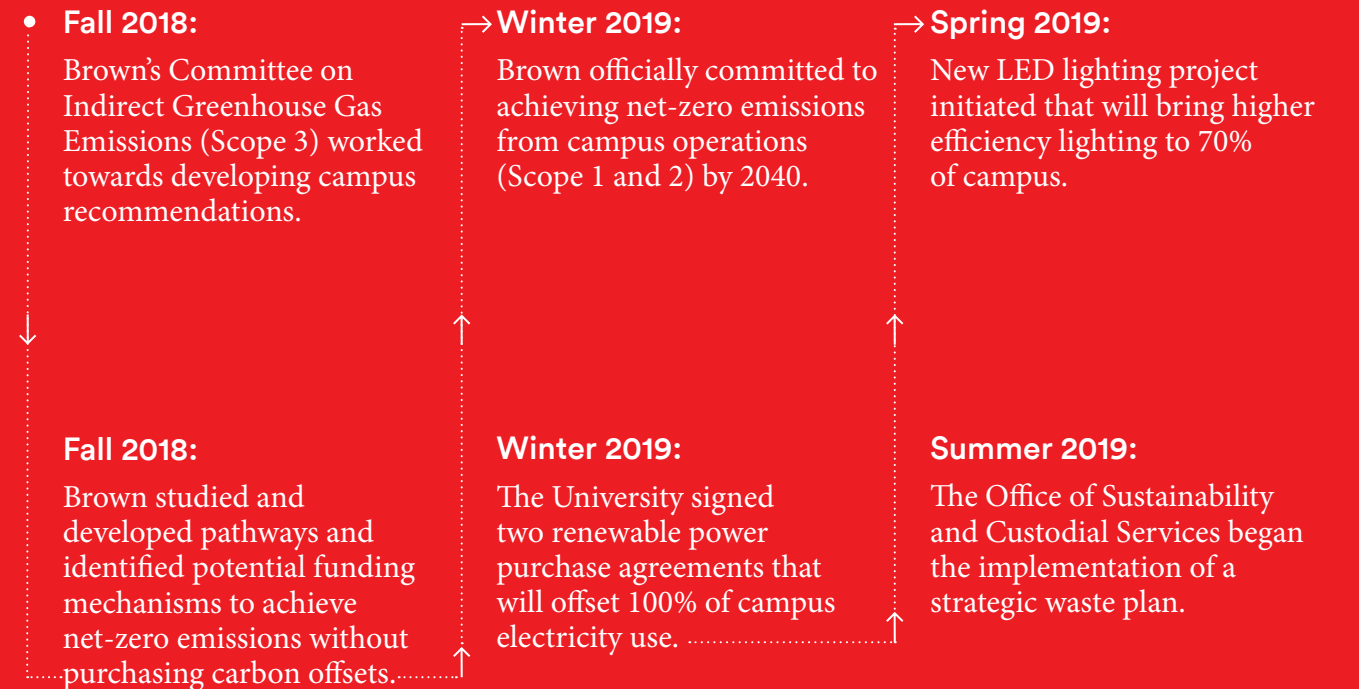
The work of the committees, which led to the adoption of the new emissions net-zero goals, was a phased plan that reflects the technical and financial realities of global energy markets, while also ensuring the flexibility demanded to respond to changes in technology and energy prices over the next two decades. One of the first significant steps toward this goal was accomplished in FY19 with the signing of two renewable electricity power purchase agreements, one wind and one solar, that will offset 100% of Brown's on-campus electricity use once in operation.

Progress continued in FY19 on the development of Brown's first University Sustainability Strategic Plan. This plan will define the University's sustainability principles with a clear path to embedding the principles within University operations and academics and will provide a foundation by which to prioritize our actions and resources.

We hope you enjoy the following report and encourage you to contact our office at sustainability@brown.edu with any questions or comments.

Jessica Berry
Director, Office of Sustainability
Facilities Management

FY19 Milestones





Educating Our Future Leaders

Daniel Traver working with the Climate Action League in the Brown Design Workshop



Brown continues to offer a variety of educational opportunities that focus on sustainability.

Institute at Brown for Environment and Society

The Institute at Brown for Environment and Society (IBES) supports research to understand the interaction between natural, human and social systems. Teaching programs prepare future leaders to envision and build a just and sustainable world. IBES cultivates strong research in five disciplinary areas: conservation science, land change science, climate science, environmental health, and institutions and human behavior.

Climate and Development Lab

The Climate and Development Lab (CDL), founded in 2010 by Ittleson Professor of Environmental Studies and Sociology J. Timmons Roberts, David Ciplet and Guy Edwards, is a thinktank based at IBES. The lab produces timely, accessible and influential research that informs a more just and effective climate change policy. The CDL provides students with learning opportunities to effectively shape policy and explore the intersections between climate change, development and global governance.

This year, the CDL focused on the climate conversation and actions in the United States rather than abroad. The lab notes that as the United States is the heaviest emitter of greenhouse gases in the world, local efforts are currently what matters most.

The Voss Undergraduate Research Fellowship

Six promising environmentally focused rising seniors are selected each year as Voss Environmental Fellows. Fellows are awarded funding to pursue their research over the summer between junior and senior year. Throughout their senior year, fellows meet with the assistant provost for sustainability for professional development. Fellows get training in public communication, scientific writing, persuasive argument and other skills critical to success in the sciences that are often not explicitly addressed in science-based concentrations. Student projects included optimizing sand dune restoration strategies, leveraging genetic data for endangered species protection and developing computer vision algorithms to identify the impacts of particulates on lung tissue.

Possibly

In 2017, a donation to IBES allowed the creation of a Program For Environmental and Civic Engagement (PECE). Led by Assistant Provost for Sustainability and Professor of Ecology and Evolutionary Biology Stephen Porder, the goal of the PECE program is to engage Brown students in public conversations about sustainability. One product of this grant is a new radio/podcast — Possibly — broadcast every week on Rhode Island’s public radio station. The show’s reporters are all Brown undergraduates. Porder and producer Megan Hall provide guidance to student reporters who interview listeners about their submitted questions. Recent shows have tackled the life cycle emissions of hybrid cars, which type of milk has the lowest greenhouse footprint and whether planting trees can solve climate change.

Academic Highlights

- Ten environmental studies and science courses were offered during the 2018-19 academic year. Examples included “Transcending Transportation Impacts,” taught by Senior Lecturer in Environment and Society Kurt Teichert, and “Animals and Plants in Chinese History,” taught by Assistant Professor of History and Environment and Society Brian Lander.
- Seventeen undergraduates received funding for summer 2019 research: three through the IBES Environmental Summer Research and Internship Award, eight through the IBES Summer Internship Program with community partners and six through the Voss Undergraduate Research Fellowship.
- J. Timmons Roberts co-authored “The Paris Framework for Climate Change Capacity Building” with contributions from Dr. Stacy-Ann Robinson, an IBES postdoctoral research associate. The book “presents a framework on how to build effective and sustainable capacity systems to meaningfully tackle this long-term problem.”
- IBES research associates and faculty are conducting research in Uummannaq, a small town in northwest Greenland, with remote sensing techniques. Their focus is to understand how fjord ice is changing and how this change is affecting local populations.

ENVIRONMENTAL STUDIES TRACKS



Air, Climate and Energy



Environment and Inequality



Sustainability in Development



Conservation Science and Policy



Land, Water and Food Security

Sustainability in Operations



Brown recognizes its role as a leader in global and local sustainability. As such, the University takes active steps to mitigate and help solve issues related to areas including waste, energy production, greenhouse gas emissions and environmental health. Brown aspires to divert 50% of its waste from Rhode Island's nearly full landfill and aims to reduce its greenhouse gas emissions to zero by 2040 with an interim goal of 75% reduction, from FY18 levels, by 2025. Brown's commitment to sustainability is a shared responsibility and effort across all departments and offices. From the Brown Bookstore supporting fair trade and labor practices to Purchasing Services supporting diversion efforts on campus by introducing a new toner recycling program, we work across campus to promote and engage the community in building a more sustainable university.

Student tour of solar panel array on
Nelson Fitness Center

Highlight: Brown's Net-Zero Commitment

The Secretary-General of the United Nations, António Guterres, summarized decades of scientific research with a brief, but accurate statement in March 2018: “The most systematic threat to humankind remains climate change.” Brown University’s leaders agrees. We are well past the time where urgent action is called for, and we hope to lead the way down a rapid decarbonization path that will play a role in avoiding the worst-case scenario.

The threat of climate change takes many forms. Unchecked warming will bring extreme heat and drought that threatens food production across the globe. Vanishing mountain glaciers will leave hundreds of millions of people without reliable freshwater. Sea-level rise will inundate major coastal cities, including Brown’s home of Providence. It is incumbent upon all of us, especially privileged institutions in wealthy countries, to take rapid and dramatic steps to reduce emissions.

In accordance with the urgency of the climate problem, in 2019 the Brown Corporation approved a plan to reduce Brown’s emissions by 75% by 2025 and to net-zero by 2040. As an important first step, Brown signed two multiyear power purchase agreements that will produce as much renewably generated electricity as Brown consumes. One renewable project, a wind farm in Texas, will generate 8 megawatts of electricity and the second project, a solar farm sited on a previously unused gravel pit in Rhode Island, will generate 40 megawatts of electricity. It is expected when these projects are operational that Brown will be at “net-zero” electricity emissions and achieve a 50% reduction in total emissions.

After addressing electricity emissions, Brown moved on to determine how to eliminate greenhouse gas emissions from heating the campus. In FY19 a high-level master plan to eliminate emissions from Brown’s central heating facility was developed. It is expected that by 2025, Brown will convert the central heating facility to burn recycled biofuel as a primary fuel, avoiding the use of fossil fuels and methane leakage associated with natural gas and avoiding competition for food crops associated with first-use biofuels. This solution is viewed as transitional since recycled biofuel is not available at the scale needed to ensure its long-term supply. However, the switch will produce another large reduction in campus GHG emissions relative to a FY18 baseline and buy time to renovate building infrastructure so that spaces can be heated by renewable electricity-powered, high-efficiency heat pumps. Power purchase agreements, Biofuel conversion and the eventual switching to renewable electricity powered heating in the central heat plant will eliminate nearly 75% of emissions from campus.

The last 25% of campus emissions comes almost entirely from heating the nearly 140 buildings that are not connected to Brown’s central heating facility. Eliminating fossil fuels from these will be the most costly and time-consuming of campus emissions reductions. Several options are being explored, and overtime Brown will work to eliminate these emissions through targeted renovations and life cycle replacements that allow the transition to non-combustion heating.

“

Defining sustainability is not easy. For most people, it is an amorphous idea. Not for Brown. Sustainability at Brown is comprehensive, measurable and, most importantly, ambitious, and it touches every member of the Brown community. It looks at every system, supports everything that Brown does and asks the important question: How can we emit less carbon and make our community more healthy?

—H. Curtis Spaulding

Professor of the Practice of Environment and Society



Facilities Management heat plant staff calibrating boilers to meet campus demand.

Highlight: Sustainability Initiatives at the Brown Bookstore

In FY19 the Brown Bookstore continued to expand its commitment to sustainability by strengthening existing initiatives and by forming new partnerships and programs. Notably, leadership at the bookstore focused on increasing student access to textbooks while decreasing the number of printed copies sold through the store. Thirty percent of academic books were rented in FY19, and the Bookstore is supporting the growing trend of digital and rental sales. With the new Inclusive Access program that was piloted with two faculty members, students were able to purchase all-digital textbooks through their courses at a greatly reduced price with savings as high as \$70 per book. If the pilot is successful this year, the Brown Bookstore plans to open this program to all faculty next fall. Additionally, to promote recycled and paper-reducing products, the reusable Rocket (note)Book was introduced at the bookstore, and staff are introducing more products such as clothing and graduation caps and gowns that are made from recycled plastic bottles, and reusable stainless steel straws that include a cleaner.

The Brown Bookstore is committed to supporting and promoting fair trade and labor standards through its participation in the Workers' Rights Consortium (WRC) and the Fair Labor Association (FLA). The WRC "is an independent labor rights monitoring organization [which] investigates working conditions in factories around the globe". Brown works with the commission to ensure that all of its vendors, licensees and partners adhere to socially responsible standards and practices to protect workers and the environment. The bookstore drafted and included a sustainability clause into its WRC mandate. This clause now

requires companies to meet minimum sustainability and social standards including providing workers with fair wages and offering basic employee benefits.

The Brown Bookstore continues to support nonprofit organizations that enhance the well being of our local community. One such organization is Tink Knit, a Brown and RISD student-run collaboration that enables low-income mothers in Rhode Island to make a supplemental income through knitting accessories. The bookstore stocks and sells the knitted products and all proceeds are returned to the group. Tink Knit offers financial freedom, job skills, micro-financing and legal support to those in need. Since its inception, the nonprofit has raised over \$30,000 in revenue and returned over \$20,000 to the mothers.



A Year of Accomplishments: Waste Disposal and Dining Services

The Office of Sustainability worked in partnership with Custodial Services, Residential Life, Brown Dining Services, the Staff Advisory Committee and student groups to ensure proper waste disposal of material on campus. Waste sorting training including peer-to-peer compost training in the Sharpe Refectory dining hall, and recycling education provided to student campus leaders and staff enabled our community to better engage in everyday sustainable actions.

This year's successful Clean Break Program resulted in the collection and donation of 21,000 pounds of material which was then donated to community partners including the Million Book Project, Goodwill of Southern New England and Mount Pleasant Library. For the first time, members of the Staff Advisory Committee joined the move-out effort and assisted with the last push to deliver donated goods to local partners and sort through items in the residential halls.

Also contributing to diversion and donation efforts was the Food Recovery Network, which donated 6.5 tons of food to local organizations. Brown Dining Services and the Office of Sustainability partnered in FY16 to adopt a robust composting program in campus dining facilities. This partnership resulted in over 545 tons of organic material going to a local composting facility in FY19.

WASTE



17%

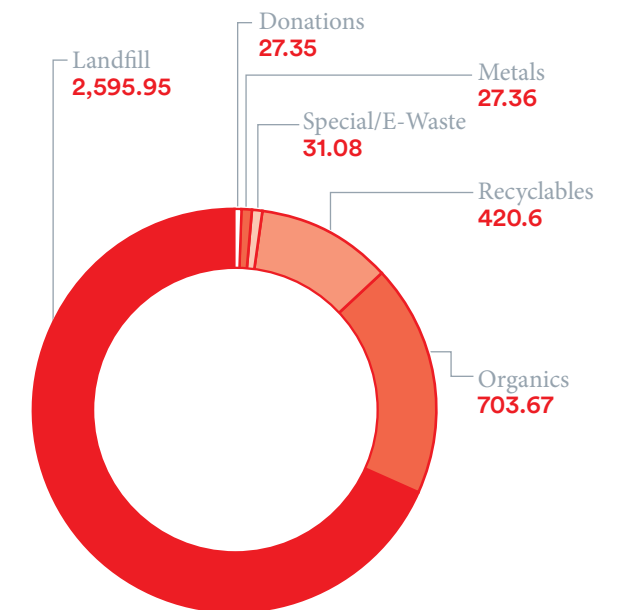
Recycling Rate



33%

Total Diversion Rate

BROWN'S WASTE STREAMS (IN TONS)



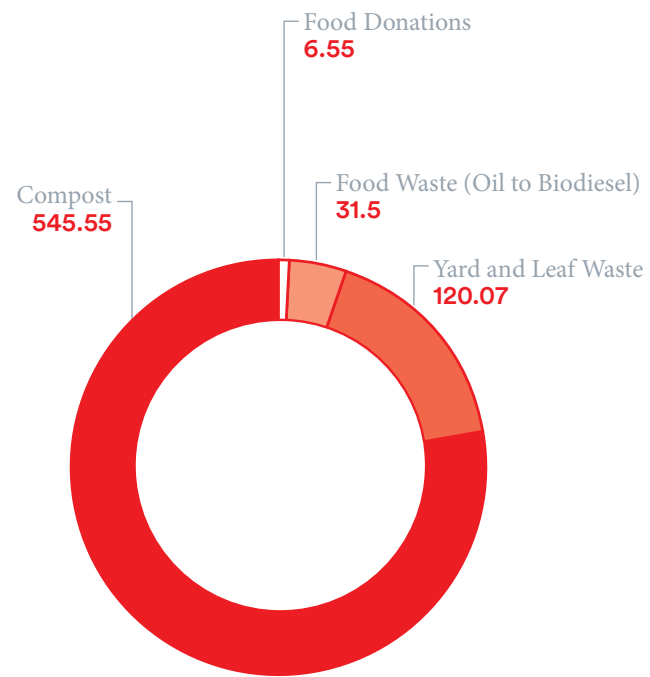


A student volunteer educates a diner about composting at the Sharpe Refectory.

ORGANICS DIVERSION AT BROWN

The majority of organics diversion at Brown is attributed to composting, the process of transforming organic materials such as food waste into a nutrient-rich, natural fertilizer. Composting has many benefits, including enriched soils, reduced contributions to landfills and decreased release of greenhouse gases into the atmosphere. As such, composting is an essential part of Brown's commitment to sustainability.

ORGANICS DIVERTED FROM THE LANDFILL (IN TONS)



BROWN'S STRATEGIC WASTE PLAN

Facilities Management staff began implementation of Brown's Strategic Waste Plan in FY19. This three-part plan will re-envision how Brown's community members interact with their waste on campus. The goal is to remove infrastructure barriers to the proper sorting and disposal of waste. This will be achieved with the following measures:

In FY19, Office of Sustainability staff and interns began implementation of the following:



Standardization of all built-in (countertop and wall) landfill and recycling units on campus including framed waste-sorting signage.



Implementation of the Trash Buddy system on campus, which replaces current desk-side bins with a standard blue recycling bin and a small, lidded waste bin that attaches to the recycling bin. Both bins are outfitted with sorting guides.



Strategic community bin standardization and placement in all buildings on campus.

DINING SERVICES

Brown Dining Services emphasized its commitment to sustainability in FY19 by enhancing its commitment to socially and environmentally conscious sourcing, by continuing to support the compost program through training and education, and by increasing plant-based menu items in its dining facilities.

This year, Dining Services increased vegetarian options in all of its retail units and students can now find a plant-based option at every station in Andrews Commons, Josiah's and the Blue Room. Furthermore, all of Brown's dining halls offer at least one vegan option at every meal, offer non-dairy milk options, label vegan entrees and offer vegan desserts.

Brown's food sourcing principles include local assessment, fair trade, humane and sustainably sourced.

LOCAL

These foods and products can be traced to locally owned and operated, small and mid-size, farms, ranches, boats and businesses.

50

local farms and producers (within 250 miles)

FAIR TRADE

Individuals involved in food production work in safe and fair conditions and receive fair compensation.

All New Harvest coffee served in Brown's dining halls and retail locations.

HUMANE

Animals have their mental, physical and behavioral needs met in a low-stress environment.

11.5%

of total purchases

SUSTAINABLY SOURCED

Food is sourced in a way that protects the environment and human and animal health both in the present and for future generations.

Local seafood is caught using technology that minimizes the output of greenhouse gas emissions. Seafood purchases also support American commercial fishers.

Vendors we source from that practice sustainable production



MURRAY'S CHICKEN (LOCAL)

Raises its chickens with no antibiotics, no growth drugs and no hormones, and the vendor is certified humane and uses vegetable feed.



PINELAND FARMS

Raises its cows with no antibiotics and no added hormones, and cows are fed a strict vegetarian diet.

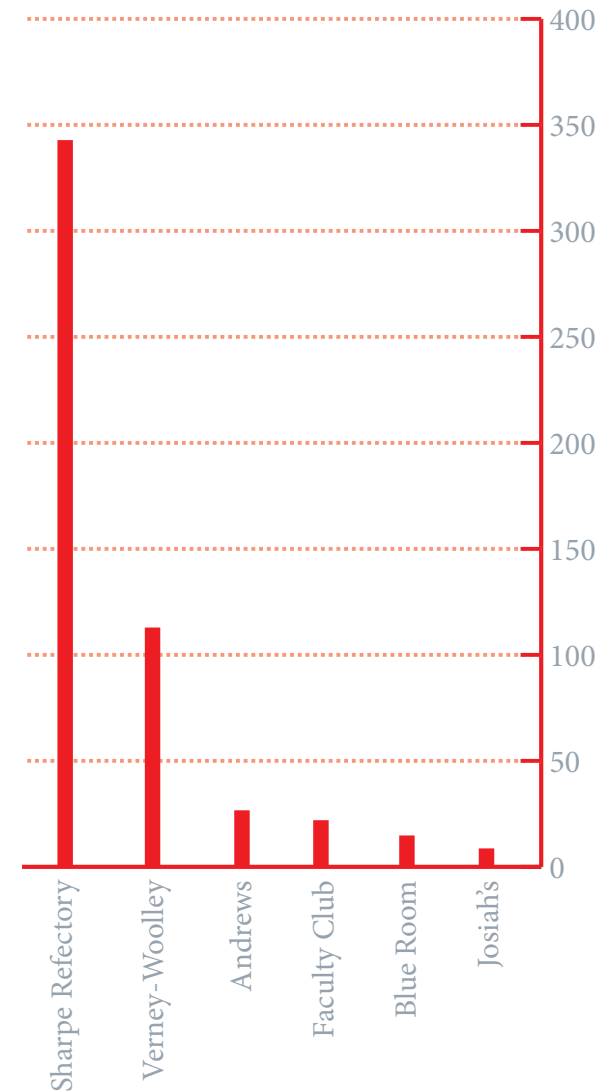


RHODY FRESH MILK AND NARRAGANSETT CREAMERY

(LOCAL)

Milk and yogurt are rBGH free.

COMPOST BY DINING HALL (IN TONS)



Creating sustainable food systems means being in touch with the types of foods eaten on campus, where the food has come from and how much food is donated, wasted or composted. This also means connecting with everyone who consumes food on campus — cutting across campus from the Department of Facilities to Dining Services to students and faculty! Working together with offices across campus to capture, understand and mitigate Brown's nitrogen footprint was an important lesson in how important these connections are for generating innovative, sustainable solutions for all.

—Meredith Hastings
Associate Professor of Environment and Society and
Earth, Environmental, and Planetary Sciences.

Sharpe Refectory: Collaboration and Resource Sharing

Access to nutritious and healthy food choices plays an important role in the student experience. In addition, sustainability concerns across campus have been the subject of increased focus for the University community. These considerations and collaboration among students, faculty and staff have led to a more holistic and sustainable approach to re-evaluating Dining Services' infrastructure and equipment. As a result, in FY19 significant changes were introduced at Sharpe Refectory and across Dining Services, making on-campus dining more sustainable and competitive, and improving employee and diner experience.

Four years ago, Brown began to re-evaluate its approach to food services. The new vision for Brown Dining Services focused on integrating new creative, diverse menus, enhanced food quality, customer feedback and sustainability concerns into daily operations.

To jump-start the vision, Sharpe Refectory servery was renovated to accompany the new approach to food preparation. During the renovation project, the Office of Sustainability evaluated the waste station infrastructure and identified opportunities for enhancing compost diversion and expanding the reusable-container-to-go program. This resulted in a new waste station layout and led to improving composting and recycling on the part of students.

After a multiyear planning and funding process and a series of infrastructure upgrades, Brown successfully culminated its long-term goal of installing air conditioning (AC) in the Sharpe Refectory to create the best possible learning, living and working environment. During the feasibility

assessment led by Facilities Management's Planning, Design and Construction (PD&C) team, the Office of Sustainability engaged the project team to evaluate the impact of air conditioning on greenhouse gas emissions, utility and operational cost savings.

During the AC project, the Office of Sustainability, Dining Services and PD&C identified an opportunity to collaborate on the replacement of two highly inefficient dishwashers in the Sharpe Refectory. The replacement aids Brown's Thermal Efficiency Project (TEP) and aligns with the University's decarbonization goals by improving sustainability efforts within operations and increasing efficiency for dining hall staff. The new dishwashers boast impressive sustainability credentials including:

- Reducing the steam load at the dining hall
- Saving 1.25 million gallons of water annually
- Cutting Brown's greenhouse gas footprint by an estimated 158 MTCDE annually
- Minimizing the heat and vapor released into the kitchen, lowering the load on the kitchen's air conditioning
- Reducing the number of chemicals and soap needed to hygienically clean dishware

The success of Sharpe's transformation largely rests on the successful collaboration of various units within Brown and the maximization of available resources. Dining Services identified its needs and worked closely with Facilities Management and the Office of Sustainability to identify solutions to reduce the University's carbon footprint, water and energy consumption and to improve efficiency. The experience of Sharpe can serve as an example of successful collaboration and looking beyond any single department or unit.



Through my experience (as an engineering student and someone working for the Office of Sustainability), I learned a lot about how complex building management (both new construction and renovations) can be and was able to start to explore the specifics of project management within a university.

—Daniel Traver

Class of 2020, Sc.B. candidate, environmental engineering; intern in the Office of Sustainability; part of the Sharpe project team



The Sharpe Refectory

A Year of Accomplishments: Energy

The Office of Sustainability within Facilities Management, continuously works to support Brown's strategic plan, which highlights the theme of Sustaining Life on Earth and states: "Work on this theme will complement ongoing efforts to improve sustainability on campus."

FY19 was a landmark year for Brown's commitment to reducing its contribution to climate change. In 2008 the University set a GHG emissions goal of 42% reduction of 2007 levels by 2020. Brown currently stands at 29.7% below 2007 levels (excluding new construction). In FY19 Brown enhanced

its 2008 GHG goal. The enhanced goal is to achieve net-zero by 2040 with an interim goal of 75% reduction from FY18 levels by 2025.

Currently underway, the Thermal Energy Efficiency Project (TEP) will get Brown closer to its 2020 goal and beyond. TEP will eliminate many steam loads and convert the central heating plant to a medium-temperature hot water system. The project is an enabling project for net-zero as it will support system electrification, heat recovery energy distribution and service of lower temperature heating systems.

In FY19, \$4.9 million was spent on efficiency improvements. This investment resulted in approximately:

\$895,000

in National Grid utility incentive payments

2,605

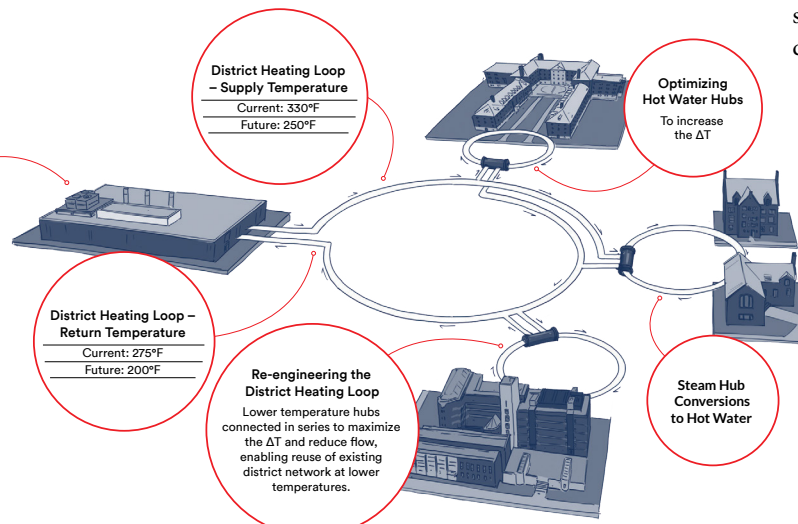
an annual GHG emissions reduction, in tons.

\$533,709

annual utility savings.

Thermal Efficiency Project

Central Heating Plant
240,000 lbs/hr total steam capacity
3 existing steam boilers modified to high temperature hot water



A Year of Accomplishments: Purchasing Services

Purchasing Services stayed busy in FY19 working on various programs to enhance sustainability both within its own department and across campus. Purchasing partnered with Office Depot to implement and, with the Office of Sustainability, to promote, Office Depot Greener Office to campus departments. This incentive-based recycling program is intended to make it easier to recycle used toner and printer ink cartridges. Instead of throwing cartridges away that end up in Rhode Island's landfill, departments can now directly support Brown's sustainability efforts. The site mybusinessrecycles.com was launched in February 2019, and departments (other than those under the Managed Print Services program) can register their location with Office Depot Greener Office and print out a prepaid shipping label to return cartridges for recycling. Since the launch, 25 departments are actively using the program.

Purchasing Services continued to deliver opportunities for departments to engage in sustainability practice by refining the Office Depot punchout in Workday. The system now features refined labeling to highlight greener/recycled products. Items in this category are labeled Eco-Conscious and/or Recycled Content. An Eco-Conscious label indicates items with one or more meaningful eco-attribute or eco-label, details of which are provided in the item description or detail. A Recycled Content label indicates items that contain post-consumer and/or post-industrial recycled materials.

In support of sustainability, Purchasing implemented a greener delivery program in an effort to reduce delivery packaging waste, such as cardboard. With the new program, Office Depot deliveries arrive in a reusable tote that is then returned to Office Depot once the items have been removed. These totes have been well received on campus and have proven successful in reducing the amount of cardboard generated and disposed of.

A Year of Accomplishments: Sustainable Building Design and Transportation

Construction on the Engineering Research Center and Stephen Robert Hall and renovations of 164 Angell Street and Friedman Hall were completed in FY19. Throughout the design and construction process, sustainability opportunities were continuously examined and adopted where appropriate. All four projects meet Brown's standard of 25% better than code in energy utilization. Further examples of sustainable practices employed during design and construction within the above buildings vary but include:

- Sourced furnishings that do not contain chemical flame retardants
- Installed energy-efficient LED lighting
- Added bike racks to the perimeter of the buildings
- Improved interior daylighting by incorporating curtain walls
- Promoted biking to work by installing showers on premises
- Installed low-flow water infrastructure



Energy efficient lighting was installed at the Engineering Research Center.



All furnishings at 164 Angell Street are chemical flame retardant free.



Natural lighting illuminates the lobby in the new Stephen Robert Hall.



The Brown University Shuttle

TRANSPORTATION




Shuttle Rides

117,371	4,742	111,978	55,310	99
Daytime Shuttle Rides	SEAS Shuttle Rides	Evening Shuttle Rides	OnCall Shuttle Rides	Other (e.g. Parking Ban and Commencement)

Safewalk

Walkable communities help to cut greenhouse gas and other emissions. Safewalk is a program staffed by student employees who provide point-to-point walking escorts for their fellow community members on the Brown campus. Each two-person team also patrols the campus, along the Brown safeRIDE shuttle route, acting as additional “eyes and ears” for community safety.

RIPTA Bus Rides

 <p>334,077 RIPTA rides for the year through the U-PASS Program.</p>	 <p>Average of 458 round trip rides per day.</p>	 <p>RIPTA is FREE for the Brown community.</p>
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An intern with the Office of Sustainability provides sustainability resources during orientation.



Community Engagement



Brown is committed to supporting local institutions and organizations in Providence and surrounding areas while incorporating sustainability best practices. Efforts such as partnering with community organizations to collect and donate clothing and other items help Brown reach its goal of 50 percent diversion from the landfill while also supporting the needs of the local community. Brown is proud to work alongside its many partners and will continue to expand its work to ensure a more sustainable future.

Community Highlight: Green Move-In

During move-in, the Office of Sustainability expanded its efforts to promote sustainability by participating in new Orientation events aimed at educating first-year students and student leaders in FY19.

Once again, Green Move-in included OS's participation in the first-year Orientation fair, compost training for first-year students and Brown Dining staff and student workers, and educational opportunities for Meiklejohn student leaders. However, for the first time undergraduate interns and volunteers working for the program also attended Orientation fairs for incoming graduate students and international students, and the office offered Sustainability Tours for new students as well as information at the first-year students' unit meetings. The Office of Sustainability's Green Move-in program took advantage of every opportunity to provide incoming students with the resources they need to make sustainable choices while living and studying at Brown.

In addition to educational programming, in collaboration with Custodial Services and the Grounds Division, undergraduate student interns planned and managed a successful campaign during the move-in weekend to educate students and parents on how to properly sort their waste in outdoor dumpsters and roll-offs. The campaign relied on the involvement of over 30 volunteers who monitored waste in the residential halls and interacted with students and parents. This effort resulted in significant waste diversion from our landfill.



Green Move-in volunteers sort waste to prevent contamination in our recycling stream.

Environmental Student Groups at Brown

Environmental student groups at Brown work to address a variety of issues pertaining to sustainability, including climate change mitigation and adaptation, energy and water efficiency, food waste, transportation, environmental justice and environmental literacy.

Below are highlights from a few of the active environmental groups on campus.

The Sustainable Food Initiative (SuFI)

The umbrella organization for projects promoting sustainable food on campus hosted a cooking workshop with the plant-based chef, cookbook co-author and co-founder of Not Your Sugar Mamas, Kyleen Keenan. Attendees learned how to make plant-based cheese and chocolate and received education on how to make food that is environmentally sustainable.

Brown Market Shares Program

Brown Market Shares Program is a student-run, campus-based food distribution program, connecting the College Hill community with regional producers through affordable weekly shares of fresh, local and sustainable produce, bread, mushrooms, eggs, dairy and meat throughout FY19.

Green Events

Green Events hosted five clothing swap and plastic bag drive events in FY19. Brown community members were able to exchange unwanted clothing and accessories for lightly used garments as well as recycle their plastic bags with the student group.

Climate Action League (CAL)

Climate Action League, now known as Scientists for a Sustainable World, collaborated with the Office of Sustainability to develop a prototype of a compost weight scale to gather time-stamped data on composting trends in campus dining.



Market Shares workers preparing for a weekly pickup event.

Photo Credit: Market Shares

Highlight: The Possibly Podcast

Possibly, a new podcast about sustainability science created by IBES/EEB Professor Stephen Porder, producer/Brown alumna Megan Hall ('04), journalist/Brown parent Nancy Pick and Torey Malatia (co-creator of This American Life), has quickly become a hit with listeners of the Public's Radio (Rhode Island's chapter of National Public Radio). The podcast "takes on huge problems, like the future of our planet, and uses science to come up with everyday solutions." According to reporter and recent Brown graduate Molly Magid, the podcast reimagines how to effectively communicate content about sustainability and the environment in a way that is both approachable and innovative.

In addition to long-format podcasts that dive deep on topics like "the future of food" and "how to heat our homes without cooking the planet", the Possibly team solicits sustainability questions from listeners. Brown undergraduates, under the supervision of Porder and Hall, research the answers and produce and edit the answers, which are then broadcast

during NPR's Morning Edition. For example, a recent episode tackled the listener's question "What's the most climate-friendly way to barbeque: charcoal or propane?" Students dove into the literature, interviewed experts, and produced a show just in time for Labor Day Weekend.

Airing every Tuesday on the Public's Radio (FM 88.1 and 89.3), Possibly uses the lens of science to highlight solutions that matter, and that may be counterintuitive. For example, the answer to "charcoal or propane" seems simple – propane has fewer greenhouse gas emissions. But the students found that changing what you grill, particularly if you grill red meat, has a bigger climate impact than what you use to grill it. This example illustrates the podcast's larger goal. By using science to quantify the impacts of proposed solutions, listeners can focus on what really makes a difference and avoid spending time and money on things that may have little or no benefit.

Possibly airs weekly on the Public's Radio and can be found on iTunes and Stitcher.



Undergraduate students record the Possibly podcast in the Rockefeller Library's recording booth.



Green roof atop the Marty and Perry Granoff Center for the Creative Arts.

Our Path Forward



We expect FY20 to be another landmark year for sustainability at Brown. Momentum from the new net-zero commitment will lead to a detailed map of our path and timeline to our interim 2025 goal and our 2040 goal. Furthermore, on the coattails of the greenhouse gas commitment will be the formalization of Brown’s Strategic Sustainability Plan. This plan will include University sustainability principles and a quantifiable approach to sustainability with a defined scope, indicators, metrics and accountability by which the University will prioritize sustainability efforts.

As the strategic plan is being developed, progress in critical areas such as waste reduction and diversion and emissions reductions will not stall. In parallel with strategic planning, FY20 will focus on decarbonizing campus operations; developing Scope 1, 2 and 3 emissions protocol; developing new building standards; and continued implementation of the waste management plan, including standardization of waste infrastructure.

Acknowledgments

In early FY20 the Office of Sustainability will gain two critical positions. The first, a data scientist, will expand Brown's scope of sustainability-related data collection and analysis. The data scientist will oversee the new greenhouse gas inventory and will develop a platform that will bridge sustainability-related data from across campus into a centralized repository with a visualization component. The second, an internship and project specialist, will be responsible for continuous enhancement of the Office of Sustainability's internship program, communications, marketing and student engagement.

The Office of Sustainability is enthusiastic for the coming year, and we look forward to working across the University, and beyond, to reinforce and enhance Brown's standing as an example of sustainability in the greater community.



Brown's student garden



The Office of Sustainability would like to acknowledge, first and foremost, the contributions and efforts of the Office of Sustainability interns and environmental student groups at Brown, whose commitment to various sustainability initiatives provides the University with valuable insight and resources to elevate sustainability initiatives across campus. The success of the Office of Sustainability is hinged on collaboration with departments, staff and faculty that directly contributes to sustainability efforts at Brown.

We would like to acknowledge and thank the following partners:

- Leah VanWey, Dean of the School of Professional Studies, Professor of Environment and Society and Sociology
- Stephen Porder, Assistant Provost for Sustainability, Professor of Ecology and Evolutionary Biology and Environment and Society
- Longer-Term Sustainability Study Committee
- Brown's Committee on Indirect Greenhouse Gas Emissions (Scope 3)
- Brown Dining Services
- Office of Transportation and Parking Services
- Office of University Communications
- Office of Government Relations and Community Affairs
- C.V. Starr Program in Business, Entrepreneurship and Organizations
- Office of Residential Life
- Brown Purchasing Services
- Brown Real Estate and Auxiliary Housing Office
- Environmental Health and Safety



Since our last sustainability report, the Intergovernmental Panel on Climate Change has released yet another report articulating the imminent dangers of climate change, the effects of which are already being felt in Rhode Island and around the world. Brown is responding by moving to eliminate fossil fuels from most of campus by 2025, and completely by 2040 (at the latest). In addition to the need for rapid greenhouse gas emissions reductions, scientific evidence suggests the way humans use land, grow food and consume water needs to be rethought in order to transition to a more sustainable future. The evidence is overwhelmingly convincing, but it's also overwhelming. It sometimes feels like we have to do everything at once and that, simultaneously, nothing is enough. We cannot let this challenge paralyze us. Instead, we must act with purpose and precision. We are working rapidly to articulate and act on our sustainability priorities, rethinking not only how we heat and cool our buildings, but what food and materials we purchase, what materials we use and how those impact human health.

–Stephen Porder

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