



Office of Sustainability

2022

# MIT Office of Sustainability Annual Report

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The background of the page is a photograph of several tall, white, classical columns from a building, likely at MIT. The columns are arranged in a row and recede into the distance. The lighting is bright, suggesting a sunny day. The columns have a fluted texture and decorative capitals.

## MISSION AND METHODOLOGY

The mission of the MIT Office of Sustainability (MITOS) is to transform MIT into a powerful model that generates just, equitable, applicable, and scalable solutions for responding to the unprecedented challenges of a changing planet.

To achieve that mission, MITOS seeks to advance a collaborative process that engages and elevates a diverse set of voices to foster operational excellence, education, research, and innovation on our campus. Since its inception, MITOS has defined its priorities for the MIT campus around “areas of impacts” organized by a commitment to a zero-carbon campus, climate resiliency, materials lifecycle, healthy people, and thriving networks while being guided by the Institute’s climate action plan.

MITOS applies a scientific methodology of inquiry, data analytics, and solution development in partnership with MIT researchers, staff, faculty, and students to engage in the work of addressing global challenges at the local level, using a framework of the role of the individual, campus, city, state, and globe. Operating at the intersection of campus operations and research, the Office is uniquely positioned to strategically guide the Institute in meeting its climate action goals.

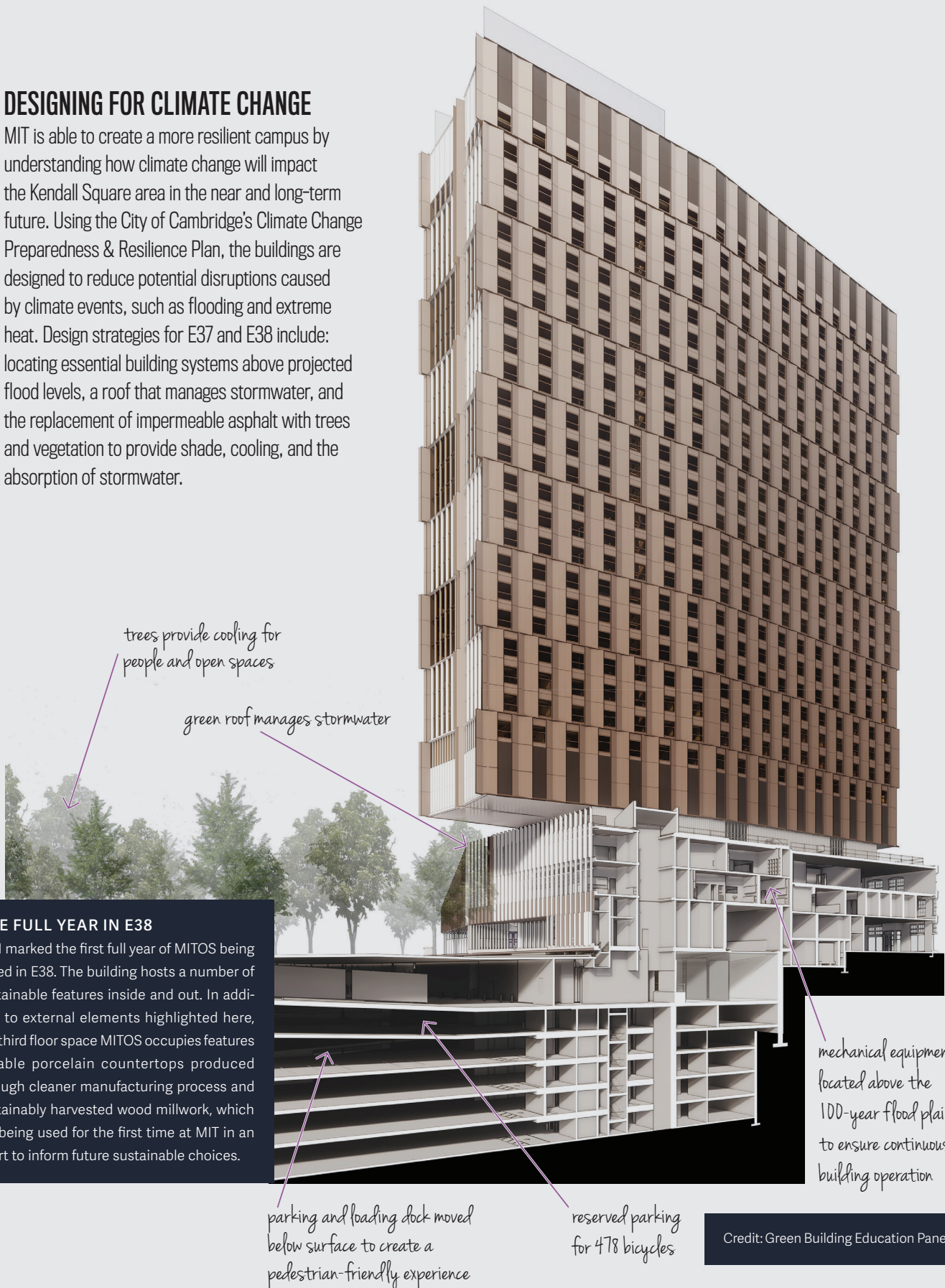
### **Implementation of Fast Forward: MIT’s Climate Action Plan for the Decade**

In 2022 the Office mapped its existing areas of impact to the vision and campus commitments outlined by *Fast Forward: MIT’s Climate Action Plan for the Decade* (launched in May 2021). *Fast Forward* is MIT’s most ambitious climate action plan to date spanning innovation, research, education, policy, and the campus. Over the past year, MITOS has been the lead office responsible for developing a distributed leadership model for the oversight and implementation of the fourteen near and long-term campus commitments outlined in the plan. The most ambitious being a commitment to zero direct emissions by 2050 with a near-term goal of net-zero emissions by 2026. Additional priority areas include the development of a climate resiliency and adaptation roadmap and an on-going commitment to leverage the campus as a test bed to advance these efforts. MITOS’s role in leading, supporting and implementing these commitments over the past year is explained in detail in this document.



## DESIGNING FOR CLIMATE CHANGE

MIT is able to create a more resilient campus by understanding how climate change will impact the Kendall Square area in the near and long-term future. Using the City of Cambridge's Climate Change Preparedness & Resilience Plan, the buildings are designed to reduce potential disruptions caused by climate events, such as flooding and extreme heat. Design strategies for E37 and E38 include: locating essential building systems above projected flood levels, a roof that manages stormwater, and the replacement of impermeable asphalt with trees and vegetation to provide shade, cooling, and the absorption of stormwater.



trees provide cooling for people and open spaces

green roof manages stormwater

mechanical equipment located above the 100-year flood plain to ensure continuous building operation

parking and loading dock moved below surface to create a pedestrian-friendly experience

reserved parking for 478 bicycles

Credit: Green Building Education Panels, E38

### ONE FULL YEAR IN E38

2021 marked the first full year of MITOS being based in E38. The building hosts a number of sustainable features inside and out. In addition to external elements highlighted here, the third floor space MITOS occupies features durable porcelain countertops produced through cleaner manufacturing process and sustainably harvested wood millwork, which are being used for the first time at MIT in an effort to inform future sustainable choices.



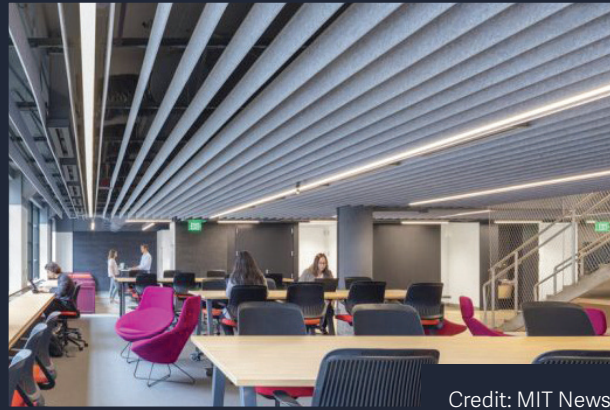
# ORGANIZATIONAL STRUCTURE

MITOS consists of a team of nine full time staff: director, assistant director, senior project manager, three project managers, senior administrative assistant, data engineer, and communications specialist. Additionally, MITOS is supported by two faculty fellows and twelve student researchers throughout the academic year.

The staffing model is organized around MITOS's five areas of impact supported by subject matter experts. The data scientist and communications specialist roles work as partners to each program manager with regards to their specific portfolio of areas of impact mentioned above.

In late 2022, two additional project managers were added to the team to support the specific project areas of climate action planning at the departments, labs, centers and institutes (DLCI) level and designing out waste, both priority areas called for by *Fast Forward*.

In addition to the role of the director, who is responsible for overseeing the management and implementation of all fourteen *Fast Forward* commitments, MITOS team members serve varying roles in leading and supporting these commitments, including as co-leads, subject matter experts, and facilitators for research and data collection. This work also benefits from partnerships at MIT and beyond. MITOS's partners include MIT campus departments, labs, and centers (DLCs); student groups; the cities of Cambridge and Boston; and higher education peers across the region and globe.



Credit: MIT News

## The Office of Sustainability's New Home

Since 2021, the Office of Sustainability has been based in E38—dubbed the new gateway to MIT—which is also home to Admissions, Open Space, and the Innovation Hub. In its new office space, MITOS was paired with two climate-focused research groups at MIT: the Abdul Latif Jameel Water and Food Systems Lab (JWAWS) and the Environmental Solutions Initiative (MIT ESI).

The construction and renovation of new office space in E38 provided a unique opportunity to design and support a shared workspace from scratch—using the new space as a test bed for sustainable design and materials. Motivated by this, MITOS convened a group of representatives from departments moving to E38 to collaboratively select ideas and design a workspace that supported sustainability throughout the building. The committee has met consistently since 2019 and made collective decisions around sustainable interior materials, waste systems, design features, and more.

## Student Sustainability Researchers

The crucial work of the MITOS team is supported by the integration of Student Sustainability Researchers who focus on annual priority areas such as designing out waste, sustainable materials, greenhouse gas emission measurement and mitigation, and more. These students—both undergraduate and graduate level—have contributed a tremendous amount of work to MITOS and MIT. Despite the ongoing impacts of the pandemic, MITOS continued to support a full cohort of Student Sustainability Researchers in the 2021–2022 academic year in a hybrid format. Organized around the *Fast Forward* commitments, these student researchers worked on projects that varied in scope and focus area, providing broad support to implementing MIT's climate work.



# FAST FORWARD COMMITMENT

## PROGRESS

*Fast Forward* calls on MIT to "mobilize its strengths" in working to address the climate crisis. The plan focuses on both investments in new research and applied technologies to reach global goals as well as immediate action on campus to reach the plan's goal of eliminating MIT's direct campus emissions by 2050 with a near-term goal of achieving net-zero emissions by 2026. What follows is a progress update on each of the commitments that MITOS has been the lead on.

### Net-Zero Campus by 2026

MIT has taken a multi-faceted approach to reducing its emissions including near-term efforts to reach net-zero by 2026. The paramount strategy remains focused on decarbonizing campus operations through deep energy efficiency measures, fuel switching, and sustainable building design. Reaching this goal requires decarbonization of the regional electric grid and other technological advances in addition to MIT's current mitigation efforts which focus on building energy efficiency, the electrification of buildings and fleet, and on-campus renewable energy installations. The evaluation of new technologies and strategies for the next generation of MIT's district energy system is also essential to reach this goal.

To supplement these on-campus mitigation efforts, MIT is also investing in high-impact, off-site renewable energy generation projects, such as power purchase agreements (PPA) as well as high-quality carbon reduction projects that generate verified carbon offsets. The Net-Zero 2026 Faculty Review Committee was convened by MITOS in October 2021 for the purpose of debating and informing this offsite, multi-sector portfolio approach.

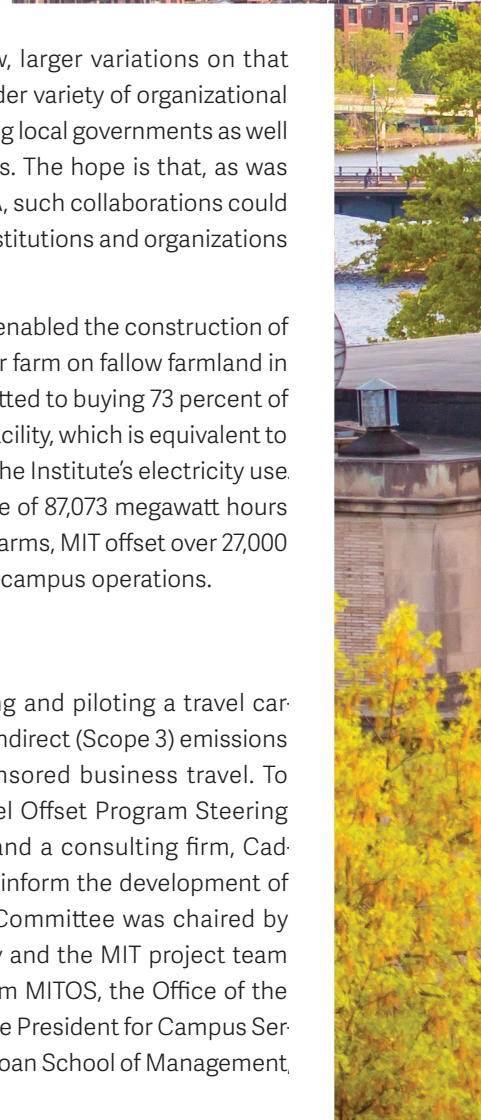
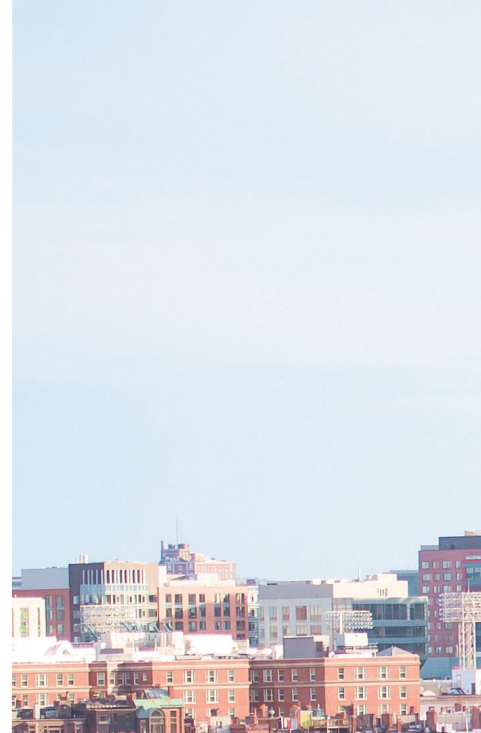
MIT's current PPA provides a template that has already been emulated by other institutions, in many cases enabling smaller organizations to take part in such a plan and achieve greater offsets of their carbon emissions than might have been possible acting on their own. Now,

MIT is actively pursuing new, larger variations on that plan, which may include a wider variety of organizational participants, perhaps including local governments as well as institutions and nonprofits. The hope is that, as was the case with the original PPA, such collaborations could provide a model that other institutions and organizations may adopt as well.

The 2016 Summit Farms PPA enabled the construction of a 650-acre, 60-megawatt solar farm on fallow farmland in North Carolina. MIT is committed to buying 73 percent of the power generated by the facility, which is equivalent to approximately 40 percent of the Institute's electricity use. In 2022, through the purchase of 87,073 megawatt hours of solar power from Summit Farms, MIT offset over 27,000 metric tons of CO<sub>2</sub>e from on-campus operations.

### Travel Offsets

MIT committed to developing and piloting a travel carbon offset program to offset indirect (Scope 3) emissions affiliated with Institute-sponsored business travel. To accomplish this goal, a Travel Offset Program Steering Committee was appointed and a consulting firm, Cadmus, was hired to assist and inform the development of this program. The Steering Committee was chaired by the Director of Sustainability and the MIT project team includes faculty and staff from MITOS, the Office of the Vice President of Finance, Vice President for Campus Services and Stewardship, MIT Sloan School of Management,





MIT Climate and Sustainability Consortium, and MIT Department of Urban Studies and Planning. MIT's priorities included identifying and implementing a process by which faculty and staff could account for the carbon impact of their travel and reducing the amount of air travel taking place.

### **On Campus Solar Power Generation**

Increasing solar electricity production on campus is identified by MIT's climate action plan as a valuable strategy to eliminate direct campus carbon emissions. To accomplish this, MIT committed to expanding its on-site solar generating capacity from less than 100 up to 500 kilowatts (kw). On campus today, there are five rooftop solar photovoltaic (PV) systems that provide 86 kilowatts generating capacity, though several are near the end of their productive lifecycle. The MIT staff team leading this initiative has identified potential locations for the new installations to meet the minimum 500kw goal. As a matter of practice, MIT has for several years assessed each new building project or renovation for feasible and effective sustainability features, including rooftop solar. Academic stakeholders have also been engaged to enable opportunities for continued research on solar at MIT.

### **Scope 3 Emissions**

Since 2018, MITOS has collaborated with Jeremy Gregory, Executive Director of the MIT Climate and Sustainability Consortium and a research scientist specializing in lifecycle assessment. Gregory has worked as a MITOS Faculty Fellow to build a preliminary estimate and develop methods for rapid data analysis of Scope 3 greenhouse gas emissions activities. Scope 3 activities include goods purchased by MIT, MIT-sponsored travel, employee commuting, campus-generated waste, and MIT capital goods such as building construction materials and large equipment.

Using the World Resources Institute/ World Business Council for Sustainable Development GHG Protocol for Scope 3 (referred to as "Corporate Value Chain") framework, MIT is

working to provide estimated accounting of the full breadth of emissions involved in operating the Institute. MITOS Student Researchers working under Gregory's leadership and using the above protocol, have helped to collect, process, and estimate the campus GHG emissions impact from each Scope 3 sub-category.

Once this data is converted into GHG emissions impact, MIT will develop visualizations to help the community understand the accounting of our Scope 3 portfolio. This accounting and communication will enable the further advancement of other goals outlined in *Fast Forward* which need this information, including the impact goals and travel offset goal.

### **Greenhouse Gas Accounting and Measurement**

The year 2022 marked the seventh full year of MITOS working with the Department of Facilities and other partners to track performance and publicly report on progress towards reducing campus greenhouse gas emissions. MITOS works closely with Facilities team members to identify and develop mitigation measures across campus. Driven by MIT's goal to eliminate direct campus emissions by 2050, deep energy retrofits of buildings across campus along with MIT's updated Central Utilities Plant remain central to near-term milestones. In support of the *Fast Forward* goals, efforts have been scaled up to deploy artificial intelligence to optimize building control systems, upgrade heating and cooling systems that will significantly reduce energy use while improving occupant comfort and implement programs such as fume hood hibernation and equipment power-saving adjustments.

These tracking, reporting, planning, and mitigation efforts enable MIT to better understand our direct contribution to greenhouse gas emissions and inform carbon reduction strategies. *Fast Forward* also calls for MIT's off-campus sites, including the Bates Research and Engineering Center, Haystack Observatory, and Endicott House to be included in MIT's scope of GHG emissions accounting. The inclusion of these spaces will help provide MITOS and its partners with a more complete picture of MIT's emissions and the scope of work needed to reduce, offset, and ultimately eliminate them.



# CLIMATE RESILIENCY

The goal of the MIT Climate Resiliency Committee, managed by MITOS, is to collaboratively assess, plan, and operationalize a climate resilient MIT. The Committee seeks to ensure a campus community that continues to fulfill its mission in the face of current and future climate risks and disruptions due to flooding from more frequent and extreme rains, storm surges, and rising sea-levels, as well as extreme heat events.

*Fast Forward* calls for by 2025 a “Resiliency and Adaptation Roadmap” that provides “a foundational strategy by which to plan for a changing climate to inform future construction, renovation, space use, and the safety of our community in the years ahead.” MITOS initiated a first steps towards development of this roadmap by collaborating with the Office of Campus Planning and Department of Facilities to engage a consultant team from Arup Engineering with Reed Hildebrand to provide a Phase 1 Resiliency Roadmap Gap Analysis.

Building on methods used to generate an understanding of campus flood risk to date and share lessons learned beyond campus, this past year also saw the MITOS resiliency work serve as a collaboration partner and case study to be developed within one of the Climate Grand Challenge projects selected for a five year research program.

## Heat Risk and Resiliency

Managing the uncertainty of climate risks requires understanding challenges and identifying adaptive opportunities through integrated layers of resilience: community, buildings, infrastructure, and site. These organizing layers are both interdependent and collectively critical to supporting MIT’s mission. The *Fast Forward* resiliency and adaptation roadmap goal empowers and enables the continuation of this work on a comprehensive level, considering MIT’s unique campus and the potential flood and heat risks posed to it and its function.



In the past year, MITOS began focusing on the heat risks faced on campus, building upon efforts related to flood risk (the MIT Climate Resiliency Dashboard debuted in 2020). The Office engaged consulting agency, Resilient Analytics, to initiate a Phase 1 Gap Assessment to help MIT understand potential campus impacts and opportunities for managing intensifying heat risks. Additionally, MITOS facilitated the collection of on-the-ground data related to heat risk, working with graduate students and researchers to collect heat data from multiple spots on campus to inform risks specific to MIT, rather than relying on data commonly used from locations like Logan Airport which may have vastly different heat readings than MIT’s campus. Last, MITOS and partners began reviewing the new climate modeling data from the Intergovernmental Panel on Climate Change (IPCC) to understand how weather patterns in shoulder seasons and specifically months September and May—which are busy months at universities like MIT—are expected to change. This work continues to set the foundation for the 2025 roadmap.

## Campus Porosity

The Institute is now home to the MIT Porosity Hunt—a citizen-science effort using the campus as a place to test emerging methodologies, instruments, and data collection processes to better understand the potential impact of a changing climate (and specifically storm scenarios resulting from it) on infrastructure. The hunt was a collaborative effort between the Urban Risk Lab and MITOS aimed at supporting an MIT that is resilient to the impacts of climate change, including flooding and extreme heat events. Working over three days, members of the hunt catalogued openings in dozens of buildings across campus to better support flood mapping and resiliency planning at MIT. The team mapped 1,030 porosity points across 31 campus buildings that will aid in resiliency planning and preparation on campus as it is incorporated into the campus flood model to increase the accuracy of projections on the Climate Resiliency Dashboard.



Precipitation Flooding  
2030: 10-Year Storm

Water Depth [ft]

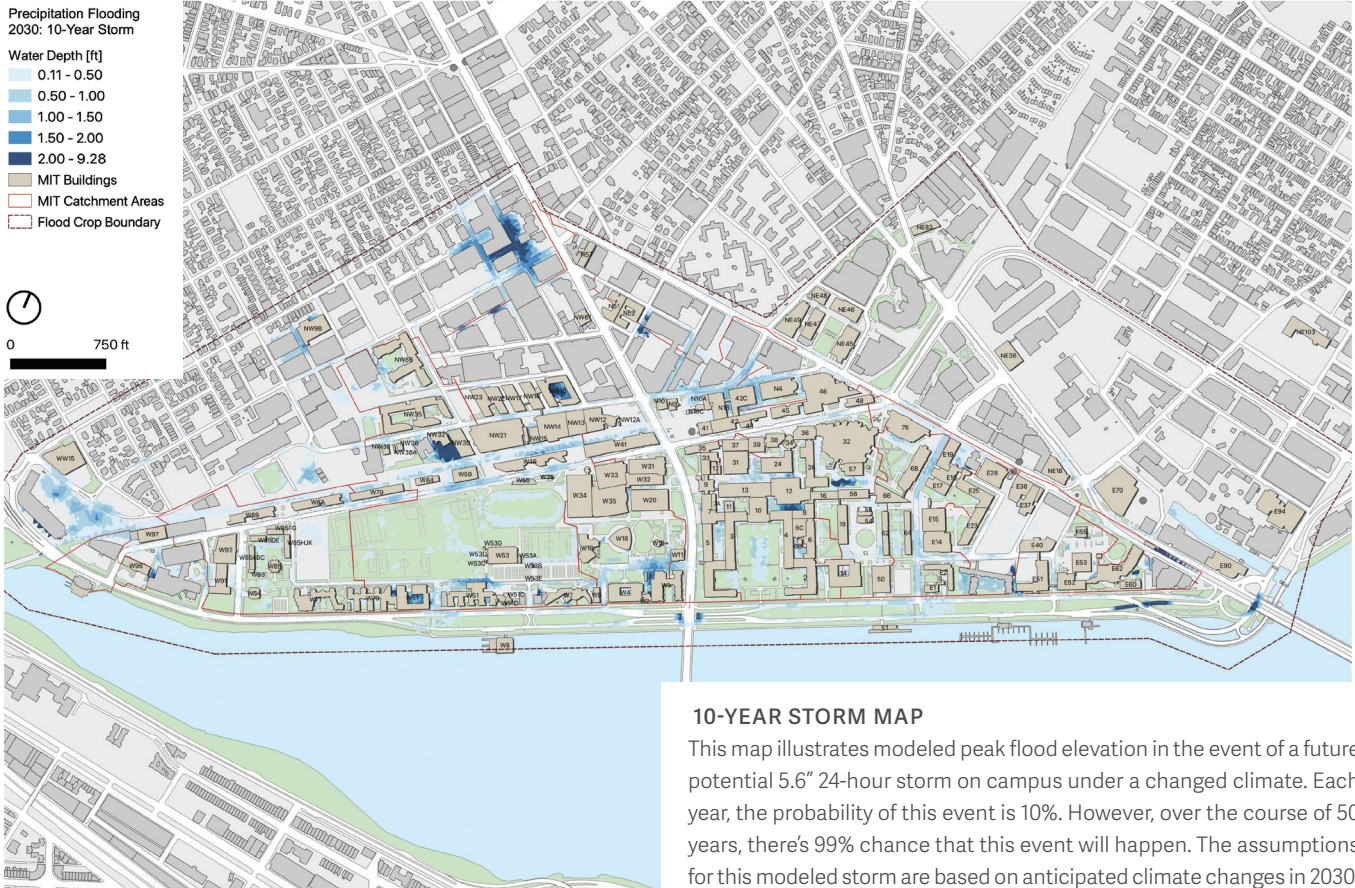
- 0.11 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 9.28

MIT Buildings

MIT Catchment Areas

Flood Crop Boundary

0 750 ft



**10-YEAR STORM MAP**

This map illustrates modeled peak flood elevation in the event of a future potential 5.6" 24-hour storm on campus under a changed climate. Each year, the probability of this event is 10%. However, over the course of 50 years, there's 99% chance that this event will happen. The assumptions for this modeled storm are based on anticipated climate changes in 2030.

MITOS initiated a first step toward development of a resiliency and adaptation roadmap by collaborating with the Office of Campus Planning and Department of Facilities to engage a consultant team from Arup Engineering with Reed Hildebrand to provide a Phase 1 Resiliency Roadmap Gap Analysis.



# HEALTHY PEOPLE

The Healthy People area of impact focuses on projects and programs that seek to activate campus systems that promote health, well-being, and environmental justice in partnership with students, staff, faculty, and community partners. In 2022, work in this area focused on partnerships to create a sustainable and equitable food system on campus, programming engaging the campus in the work of environmental justice, and systems to expand Green Building Education to all new and renovated spaces across campus.

## Green Building Education Design Package

A working partnership with Campus Construction and an external designer, MITOS built upon the LEED Green Building Education Signage that first debuted in 2020 in Site 4 (E37 and E38) by creating a design guide and templates for new building projects at MIT. The team developed an easy-to-follow design guideline, MIT Green Building Education: Signage Design and Templates, for any new project on campus that seeks to educate occupants on the unique sustainability features of those buildings. The package provides clear guidelines for project teams to implement consistent and flexible educational signage that meets the requirements of building certifications, such as LEED and Fitwel. These signage guidelines are flexible enough to allow for different spatial constraints and unique qualities of each project and are consistent enough to be recognizable across MIT buildings as a “common language.”

## Expanding Sustainable Food Programming

As part of *Fast Forward*, Institute leadership called for establishing quantitative goals in calendar year 2022 related to food, water, and waste systems that advance MIT’s commitment to climate. Related to food, the Division of Student Life (DSL) has long worked with dining vendors, MITOS, and other campus partners to advance a more sustainable, affordable, and equitable food system. Collaborative efforts with MITOS ranged from increasing access to low-cost groceries on and around campus to



## active commutes

let's choose sustainable transportation



### WHAT THE CAMPUS IS DOING

A sustainable transportation system fosters community well-being while benefiting the environment. MIT is committed to making public transportation accessible and affordable and promoting safe routes for biking and walking in order to minimize pollution and congestion. Through the program Access MIT, the Institute provides research-based incentives to encourage employees to commute sustainably.

### WHAT THE BUILDING IS DOING

This building was designed to support sustainable commutes. For cyclists and other active commuters, there are showers and changing facilities located on the third floor, as well as ample indoor and outdoor bicycle parking. The Kendall Square METRA station, bike share locations, shuttles, and the Charles River walk/bike paths are located nearby, providing easy access to and from the building.

### WHAT YOU CAN DO

Want to get to, from, and around MIT sustainably? Remember, little changes add up and help to lower your carbon footprint. Here are some tips:

- **Switch up your commute.** See if there are ways to walk, bike, or take public transit to your destination.
- **Consider sharing a ride** with a coworker or neighbor.
- **Stay up to date** on MIT's sustainable commuting benefits, like Access MIT.

## ACTIVE COMMUTES POSTER

The poster is part of the suite of Green Building Education signs in Building E38.



sourcing sustainable coffee for campus cafes, to convening a group of stakeholders to frame a quantitative climate goal related to food. This past year also saw the launch of the food-startup incubator in the Stratton Student Center. MITOS was an essential partner in the debut of The Launchpad, a nonprofit food business incubator created with CommonWealth Kitchen to offer the MIT community more variety and healthy food options while also the goal to support diverse, local start-up food businesses and to create a more just, equitable, and sustainable food economy. With the leadership of MITOS, MIT also began collaborating with local businesses to provide students access to lower-cost and at-cost groceries and food products, working with the Daily Table, a new nonprofit community grocer in Central Square to begin accepting TechCASH and recently worked with the committee to host an inter-active food tour for students.











# MATERIAL LIFECYCLES

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Material lifecycle efforts led by MITOS focus on both the beginning and ending impacts of materials, from procurement to waste. This past year saw a continued effort to design out waste from MIT with expanding waste pilots designed to collect data and influence behavior as well as the launch of efforts toward a more centralized procurement process to eliminate department waste at the outset.

## Waste Pilots

In 2022, MITOS continued work with partners across campus to conduct a series of waste behavior studies to identify waste stream contamination (the wrong item going in the wrong bin) and overall data around specific types of waste like food, plastics, and polystyrene. Data from these audits is used to design programming, signage, and additional interventions to design out waste from MIT's campus. The data behind these studies drove decisions for behavioral signage, directing users to choose the correct bin, as well as centralized bin systems to decrease stream contamination and increase recycling rates. These newly tested practices from campus academic and office buildings was also tested in an undergraduate dorm, Random Hall. The Random Hall food waste collection pilot effectively established systems to increase the diversion of food waste away from landfills to enable re-capture of energy from Random Hall's food waste. This pilot will expand to a year-long program in the new 2022 academic year throughout Random Hall and help to inform methods for designing out food waste from other campus dorms.

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**This waste pilot expanded to a year-long program for the 2022-23 academic year in Random Hall to help inform methods for designing out food waste from other campus dorms.**



# THRIVING NETWORKS

MITOS recognizes that solving for sustainability and climate change must take place across the scales of the campus, city, state, country, and beyond. With this ethos, MITOS staff participate in several thriving networks to advance and inform our work.

## City of Cambridge

In 2022, MITOS continued to serve as an MIT representative on several city committees including: the Cambridge Compact for a Sustainable Future, the City of Cambridge Climate Change Preparedness and Resilience Plan, the Net-Zero Task Force, the City of Cambridge Climate Resilience Zoning Task Force, and the Recycling Committee.

## International Sustainable Campus Network

MIT is an active member of the International Sustainable Campus Network (ISCN), working with peers across the globe to devise and open-source solutions for campus sustainability. ISCN is a global forum supporting leading colleges, universities, and corporate campuses in the exchange of information, ideas, and best practices for achieving sustainable campus operations and integrating sustainability in research and teaching. MITOS Director Julie Newman was a founding member of the network and now sits on the Advisory Board which continues to provide input into the direction of the organization.

## Boston Green Ribbon Commission Higher Ed Working Groups

MITOS team members served on three separate working groups as part of the Boston Green Ribbon Commission Higher Ed Working Groups. The goal of the working groups is to build upon the significant accomplishments of the Higher Ed Working Group of the past decade. Team members share their subject matter expertise in these groups to advance the goals of transferring knowledge to other sectors to accelerate change for the equitable implementation of climate mitigation and resilience.

## MITOS PARTNERS BEYOND MIT



City of Cambridge



International Sustainable Campus Network



Ivy Plus Sustainability Working Group



Boston Green Ribbon Commission Higher Ed Working Groups

## Ivy Plus Sustainability Working Group

The Ivy Plus Sustainability Working Group is committed to the ongoing exchange of campus sustainability solutions common to all our campuses. Participants agreed that a unified effort on the part of the leading institutions of higher education to respond to one of the most pressing issues of our time, climate change, is essential. The Ivy Plus group is faced with the opportunity and responsibility to develop cutting edge model operations, engage top scholars, and educate the future leaders on issues of sustainable development and climate change. The group was initially convened in 2007 and continues to meet on an annual basis at one of the participating institutions.



# GOVERNANCE AND COMMITTEE INVOLVEMENT

Historically, planning and implementation work depicted in our updates has been managed and informed via a multi stakeholder committee process. With the launch of *Fast Forward* and organization around campus level commitments, MITOS has been further involved with teams and committees working toward these goals, with staff represented on each of the 14 teams. Additionally, MITOS staff participate on several MIT wide committees to inform and integrate sustainability commitments across the campus.

## MITOS Sustainability Committees

The Office was positioned to launch a series of new committees to advance the commitments outlined in *Fast Forward* MIT while continuing to manage current committees. Below are the committees and their primary objectives.

- **CLIMATE RESILIENCY COMMITTEE** To assess, model, plan and operationalize a climate resilient MIT.
- **CARBON FOOTPRINT WORKING GROUP** To advise on how best to continuously decarbonize campus operations, begin developing a roadmap to decarbonization by 2050, and provide oversight and ideas regarding initial priority commitments.
- **TRAVEL OFFSET COMMITTEE** To assist and inform the development of a travel offset program to account for Scope 3 emissions associated with business travel.
- **NET-ZERO 2026 COMMITTEE** To debate and inform an offsite, multi-sector portfolio approach to advance MIT's net-zero emissions by 2026 goal.
- **SAFE AND SUSTAINABLE LABS TASK FORCE** To evaluate current practices and develop a new Safe and Sustainable Labs Program that integrates and institutionalizes compliance, safety, and sustainability as a best practice.
- **SUSTAINABILITY COMMUNICATIONS WORKING GROUP** To develop and align unified messaging in support of MIT's climate and sustainability goals.

## Campus as a Test Bed

MITOS is a formative partner in leveraging the campus as a test bed to advance understanding of how to achieve, build, manage, and demonstrate a sustainable campus. This is one of the most essential areas for demonstration and learning is how to become a zero emissions campus. MITOS manages a methodology that brings together faculty, researchers, and students with operational experts to inform current and future practices. Examples of this work range from course development and student projects to research to data collection to merely finding space on campus for researchers to test new innovations on the campus. The new climate action plan builds upon this importance and precedence set by this work stating that, "Our campus will continue to be a 'test bed for change' as we navigate a path towards net-zero."

## Course: Solving for Carbon Neutrality at MIT

With a focus on designing solution scenarios for MIT for the short and long term, Solving for Carbon Neutrality at MIT, led by instructors Director of Sustainability and DUSP lecturer Julie Newman, and Professor of Mechanical Engineering Tim Gutowski, engages students in project-based learning leveraging the campus as a test bed for ideas. The Spring 2022 cohort of students crafted plans to reach zero direct emissions by 2050 and shared back with the members of the Vice President for Campus Services and Stewardship teams to inform future mitigation efforts.



# MEASURING IMPACT

## Sustainability DataPool

MITOS's Sustainability DataPool is as a collaborative project that provides the MIT community with access to campus sustainability data and visualizations. Using real time data, the tool empowers MIT community members by providing them the data they need to understand current performance and inform innovative sustainability solutions and ideas. With the launch of *Fast Forward*, the collection and display of this data is essential inform both the work of MIT and educate and empower the MIT community in devising ideas to help reach the goals of the climate action plan. With calls to set new impact goals as well as to expand the accounting of MIT's greenhouse gas emissions to off campus locations, capturing and communicating data is essential to the plan.

## STARS

In February 2022, MIT earned a STARS Gold rating, for the second time, in recognition of sustainability and climate action achievements from the Association for the Advancement of Sustainability in Higher Education (AASHE). STARS, the Sustainability Tracking, Assessment & Rating System, measures sustainability in all aspects of higher education, facilitating information sharing across institutions. MITOS led the work in crafting the report connecting over 50 campus stakeholders. Together this group compiled 1,200 data points in six data categories and 77 sustainability topics.

## Communicating Impact

Communications and outreach are essential tools for engaging the broader MIT community in the work and mission of MITOS and MIT's climate action plan. This necessity of communications and outreach by the Office has proven even more necessary with the launch of the new climate action plan and the multifaceted work needed to reach its goals. Communications channels provided updates, background, and explanations for the work done to meet these campus commitments. Digital, print, and video channels are all utilized in this work.

## DATA HIGHLIGHT



# 1,200

data points compiled in six data categories and 77 sustainability topics by over 50 campus stakeholders

## Sustainability Connect

Each year, the Office of Sustainability brings the community together for its annual conference, Sustainability Connect. In recent years hosted virtually due to the pandemic, the event brought together staff, students, faculty, and researchers to learn more and contribute to MIT's campus climate commitments and goals as outlined in *Fast Forward*. Attendees listened to a series of lightning style talks from faculty, staff, and researchers engaged in finding unique solutions to the challenges outlined in the plan and then invited all to join breakout rooms to discuss feedback and further ideas. The event served to expand the reach of the Office and engage a diverse group of MIT community members in the work of the climate action plan.

## Sustainability Digest

The MITOS Digest engages and inform a large audience through its newsletter which is delivered monthly to a broad range of subscribers. With an audience of more than 1,000 subscribers, the MITOS Digest connects the audience with progress updates on *Fast Forward*, news, research, photos, and updates on sustainability projects centered around the MITOS areas of impact to engage individuals and groups in solving global issues at the local level.





## LOOKING AHEAD

The launch of *Fast Forward* provided an exciting opportunity for MITOS to reflect and renew focus on fulfilling its ever-expanding mission. As progress is made on the campus commitments in *Fast Forward*, MITOS continues to expand its scope of impact through leadership and partnership. Looking forward to the next year, MITOS has expanded its team to include two additional project managers focus on climate action planning at the DLCI level and designing out waste in support of the mission of the office and *Fast Forward* goals. The Office's goals for the upcoming year are rooted in *Fast Forward* and aim to grow from there:

- **ADVANCE FAST FORWARD** A Climate Plan for the Next Decade, continuing to take the lead on strategizing and implementing 14 campus commitments
- **SUPPORT** efforts across campus to establish DLCI-level climate action plans
- **SOLVE** for designing out waste from MIT in support of campus impact goals
- **ADVANCE** on-going efforts to reduce MIT's greenhouse gas emissions and advance net-zero and zero emissions goals.
- **INFORM AND MANAGE** the Safe and Sustainable Labs emerging program
- **CONTINUE** modeling and planning for a climate resilient MIT, building upon work in heat and porosity
- **WORK** across teams to establish waste, water, and food goals to inform and advance MIT's commitment to climate
- **EXPAND** data collection and accessibility of data sources and visualizations
- **SUPPORT** the development of a sustainable and equitable food system
- **CONTINUE** to expand the reach of communications to engage the MIT community in devising solutions to support the work of *Fast Forward*



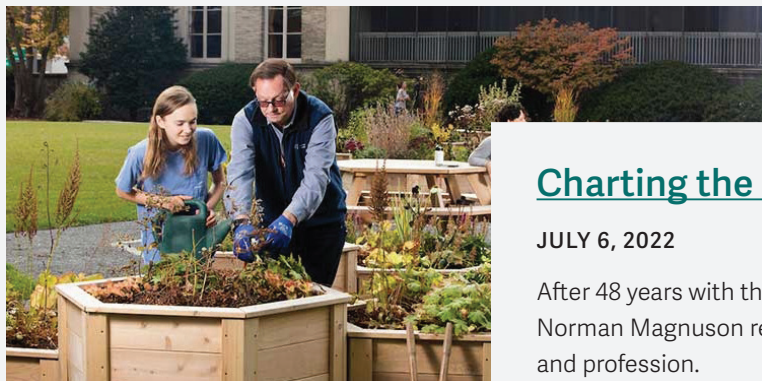
# SUSTAINABILITY MIT



## Progress toward a sustainable campus food system

FEBRUARY 25, 2022

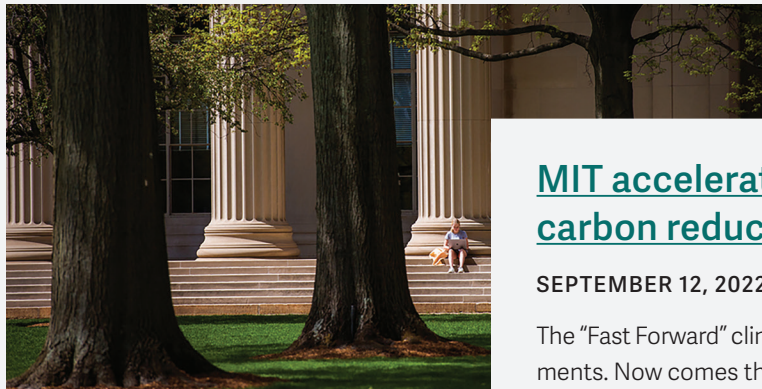
Efforts ramp up to include the launch of new partnerships, support for local food industries, and a food-startup incubator in the Stratton Student Center.



## Charting the landscape at MIT

JULY 6, 2022

After 48 years with the Institute, Manager of Grounds Services Norman Magnuson reflects on his role in a changing campus and profession.



## MIT accelerates efforts on path to carbon reduction goals

SEPTEMBER 12, 2022

The "Fast Forward" climate action plan laid out ambitious commitments. Now comes the harder part: making them happen.



## 3Q: How MIT is working to reduce carbon emissions on our campus

OCTOBER 3, 2022

Vice President for Campus Services and Stewardship Joe Higgins describes how MIT is tackling its Fast Forward campus carbon-reduction goals









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