



HARVARD UNIVERSITY

2016

Town Gown Report

for the
City of Cambridge

Submitted by:
Harvard Planning Office



Cover Image: Harvard Yard, HPPM

Table of Contents

I. EXISTING CONDITIONS	
A. Faculty and Staff	1
B. Students and Postdoctoral Scholars	2
C. Student Residences.....	3
D. Facilities and Land Owned.....	4
E. Real Estate Leased	7
F. Payments to City of Cambridge	8
G. Institutional Shuttle Information	9
II. FUTURE PLANS	
A. Capital Projects.....	15
1. Project Map	30
2. Project List.....	31
B. Transportation.....	32
C. Antenna Installations.....	35
D. Campus Tree Resources	36
E. Sustainability.....	38
III. RELATIONSHIP WITH CAMBRIDGE PUBLIC SCHOOLS.....	44
IV. INSTITUTION SPECIFIC INFORMATION REQUESTS	46

I. EXISTING CONDITIONS

A. FACULTY AND STAFF ¹

	2012	2013	2014	2015	2016
Cambridge Based Staff					
Head Count	11,854	12,173	12,358	12,343	12,695
FTEs	9,507	9,549	9,744	10,160	10,434
Cambridge Based Faculty					
Head Count	1,823	1,938	2,010	2,072	2,102
FTEs	1,660	1,749	1,778	1,836	1,870
Number of Cambridge Residents Employed at Cambridge Facilities					
	3,903	4,039	4,088	3,982	4,146
Number of Cambridge Residents Employed at Boston Facilities					
	747	815	768	754	806

Ten-year projection

Harvard has not undertaken University-wide projections for faculty and staff counts.

¹ Employment figures are as of May 30, 2016 and June 30, 2016 and includes TA's, graduate students, postdoctoral scholars, interns and other staff.

B. STUDENTS AND POSTDOCTORAL SCHOLARS ²

	2012	2013	2014	2015	2016
Total Undergraduate Degree Students	7,245	7,256	7,265	7,237	7,333
Day	6,657	6,659	6,671	6,636	6,634
Evening	[588]	[597]	[594]	[601]	[699]
Full Time	6,906 [254]	6,899 [248]	6,906 [247]	6,874 [244]	6,893 [259]
Part Time	339 [334]	357 [349]	359 [347]	363 [357]	440 [440]
Total Graduate Degree Students	10,163	10,264	10,205	10,254	10,487
Day	8,868	8,983	8,999	8,967	9,015
Evening	[1,295]	[1,281]	[1,206]	[1,287]	[1,472]
Full Time	8,823 [87]	9,139 [264]	9,128 [230]	9,131 [262]	9,200 [290]
Part Time	1,340 [1,208]	1,125 [1,017]	1,077 [976]	1,123 [1,025]	1,287 [1,182]
Total Non-degree Students	6,350	6,675	6,887	7,336	7,727
Day	313	274	331	362	349
Evening	[6,037]	[6,401]	[6,556]	[6,974]	[7,378]
Total Number of Students in Cambridge	23,758	24,259	24,357	24,827	25,547
Total Number of Postdoctoral Scholars ³	1,012	1,030	990	1,063	1,193

Numbers in brackets represent students at the Extension School and are a subset of the total number of Full and Part Time students indicated.

Ten-year projection

As is the case with faculty and staff counts, Harvard has not undertaken University-wide projections of future student population.

² Counts as of October 15, 2015 for 2016. Includes all non-degree students enrolled in day or evening classes, such as persons taking classes at Harvard Extension School.

³ Postdoctoral scholars are considered staff, therefore they are included in staff totals reported in Section A.

C. STUDENT RESIDENCES

	2012	2013	2014	2015	2016
Number of Undergraduate Students Residing in Cambridge					
In dormitories	6,545	6,113 ⁴	6,200	6,164	6,368
With cars garaged in Cambridge	15	8	7	10	5
In Harvard affiliate housing ⁵	4	440	398	386	304
In non-affiliate housing	142	128	99	92	68
Number of Graduate Students Residing in Cambridge					
In dormitories	1,181	1,054	1,259	1,162	1,390
With cars garaged in Cambridge	172	134	117	152	139
In Harvard affiliate housing	1,625	1,574	1,551	1,437	1,367
In non-affiliate housing	3,437	3,749	3,476	3,767	3,326

Ten-year projection

Harvard has not undertaken University-wide projections of future student residences.

⁴ Beginning in 2013, the number of students residing in dormitories is reduced due to the construction of House Renewal projects that temporarily take some dormitory beds off-line.

⁵ Beginning in 2013, the number of undergraduate students residing in Harvard affiliate housing includes 10-20 DeWolfe Street and students temporarily residing in “swing housing” to accommodate the House Renewal program.

D. FACILITIES AND LAND OWNED

	2012	2013	2014	2015	2016
Acres (Tax Exempt) ⁶	190.4	190.4	190.4	192.7	191.8
Acres (Taxable) ⁶	23.1	23.1	23.1	22.4	22.1
Number of Buildings	391	391	392 ⁷	392	391 ⁸
Dormitories					
Number of Buildings	74	74	74	75	75
Number of Beds	8,258	8,222	8,160	8,238	7,954
Size of Buildings (GSF)	15.9M	15.9M	15.9M	16.0M	16.0M
Assembly/ Museum	972,554	972,554	976,088	1,084,879 ⁹	1,026,278 ¹⁰
Athletic	210,780	210,780	210,780	210,780	210,780
Classroom	877,524	877,524	877,524	877,524	877,524
Commercial	282,045	185,453	185,453	185,453	185,453
Healthcare	77,155	77,155	77,155	77,155	77,155
Laboratory	2,587,479	2,587,479	2,587,479	2,587,479	2,587,479
Library	1,091,084	1,091,084	1,100,839 ¹¹	1,097,644	1,097,644
Office	3,096,323	3,121,737	3,085,661 ¹²	3,087,995	3,164,256 ¹³
Residential	5,606,735	5,766,765 ¹⁴	5,766,765	5,772,934	5,908,866 ¹⁵
Support	1,104,054	1,071,830	1,071,830	1,071,830	915,070 ¹⁵

6 Starting in 2012 the number reported for taxable and tax exempt land reflects a more accurate accounting of land that was partially taxable as of 7/1/2012.

7 Increase in building count reflects 32 Quincy Street returning to service.

8 Decrease reflects the demolition of a small garage.

9 Increase reflects new area of 32 Quincy Street.

10 Decrease reflects re-classification of former Sackler Museum building as office space.

11 Increase reflects Tozzer Anthropology Building renovation and addition.

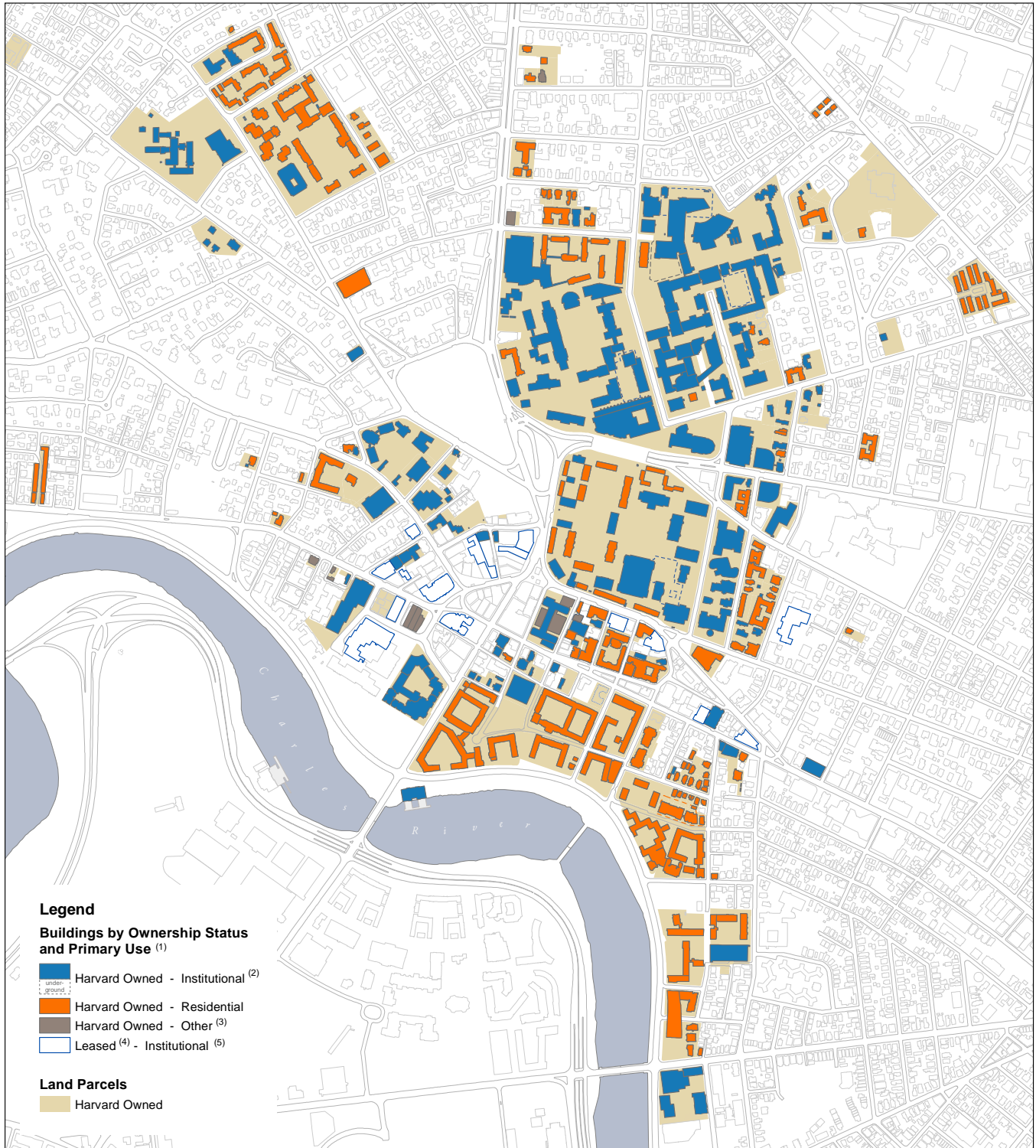
12 Reduction reflects partial Pound Hall demolition.

13 Increase reflects re-classification of former Sackler Museum building and 40 and 42 Kirkland Street as office space.

14 Change in area reflects the conversion of 1201 Massachusetts Avenue to dormitory use.

15 Change in area due to correction of previous space data.

Real Estate Owned and Leased by Harvard University



Notes:

1. Primary Use reflects predominant building use
2. The Rowland Institute located at 100 Edwin Land Boulevard is located outside the map coverage area
3. Includes real estate that is vacant or leased to third party
4. Buildings may be leased by Harvard in whole or in part
5. The following buildings leased by Harvard for institutional use are located outside the map coverage area:
 - 155 Fawcett Street
 - 625 Massachusetts Avenue

Parking Facilities

Harvard University owns and maintains 4,576 non-commercial parking spaces in the City of Cambridge. These spaces constitute the University's parking inventory and are used to support University operations and accommodate faculty, staff, student, and visitor parking. The inventory is updated and approved each December as part of Harvard's annual PTDM Progress Report.

Housing *(This table does not include information about dormitories.)*

	2012	2013	2014	2015	2016
Affiliate Housing - Tax Exempt					
Number of Units:	1,043	1,043	1,037	1,037	1,036 ¹⁶
Number of Buildings:	12	12	12	12	12
Affiliate Housing - Taxable					
Number of Units:	891	892	892	892	889 ¹⁶
Number of Buildings:	55	55	55	55	54
Other Housing - Tax Exempt					
Number of Units:	None	None	None	None	None
Number of Buildings:	None	None	None	None	None
Other Housing - Taxable					
Number of Units:	None	None	None	None	None
Number of Buildings:	None	None	None	None	None

Property Transfers

Cambridge properties purchased since filing previous Town Gown Report:

None

Cambridge properties sold since filing previous Town Gown Report:

None

Planned dispositions or acquisitions:

None

¹⁶ The 2016 decrease of four units reflects the conversion of 1 unit at Peabody Terrace for Graduate Commons common space programming (tax-exempt) and the transfer of 3 units at 101-103 Plympton St. to FAS (taxable).

E. REAL ESTATE LEASED

Real Estate Leased by Harvard	Sq Feet	Tenant	Use
One Bow Street	23,490	FAS/JCHS	Office
One Brattle Square	40,599	HKS/DCE/FAS	Office
One Story Street	6,125	DCE	Classroom
10 Ware Street	1,738	HUIT	Office
104 Mt. Auburn Street	24,638	FAS	Office
114 Mt. Auburn Street	65,107	CADM, HKS	Office Healthcare
125 Mt. Auburn Street	36,564	HLS	Office
1100 Massachusetts Avenue	17,989	DCE	Office
1280 Massachusetts Avenue	10,125	FAS	Office
1408-1414 Massachusetts Avenue	50,000	FAS	Office
1430 Massachusetts Avenue	3,102	FAS	Office
155 Fawcett Street	37,500	FAS/ART	Warehouse
20 University Road	32,086	GSE	Office
25 Mt. Auburn Street	7,732	LASPAU	Office
44R Brattle Street	8,417	CADM	Office
50 Church Street	31,975	GSE/HUIT	Office
625 Massachusetts Avenue	35,295	FAS	Office
TOTAL	432,482		

F. PAYMENTS TO CITY OF CAMBRIDGE

	2012	2013	2014	2015	2016
Total Payments	\$14,216,649	\$15,285,524	\$16,140,324	\$16,858,585	\$18,472,321
Real Estate Taxes Paid	\$5,336,783	\$5,662,893	\$5,829,731	\$5,582,340	\$5,672,860
Payment in Lieu of Taxes (PILOT)	\$2,783,151	\$2,845,406	\$2,968,227	\$3,646,380	\$3,850,071
Water & Sewer Fees Paid	\$5,174,472	\$4,919,274	\$4,623,286	\$5,425,369 ¹⁷	\$5,078,739
Other Fees & Permits Paid ¹⁸	\$922,243	\$1,857,951	\$2,719,080	\$2,204,496	\$3,870,651

Ten-year projection:

In 2005 Harvard University and the City of Cambridge renewed the PILOT agreement for a fifty-year period with annual escalators.

¹⁷ Increase includes abatements that expired in FY15.

¹⁸ Amounts previously reported for years 2013 – 2015 have been revised to include building permit and other construction related fees based on available permit data. The amount reported in 2016 does not include all building permit and other construction related fees paid by Harvard to the City of Cambridge.

G. INSTITUTIONAL SHUTTLE INFORMATION

The Harvard Shuttle, operated by Harvard Transit, offers a number of safe, reliable and convenient shuttle options across Harvard's Cambridge and Allston campuses. Harvard Transit continually tracks ridership on all of its routes in order to maximize efficiency and align ridership with the size of shuttle vehicles used, and the frequency of service during different times of the day.

Harvard's Shuttle fleet includes seven 35-foot buses and five 29-foot buses, each with a capacity of 37 passengers. During the academic year, two buses provide service for the River Houses area; three buses serve the Radcliffe Quad area; and two buses operate between Cambridge and Allston. A new shuttle service between Harvard Square and Barry's Corner in Allston began operation in December 2015. In the summer, limited weekday Shuttle service is provided on the Allston Express route. Additionally, Harvard Transit's Van fleet includes five, ten-seat passenger vans equipped with two wheelchair spaces. On weekdays, two of the vans run from 7:30 am–7:00 pm; on weekends the vans run from 12:00 pm–7:00 pm. These vans provide service to individuals with mobility impairments or medical conditions on an as-needed basis. On weeknights, an evening van service is designed to transport faculty, staff and students safely around campus as a supplement to the shuttle bus system. The service operates between 7:00 pm and 3:00 am, seven days a week throughout the academic year and 7:00 pm–12:30 am during the summer.

All of the shuttle vehicles operate on B-20 biodiesel. Using biodiesel is considered a best practice in the industry and has reduced emissions by 15 percent. On an annual basis, emissions are reduced by approximately 96,725 lbs per bus fleet and 43,091 lbs per van fleet. In addition, Shuttle schedules are very precise and do not allow for more than three minutes of idling, less than the five minutes allowed by anti-idling regulations. Harvard Transit keeps the fleet on a 7–10 year life cycle to ensure that the best technology available is being used and practices proactive maintenance on all vehicles.

Ridership data and efforts both to coordinate shuttle system with other institutions and to streamline shuttle services.

Total passenger ridership for all Harvard shuttle routes in FY2016 was approximately 870,000. Harvard Transit collaborates with the Cambridge Traffic, Parking and Transportation Department in planning University shuttle routes. Harvard also works closely with the Cambridge Department of Public Works during construction and events that may require re-routing of Harvard Shuttles.





Harvard has developed a productive working relationship with the Cambridge Police Department in dealing with the safety needs of the streets that we share and have been partners in mitigating issues such as over-crowding caused by tourist buses on Massachusetts Avenue.

The University also partners with the MASCO shuttle bus, providing financial support for this system, and sharing ShuttleTracker technology (which shows the real-time location of buses on routes). This coordination has reduced service overlap within Cambridge and eliminates the need for a dedicated Harvard shuttle traveling to the Medical Area in Boston. The M2 Cambridge-Harvard Shuttle primarily serves Harvard University Longwood students, faculty and staff. The shuttle is available to others, including members of the public, with the pre-purchase of a ticket (see: www.masco.org/directions/m2-cambridge-harvard-shuttle).

Harvard Campus Shuttle Routes



Legend

-  Mather Express
-  Quad Express
-  Allston Campus Express
-  Barry's Corner

Notes:

This map shows the four principal academic year day-time shuttle bus routes. Harvard also runs evening and weekend shuttle services that cover these same routes but on a different schedule.

Route Name	Description	Frequency	Hours of Operation
Weekday Service - Morning			
Radcliffe Quad (Stadium)	Quad, Square, River Houses, Allston Campus	30 minutes	5:30 am to 7:15 am
Quad, Square, River Houses, Allston			
Mather Express	River Houses through Square to Kirkland St.	10 minutes	7:30 am to 4:30 pm
Quad Express	Quad, Square, to Kirkland St.	10 minutes	7:30 am to 5:00 pm
Allston Campus Express	Allston Campus, Square, Mass. Ave., Oxford St., Square, Allston Campus	15 minutes	7:00 am to 4:00 pm
Barry's Corner (AM)	Square, JFK St., North Harvard St., Barry's Corner	20 minutes	7:00 am to 10:00 am
Weekday Service - Evenings			
Extended Overnight	River Houses through Square, up Garden St. to Kirkland St. to River Houses	30 minutes	7:30 pm to 4:00 am
Radcliffe Quad-Yard Express	Quad, Square, Quad (up Garden St.)	25 minutes	4:15 pm to 1:00 am
River Houses A, B, & C	River Houses through Square, up Garden St., to Kirkland St., to River Houses	35 minutes	4:15 pm to 1:00 am
Allston Campus Express	Allston Campus, Square, Mass. Ave., Oxford St., Square, Allston Campus	15 minutes	4:00 pm to 12:30 am
Barry's Corner (PM)	Square, JFK St., North Harvard St., Barry's Corner	20 minutes	4:30 pm to 7:30 pm
Weekend Service			
Crimson Campus Cruiser	River Houses through Square, up Garden St. to Kirkland St. to River Houses	35 minutes	8:30 am to 4:30 pm
1636'er	River Houses through Square, up Garden St., to Kirkland St., to River Houses	20 minutes	4:00 pm to 1:00 am
Allston Campus Weekend Express	Allston campus, Square, Quad, Square, Allston Campus	30 minutes	5:00 pm to 8:00 pm
Extended Overnight	River Houses thru Square, up Garden St., to Kirkland St., to River Houses	30 minutes	12:00 am to 5:00 am

II. FUTURE PLANS

Harvard's planning and development activities continue to be informed by several key programmatic drivers. Current objectives within these drivers will influence how the University will meet its diverse facility and space needs over the coming years.

Supporting Academic Programs and Research

Harvard continues to strengthen its core academic and research mission through projects that support cross-disciplinary research, respond to changing pedagogies and technological innovations, and foster collaborative teaching and learning. Harvard is upgrading, and in some cases re-inventing existing facilities and spaces to respond to the evolving landscape of higher education.

Innovative Learning Spaces

The recently renovated Harvard Art Museums at 32 Quincy Street includes the University Galleries (right) that are an extension of Harvard classrooms. The galleries encourage collaboration and experimentation, places where Harvard faculty are invited to use the museums' collections in new and imaginative ways. The museums work to align their collections with a range of coursework, and help faculty to select objects that advance innovative teaching and learning.



At the Science Center, the Faculty of Arts and Sciences is nearing completion of a project that will transform the Cabot Science Library from a traditional collections-based library into an innovative digital teaching and learning hub for all disciplines. The renovated library will incorporate several innovative features, including a “mobile discovery bar” where users can try out new technologies.

Housing Harvard's Affiliates

Ranging from dormitories to fully furnished apartments, the University's housing portfolio contains over 13,000 beds in 8,000 units. Harvard is continuing the system-wide renewal of its undergraduate houses and making ongoing improvements across the affiliate housing portfolio.

New Life for Old Houses

Recent housing efforts include the preservation of two historic woodframe buildings located at 101 and 111 Plympton Street. As part of the larger Winthrop House renewal project these two buildings are being comprehensively renovated to provide additional affiliate housing. The project includes raising both buildings off their sites to provide new foundations and establishing below grade connections with the larger Winthrop House renewal project.



Enhancing the Campus Experience

Recognizing that the quality of campus life is greatly enhanced by its landscape, common spaces, and cultural amenities, Harvard supports projects, programs and events that enrich the lives of students, affiliates and visitors to its campus.

ARTS FIRST

Highlighting the University's ongoing commitment to the arts, ARTS FIRST is Harvard's annual public showcase of student and faculty creativity. The event celebrates art in all forms - live performances, literary works, and the visual arts. Held over a weekend each spring, ARTS FIRST is produced by the Office for the Arts, and features nearly 100 free performances and activities for Harvard and the larger community.

Among the many highlights of the festival is the Saturday afternoon Performance Fair, which brings thousands of people to the campus for a celebration of art and community. Featuring dance, drama, music and studio art, many of the events are interactive, with "Make Art" stations

where children and adults can work with Harvard students to create works of their own. Next year's dates for ARTS FIRST are Thursday through Sunday, April 27-30, 2017, with the Performance Fair on Saturday, April 29th.



Photo: Jake Belcher

Modeling a Sustainable Campus

Harvard continues to build on its decades-long commitment to model transition to low carbon, sustainable energy systems, facilities and operations. In the face of growing impacts from a changing climate, the University is collaborating with Cambridge and other organizations to lead resiliency planning in its development activities.

Campus as Living Lab – Translating Research Into Practice

Harvard's Living Laboratory initiative brings students, faculty, and staff together to use the campus and surrounding community as a test bed to incubate exciting new ideas and pilot promising solutions to real-world challenges threatening the health of people and the planet.

The outcome will be specifically designed for sharing at local, regional, and global levels.

Students have already conducted research on how shifting electricity use times can reduce emissions; used real time temperature data and student temperature preferences to conserve energy in dormitory buildings; and developed climate change resilience strategies for the Harvard campus as part of engineering coursework.



Improving Campus Infrastructure

To support campus development and all aspects of its academic mission, Harvard is continually making improvements to critical campus infrastructure. The University's infrastructure includes communications systems and networks which support the daily activities of students, faculty and staff.

Harvard Yard Wi-Fi

As Harvard Yard has increasingly become an outdoor extension of the University's classrooms, offices, and residence halls, the need for improved Wi-Fi service in the Yard has grown.

To meet the growing demand for wireless services on campus, Harvard University Information Technology recently completed installation of a network of Wi-Fi access points throughout Harvard Yard. A total of 11 access points have been installed on light poles equipped with emergency phones. These locations already have power and data, thereby eliminating the need for additional cabling.



A. CAPITAL PROJECTS

*Projects
Recently
Completed*

9 Ash Street (Renovation)



Photo: Iwan Baan

Architect: Thomas Pfifer and Partners
Total Square Feet: 1,200 GSF (Renovation)
Programmatic Driver: Restore historic house
Green Attributes: Improved energy efficiency

The Harvard Graduate School of Design (GSD) has recently completed its renovation of 9 Ash Street, a small, one-story, single family house, designed by renowned modernist architect Philip Johnson. When Johnson was a student at the GSD in the early 1940s, he purchased this empty plot of land, which eventually became the site of the first house he designed and built, and was ultimately submitted as his graduate thesis. Johnson lived in the house while he continued his studies at the GSD.

The GSD initially prepared careful historic documentation on the building and completed preliminary repair and stabilization work, which was a much more extensive undertaking than initial assessments indicated. The GSD recently completed additional renovation to restore the building's original appearance and architectural integrity while improving its durability and functionality, working with architects Thomas Pfifer and Partners and landscape architects Reed Hildebrand. The project included in-kind replacement of the wooden "Weldtex" panels that constitute the structure's walls and privacy fence, and which had experienced significant water damage. The project scope also included reuse of all of the original bluestone paving stones in the courtyard alongside new landscaping elements, as well as reuse of some original millwork storage elements. The original clear glass wall overlooking the courtyard was also maintained in place. The project was undertaken in consultation with the Cambridge Historical Commission.

*Projects
Currently in
Construction*

Winthrop House – House Renewal
(Renovation and New Construction)



- Architect:** Beyer Blinder Belle
Total Square Feet: 166,000 GSF (renovation), 26,000 GSF (addition)
Programmatic Driver: Renew undergraduate House life
Green Attributes: Targeting LEED Gold

Harvard is currently undertaking the renewal and expansion of Winthrop House, the second full House to be renovated as part of Harvard’s House Renewal program. Located between Mill Street and Memorial Drive, Standish Hall and Gore Hall were originally constructed in 1916 as freshman dormitories; later, they were programmatically unified to become Winthrop House in 1931.

Consistent with recent House renewal projects, Harvard is undertaking a comprehensive renovation project that focuses on restoring the buildings’ historic character while updating them to contemporary requirements. The project will preserve and rehabilitate the two adjacent wood-frame buildings, 101 and 111 Plympton Street, as part of Winthrop House. This project also includes the construction of a new five-story east wing for Gore Hall at the corner of Mill and Plympton Streets. A low rise extension will provide a connection to 111 Plympton Street. The proposed addition will provide much needed residential and common space for this undergraduate residence. The new addition has been carefully designed to ensure that its massing, materials and overall expression are sympathetic to its context within the Harvard Houses National Register Historic District. The proposal for the new addition to Gore Hall received approval from the Board of Zoning Appeal.

House Renewal

Harvard has now fully completed the first three projects to renew Harvard's undergraduate Houses as part of a system-wide renewal. The House system forms one of the most distinctive and important features of a Harvard College education. In the late 1920's, President A. Lawrence Lowell envisioned a House system that would serve students of different backgrounds, resulting in learning that extended beyond the classroom. Today, more than 98 percent of Harvard College students live on campus. First-year students live in freshman dorms, located in and around Harvard Yard. The overwhelming majority of sophomores, juniors, and seniors live in one of twelve undergraduate Houses, which are located alongside the Charles River or at the Radcliffe Quad, along Garden Street.



The House Renewal program's first focus is on the original neo-Georgian Houses along the Charles River, most of which were constructed in the 1920s and 30s and have had only modest upgrades over the ensuing years. The Houses were also built at a time when building standards and the needs of the student body were very different. The intent of the House Renewal program is to preserve the historic character of these buildings and to sustain President Lowell's original vision of the Houses, while simultaneously transforming them to support a twenty first-century intergenerational learning community that meets the needs of today's students.

In 2016 the Boston Society of Architects and the Massachusetts Architectural Access Board named the completed Stone Hall, McKinlock Hall, and Dunster House projects the recipient of the William D. Smith Memorial Award for projects that successfully integrate accessibility and historic preservation. Construction at Winthrop House began in June 2016, and Lowell House will follow in 2017. The pace and sequence of House Renewal is subject to periodic review.

Harvard Kennedy School (New Construction)



Architect:	Robert A.M. Stern Architects
Total Square Feet:	91,000 GSF (new construction), 7,000 GSF (renovation)
Programmatic Driver:	Foster interaction and collaboration; improve physical campus and facility functionality
Green Attributes:	Targeting LEED Gold

Construction continues at Harvard Kennedy School (HKS) on a significant new addition that will transform the School's Cambridge campus. The project broke ground in the spring of 2015, and is scheduled for completion in late 2017. The project will provide additional and improved teaching and study space, and create a physical environment that supports greater collaboration and active learning. Physically, the project will create a more cohesive campus, improve the central courtyard as a campus amenity, and enhance circulation and pedestrian connections to Harvard Square and the Charles River.

The project, which was approved by the Cambridge Planning Board and Board of Zoning Appeal, includes infill construction at the perimeter of the campus, maintaining an open landscaped courtyard at its center. New construction will connect the campus' four existing buildings, adding approximately 91,000 gross square feet of new indoor space in four additions:

- the "Gateway Building," a two-level addition connecting the existing Taubman Building and Belfer Building at the 3rd and 4th Floors, will contain faculty offices, meeting space, and a new student lounge. A two-story opening beneath this addition will create a significantly improved and welcoming pedestrian access point to the HKS campus from Eliot Street;

- the “West Pavilion,” a four-level addition connecting the existing Taubman Building with the Rubenstein Building, will contain classrooms, meeting spaces, faculty offices, and building support spaces. This addition will also create a new pedestrian access point to the campus from the JFK Park pedestrian connector;
- the “South Pavilion,” a four-level addition connecting the existing Littauer Building and the proposed “West Pavilion.” This addition will contain classrooms, meeting spaces, a new campus kitchen and associated dining facilities, and building support space; and
- a “Winter Garden,” a glass-enclosed atrium abutting the new South Building which will serve as a year-round multi-functional space for dining, meetings and events.

In addition to construction of new infill buildings and Winter Garden, the project will raise the level of the central courtyard to generally align with the grade level of adjacent streets at key pedestrian access points (at Eliot Street beneath the proposed Gateway Building and at the west side from the JFK Park pedestrian connector). The raised courtyard will enhance the central campus green space while creating a new lower level that contains a below-grade loading facility, additional program space including a classroom and building mechanical space.

Significant progress has been made in the project construction. The structural framing is complete, and most of the windows and interior infrastructure have been installed. The tower crane was removed in late October 2016. The project is expected to be completed in winter of 2017 with an official opening in early 2018.



Richard A. and Susan F. Smith Campus Center - Façade Restoration (Renovation)



Architect:	Bruner/Cott
Total Square Feet:	N/A (building exterior)
Programmatic Driver:	Building repair and maintenance
Green Attributes:	Improved energy efficiency

Harvard University is completing a comprehensive building envelope repair project at the Richard A. and Susan F. Smith Campus Center. This project coincides with the campus center renovation project described on the following page.

The scope of the façade restoration project addresses long-term maintenance issues of the concrete and glass exterior while also restoring the visual quality of the original elevations with their colorful accents and tonal variation. The project includes the repair of cracked and spalling concrete and damaged precast concrete; the cleaning of the concrete and the aluminum spandrels and fins; and sealant replacements. The window repairs will include the replacement of solar films, the restoration of original architect Josep Lluís Sert's colored 'scale bars', and replacement of failed translucent panels.

The project received approval from the Cambridge Historical Commission. Construction on the façade restoration began in 2015 and is anticipated to be completed in fall 2018.

Richard A. and Susan F. Smith Campus Center (Renovation)



Architect:	Hopkins Architects (Design) Bruner/Cott (Executive Architect)
Total Square Feet:	95,000 GSF (renovation), 2,943 GSF (net new addition)
Programmatic Driver:	Interior Common Spaces
Green Attributes:	Targeting LEED Gold

Work is underway at the Smith Campus Center (SCC) to create a campus center that builds community with an emphasis on connectivity, transparency, and engagement with Harvard Square. The project, located primarily on the two lower floors of the building, aims to provide flexible, accessible and sustainable spaces that permit a wide range of uses such as eating, gathering, meeting, studying, performing and exhibiting the arts. The heart of the SCC will include a large, open plan interior “living room,” as a companion to the exterior “living room” of Harvard Yard. It will also establish a welcoming and vibrant entrance to Harvard University for visitors, current and prospective Harvard affiliates, and the Cambridge community. The project will maintain food services throughout the first floor of the building and will result in a transformational improvement of the public realm, with enhanced amenities and unique spaces that do not exist elsewhere in Harvard Square.

To achieve this vision for the campus center, Harvard is renovating and selectively reconstructing portions of the building. The proposed design respects original architect Josep Lluís Sert’s planning and design principles relating to connectivity, scale, massing, light, facade and roofscape. The project received approvals from the Cambridge Historical Commission, Harvard Square Advisory Committee, and Board of Zoning Appeal in 2015. Construction on the campus center renovation is anticipated to be completed in fall 2018.

Memorial Church (Renovation)



Architect:	Payette
Total Square Feet:	33,171 GSF (renovation)
Programmatic Driver:	Renew building systems, make accessibility improvements and accommodate new uses
Green Attributes:	Targeting LEED Gold

Harvard's iconic Memorial Church is undergoing a renovation that includes the installation of a new HVAC system, improved access for people with disabilities and renovated ground floor space for new programmatic uses.

Memorial Church was dedicated in 1932 as a religious worship space and memorial to Harvard soldiers, originally those who fought in World War I. Designed by Coolidge Shepley Bulfinch and Abbott of Boston, the Colonial Revival style building is a major landmark on the Harvard campus.

In addition to the major building system improvements, the project includes significant accessibility upgrades, most notably the creation of two new fully accessible entrances on the building's west and north sides. The project will also redesign and renovate space on the Church's ground floor level that is used for church staff, outreach programs and Sunday school. This renovated space will provide new offices for clergy and staff, and open areas for student and community use, including family-friendly areas.

The upgrades at Memorial Church will create a safe, comfortable and welcoming space for students, faculty, staff and the community that is accessible to all. Construction on the project began in May 2016, with the expected completion in early 2017.

Cabot Science Library (Renovation)



- Architect:** Mack Scogin and Merrill Elam
- Total Square Feet:** 28,500 GSF (renovation)
- Programmatic Driver:** Transform existing space into a collaborative learning environment
- Green Attributes:** Targeting LEED Silver

The Faculty of Arts and Sciences is redesigning key public spaces on the main floor of the Harvard Science Center. The project leverages and enhances the building's function as a campus crossroads of undergraduate life, and responds to changing learning activities, collaborative work patterns, and related social interactions of today's students. The project will also transform the Cabot Science Library from a traditional collections-based library into an innovative digital teaching and learning hub for all disciplines.

New social areas, study spaces, and food services on the main floor of the building will create an environment that fosters collaboration among students, faculty, and others utilizing the Science Center. The renovated library will incorporate several innovative features including a "mobile discovery bar" where building users can try out new technologies. The new library space will also include group study rooms, media studios, a large classroom, and collections in mathematics and sciences.

The renovated spaces will have greater openness and transparency, visually connecting to the building exterior and the adjacent Plaza space. The Science Center and Cabot Library project construction began in summer 2016 with completion anticipated in 2017.

40 Concord Avenue
(Renovation and New Construction)



- Architect:** Austin Architects
Total Square Feet: 5,793 GSF (renovation), 1,377 GSF (addition)
Programmatic Driver: Address deferred maintenance and improve accessibility
Green Attributes: Targeting LEED Gold

The Radcliffe Institute for Advanced Study is renovating 40 Concord Avenue for continued institutional use. The renovated building will house processing and office space for the Schlesinger Library. The project includes upgrades of building systems and infrastructure and the reorganization and renovation of interior spaces. The proposed scope of work triggers certain compliance requirements with the Massachusetts State Building Code and the regulations of the Massachusetts Architectural Access Board. These requirements include the creation of an independent second means of egress and modifications to make the building accessible to persons with disabilities (at present the building is not accessible).

The project includes a small addition at the south side of the building to facilitate the required improvements that will contain the required second means of egress, a new accessible entrance, accessible toilet rooms, and a lobby area at each floor of the building. A new elevator, serving all floors of the building will be installed within the existing building volume.

The renovation project at 40 Concord Avenue began in August 2016, and completion is anticipated in May 2017.

Lowell House – *House Renewal*
(Renovation)



Architect:	Kieran Timberlake
Total Square Feet:	218,000 GSF (renovation)
Programmatic Driver:	Renew undergraduate House life
Green Attributes:	Targeting LEED Gold

Harvard is planning for the renewal of Lowell House, an undergraduate dormitory built in 1930 as one of the first two purpose-built Harvard Houses. Situated in the center of the River House district, Lowell House is widely recognized by its distinctive bell tower, and is noteworthy for its two landscaped courtyards, both fully enclosed by the dormitory's brick neo-Georgian structure.

Consistent with the other House Renewal projects, the renovation of Lowell House will respect the historic building and House culture while upgrading it to support a twenty-first century living and learning environment. The project calls for a major renovation of the building, including new interior room layouts, enhanced circulation, new building systems, and significant improvements to accessibility while maintaining the historic and architectural character of the building. The lower level, formerly used as squash courts, will be repurposed to create new social and academic spaces.

The project is anticipated to begin construction in 2017.

Arthur M. Sackler Building (Renovation)



Architect:	designLAB
Total Square Feet:	52,500 GSF (renovation)
Programmatic Driver:	Address deferred maintenance and accommodate new programmatic uses
Green Attributes:	Targeting LEED Gold

The Arthur M. Sackler Building was designed by noted British architects James Stirling and Michael Wilford and opened in 1985. The building originally housed collections of the Harvard Art Museums, which were re-located to 32 Quincy Street upon completion of that building's renovation in 2014. Harvard Real Estate is planning a renovation of the Sackler Building to address deferred maintenance, improve building systems, and re-purpose the building for new academic use. The project includes the renewal of key building envelope and mechanical systems, including roof replacement and HVAC upgrades.

The building's former gallery spaces will be re-purposed to provide new program space for the Faculty of Arts and Science's History of Art and Architecture Department, the Graduate School of Design, and the arts program currently known as Arts@29. The project is planned to include new common spaces, classroom and meeting spaces, design studios, art-making space and offices.

Recognizing the Sackler Building's design significance, the character of the building's key design elements, including the entry lobby which features murals by the artist Sol LeWitt, the monumental main stair, and primary building facades will be retained and expanded upon to support new uses.

The final project scope is being finalized, and construction is expected to begin in 2017.

20 Sumner Road (Renovation and New Construction)



Architect:	Snøhetta
Total Square Feet:	4,600 GSF (renovation), 1,468 GSF (addition)
Programmatic Driver:	Pilot sustainable retrofit of residential wood-frame building
Green Attributes:	Comprehensive sustainability measures

The wood frame building at 20 Sumner Road is home to the Harvard Center for Green Buildings and Cities (CGBC), a program affiliated with the Harvard Graduate School of Design. The CGBC is a research center focused on creating and improving sustainable, high performance buildings and cities. The proposed project at 20 Sumner Road offers the opportunity to study and pilot innovative ideas for retrofitting a residential wood-frame structure, a predominant building form in the U.S., in an environmentally sustainable manner. The project establishes very unique and ambitious goals, including close to zero heating and cooling, 100% natural ventilation, 100% daylight autonomy and zero carbon emissions that will make the building a net positive energy structure. The building will feature an improved envelope, a solar chimney for ventilation, geothermal heating, and the transformation of an existing surface parking lot to greenspace with a rain garden.

In addition to the comprehensive renovation, the project includes a small rear addition to support CGBC research. The rear addition will be built partially below grade and features a green roof to visually integrate with the surrounding landscape. The addition provides an opportunity to study the sustainability strategies on new construction as well as existing buildings. This project received approvals from the Mid Cambridge Neighborhood Conservation District Commission and the Cambridge Board of Zoning Appeal.

The project is anticipated to begin construction in 2017.

Biological Laboratories (Renovation)



Architect:	Perkins +Will
Total Square Feet:	219,498 GSF (entire building)
Programmatic Driver:	Replace existing HVAC system and exhaust fans to support laboratory research space
Green Attributes:	Energy efficient equipment and energy recovery systems

The Faculty of Arts and Sciences is planning a project for the replacement of the HVAC and exhaust systems in the Biological Laboratories. Constructed in 1931, the building is one of Harvard's key teaching and research facilities for the life sciences. The building has five main HVAC systems and 150 exhaust fans that have outlived their useful lives and are unable to provide the adequate capacity and stable environment required by modern biological research labs.

The project will replace these systems with new HVAC and exhaust equipment, resulting in improved environmental conditions for teaching and research. The new systems will be more energy efficient, have the ability to better direct and control ventilation and feature energy recovery systems, all of which will combine to reduce the cost of building operation.

The project is planned to begin construction in summer 2017 with a targeted completion in 2019.

1607 - 1615 Massachusetts Avenue
(New Construction)



- Architect:** NBBJ
- Total Square Feet:** 20,925 GSF (new construction)
- Programmatic Driver:** Improve pedestrian environment, create space for HLS public service programs
- Green Attributes:** Targeting LEED Gold

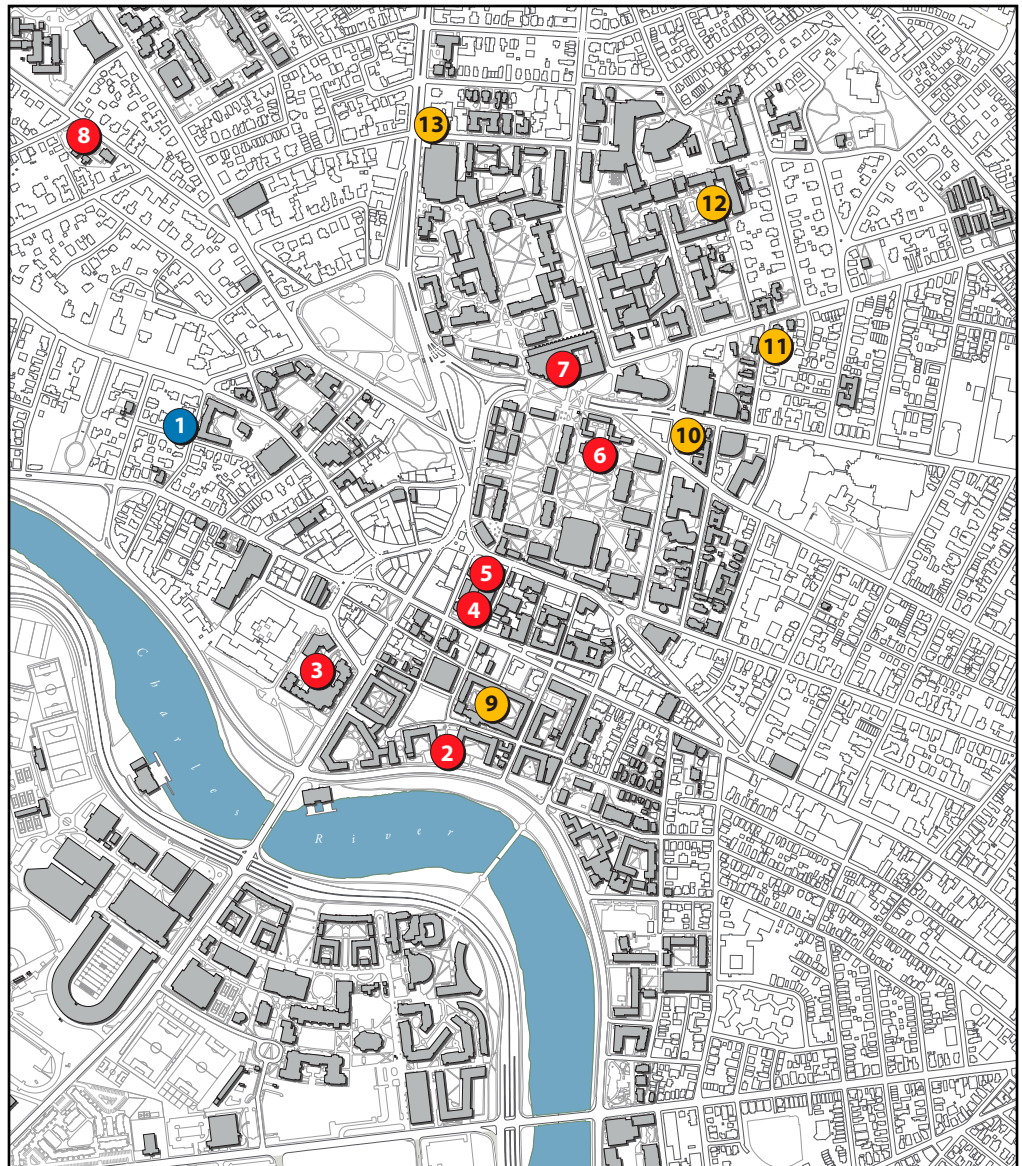
Harvard Law School is proposing a new four-story building on the corner of Massachusetts Avenue and Everett Street. The mixed use building will combine retail use on the ground floor, as requested by the community, with HLS public service law clinic programs on the upper floors. This building will replace the existing one-story commercial building that is undergoing environmental remediation.

The proposed building has been designed to strengthen the Massachusetts Avenue corridor in terms of urban design and to successfully transition between the scale and use of the academic campus and larger residences to the south and the mixed use corridor to the north. The building features welcoming entrances along Massachusetts Avenue and a building overhang that will provide an additional pedestrian amenity. Through the design process, Harvard has engaged in a dialogue with the neighbors including those in Agassiz-Baldwin, Neighborhood Nine, as well as with the City of Cambridge.

This project received approval from the Cambridge Board of Zoning Appeal. The project is anticipated to begin construction in late 2017.

1. PROJECT MAP

*Projects Completed,
in Construction,
and in Planning*



● Recently Completed
 ● Currently in Construction
 ● Projects in Planning

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> 1. 9 Ash Street | <ul style="list-style-type: none"> 2. Winthrop House 3. Harvard Kennedy School 4. Smith Campus Center (Facade restoration) 5. Smith Campus Center (Interior renovation) 6. Memorial Church 7. Cabot Science Library 8. 40 Concord Avenue | <ul style="list-style-type: none"> 9. Lowell House 10. Sackler Building 11. 20 Sumner Road 12. Biological Labs 13. 1607-1615 Massachusetts Ave. |
|---|---|--|

2. PROJECT LIST

Project	Programmatic Goal	Green Attributes
Recently Completed		
1. 9 Ash Street	Restore historic house	Improved energy efficiency
Currently in Construction		
2. Winthrop House	Renew undergraduate House life	Targeting LEED Gold
3. Harvard Kennedy School	Foster interaction and collaboration; improve physical campus and facility function	Water use reduction (35%) Optimize energy performance Enhanced commissioning Construction waste management, divert 75% from landfill Low VOC emitting adhesives, sealants, paints, coatings and flooring systems Daylighting of 75% of spaces
4. Smith Campus Center (Facade restoration)	Building repair and maintenance	Improved energy efficiency
5. Smith Campus Center (Interior renovation)	Foster collegial interaction; improve physical campus and facility function	Targeting LEED Gold
6. Memorial Church	Improve HVAC and accessibility	Targeting LEED Gold
7. Cabot Science Library	Transform existing science library and adjacent space into collaborative learning environment	Targeting LEED Silver
8. 40 Concord Avenue	Renovation and accessibility	Targeting LEED Gold
Projects in Planning		
9. Lowell House	Renew undergraduate House life	Targeting LEED Gold
10. Sackler Building	Building renewal and accommodate new program	Targeting LEED Gold
11. 20 Sumner Road	Pilot sustainable retrofit of residential wood-frame building	Exceed net zero
12. Biological Laboratories	HVAC and exhaust upgrades to support research labs	Energy efficient equipment and energy recovery systems
13. 1607-1615 Massachusetts Ave.	Improve pedestrian environment, create space for HLS public service programs	Targeting LEED Gold

B. TRANSPORTATION

Transportation Demand Management

Harvard University remains a leader among Cambridge's large employers for consistently reducing its exceptionally low Single Occupancy Vehicle (SOV) rate. According to the latest PTDM survey results, Harvard's SOV rate has continued to remain low and is now at 13.6 % for Cambridge-based employees and graduate students. Harvard's proactive Transportation Demand Management programs and incentives offered by the CommuterChoice Program continue to provide the incentive necessary to encourage commuters to leave their cars at home. CommuterChoice Program offerings include:

CommuterChoice Program

- 50% MBTA monthly pass subsidy and pre-tax savings.
- 50-75% Carpool and vanpool subsidy and partner matching.
- Preferential parking for carpools and low-emission vehicles.
- Emergency Ride Home Program for green commuters.
- Discounted annual Zipcar membership.
- Discounted annual Hubway membership.
- Bicycle Commuter Benefit.

Highlights from the past year include:

- Sold an average of over 7,500 subsidized MBTA monthly passes each month.
- 478 bicyclists were reimbursed over \$71,000 for bike commuting expenses.

Parking and Transportation Demand Management Plan

Harvard's Parking and Transportation Demand Management (PTDM) Plan, approved by the City of Cambridge in 2003, provides a baseline assessment of Harvard's parking supply and management of vehicle trips through the transportation demand measures and strategies offered by the CommuterChoice Program.

The PTDM Plan describes the transportation services and financial incentives that Harvard offers its students, staff, and other affiliates. Harvard's PTDM programs, which are administered by CommuterChoice, generate a direct positive effect on greenhouse gas emissions by reducing employee and student automobile trips to campus.

A copy of Harvard University's PTDM Plan is available at: <http://home.hppm.harvard.edu/pages/reports>. Harvard submits annual PTDM updates which are on file with the City's Community Development Department.

Cycling is recognized as an integral component of the University's transportation system and is part of Harvard's commitment to building a healthy, more sustainable campus. The University continues to make significant investments in new bicycle facilities on campus and in the collaborative planning and implementation of local and regional cycling initiatives.

New Bicycle Facilities

Over the past several years Harvard has made considerable improvements and enhancements to bike facilities on the Cambridge campus. Recent investments include:

- **Sheltered bike parking:** In recent years, Harvard has created new bike parking facilities across its campus which provide more than 400 sheltered parking spaces.
- **Bike rack improvements:** Bike racks at several locations on the Cambridge campus have been upgraded or replaced. Most recently, the Faculty of Arts and Sciences upgraded several radiator style racks in and around Harvard Yard to "U" Racks, which reflect the City of Cambridge standards for bicycle parking.
- **Bicycle repair stations:** There are a total of eight repair stations on the Cambridge campus.
- **Abandoned bike removal:** Abandoned bikes pose a challenge to bicyclists by reducing the number of available bike parking spaces in addition to causing safety and accessibility problems. This year, CommuterChoice created a consistent mechanism for abandoned bike removal and donation and has removed abandoned bikes in the Science Center Plaza, the Francis Ave Bike Shelter, and the Harvard Kennedy School.

An interactive map of all existing bike facilities on Harvard's Cambridge campus is available on the CommuterChoice website (www.commuterchoice.harvard.edu). The map provides locational information on bike routes, parking areas, and key attributes such as rack type and whether parking is sheltered.

Bike Sharing Programs

Harvard continues to collaborate closely with the cities of Cambridge and Boston to support the regional bike-sharing program, Hubway, around its main campuses. The University supports seven Cambridge stations, at Peabody Terrace, the River Houses, the Kennedy School, the Law School, the School of Engineering and Applied Sciences, Gund Hall and the Radcliffe Quad.

The Harvard Kennedy School Hubway station was moved from the school's entrance along JFK Street to a pathway off of Eliot Street leading to John F. Kennedy Park due to the current campus expansion project. The station is anticipated to be returned to its former location upon completion of the project.

Hubway provides an alternative to driving between the Cambridge, Allston, and Longwood campuses, enhances transit options for areas of the Harvard campus not as well served by existing transit facilities, and improves connections between existing public and private transit modes. The system also contributes to the University's sustainability goals by reducing inter- and intra-campus vehicle trips. Harvard's support for Hubway includes offering its affiliates a 40% discount on annual membership. As of September 2016, Harvard had over 1,100 active Hubway members.

CommuterChoice Cycling Initiatives

The University's CommuterChoice Program also sponsors several initiatives that promote cycling at Harvard. These efforts include:

- **Bike Week** – During Bike Week activities in 2016, 150 Harvard cyclists rode 7,450 miles as part of the Mass Commute Challenge, which encourages bike commuting during the week. Other events included the CommuterChoice Bike Breakfast, which attracted over 250 cyclists and featured free bike safety checks, a raffle for cycling equipment, and giveaways including Hubway memberships.
- **LOOK Campaign** – This initiative, launched in Spring 2014 by HUPD and the Harvard Transportation Department, works to remind motorists, bicyclists and pedestrians to be alert and aware of their surroundings. As part of promotional events free helmet certificates were distributed to bicyclists, and side mirror stickers designed to combat “dooring” and increase awareness of cyclists were distributed to motorists throughout the Harvard community.
- **Bicycle Safety and Repair** – CommuterChoice offers reimbursement to employees for expenses associated with taking bicycle safety or repair classes at local bike shops. It also encourages affiliates to participate in classes held through the City of Cambridge focused on urban cycling, bike repair and maintenance techniques, and women-powered cycling.
- **Discounted Helmets** – Harvard offers \$10.00 helmets for sale at the CommuterChoice office. Over 1,500 of these helmets have been sold over the past four years.
- **Bike Benefit Program** – This initiative, established in 2013, provides a benefit of up to \$240/year for the purchase, repair, maintenance or storage of a bicycle for eligible employees. The benefit has proven to be extremely popular, with 478 bicyclists being reimbursed over \$71,000 in 2015.

Planning for Cycling Networks

- Examining Harvard's existing bicycle network on the central campus and identifying areas for potential improvements.
- Collaborating with the City of Cambridge on municipal bicycle planning initiatives.
- Working with the City of Boston on the installation of bike lanes on Allston roadways to connect the Allston and Cambridge campuses and extend the bike network to the south and west.
- Advocating for the inclusion of new bike lanes on the river bridges that connect Boston and Cambridge as part of planning for MassDOT bridge renovation projects.
- Working with MassDOT to plan for new bike facilities as part of the Allston Interchange project.

C. ANTENNA INSTALLATIONS

Harvard, like all institutions of higher education in the 21st century, must continue to provide and upgrade the technological infrastructure that supports its teaching and research mission. The increasing use of wireless, web-based, and remote platforms for instruction and collaborative research across the University has led to growing demand for cellular and wireless services, and the need for improved coverage, signal strength and capacity.

Because cellular and wireless services are provided by individual service providers, each with their own communication networks and technologies, there is an ongoing need to improve coverage and expand capacity across multiple carriers. This has resulted in a growing number of antenna installations required to meet the communication needs of cellular and wireless users who are served by different carriers.

Distributed Antenna System (DAS)

Harvard continues to implement its neutral host Distributed Antenna System or DAS that will enable the University to not only provide better coverage within its buildings and immediately surrounding campus areas, but also to coordinate antenna installations and system improvements among multiple service providers.

The DAS establishes a network of strategically located antenna nodes connected to a common signal source, which accommodates multiple service providers. Each antenna node or “host site” distributes carrier signals to clusters of campus buildings, providing high quality micro level coverage to the University’s end users. To date Harvard has completed five DAS installations in Cambridge, with several other sites currently in planning.

The DAS network allows the University to limit exterior equipment installations to a smaller number of campus nodes that can serve multiple carriers. This significantly reduces the number of antenna installations than typically required to provide high-quality coverage across multiple wireless communications providers’ systems.

Minimizing Visual Impacts

Where exterior antenna and equipment installations are required, Harvard and its DAS consultants have worked to minimize their visual impacts to the greatest extent possible. As a general rule, Harvard has sought to exclude antenna installations from its most architecturally significant and iconic campus buildings. Where possible, existing building elements are used to conceal or minimize the visibility of exterior equipment. This can include mounting antennas against mechanical penthouses, chimneys, vents or other existing rooftop elements. For such installations, equipment is usually painted to match the background location as closely as possible.

In some instances, antennas and other required equipment utilize a “stealth” treatment that camouflages the equipment to better visually blend in with its surroundings. This can include creating the appearance of brick or other desired



background material on antenna panels; enclosing equipment in false chimneys, vents or other roof top elements that simulate those already present on the building; or screening the equipment in visual extensions of existing mechanical penthouses.

In meeting its regulatory obligations for antenna installations, Harvard and its consultants work with City of Cambridge planning and design staff to review proposed installations to identify appropriate locations and visual treatment options. Where applicable, installations proposed within historic districts or neighborhood conservation districts are reviewed with the staff of the Cambridge Historical Commission.

D. CAMPUS TREE RESOURCES



A key physical element of Harvard's Cambridge campus is the existence of many mature trees that contribute to a campus landscape that serves as a unique space within the urban context of Cambridge.

The types of trees on the campus and their placement help to define campus spaces through their canopy, spacial structure and visual characteristics. Different tree species in four major categories (shade, evergreen, ornamental and fruit) have historically been utilized in specific landscape typologies across the campus.

Shade Trees

Deciduous shade trees with relatively dense and overarching canopies are found throughout the campus, and are the primary trees in the major yards and greens. Shade trees on campus include American Elm, Northern Red Oak, Kentucky Coffee Tree, and Norway Maple.

Evergreen Trees

Evergreens are used as specimens, hedges, screens, or backdrops for ornamental trees, and are scattered throughout the campus, mostly along frontages of buildings or in the interstitial spaces along pedestrian paths. Very few evergreen trees are located in yards, greens, gardens, and courtyard areas. Evergreen species on campus include White Fir, Eastern Hemlock, Colorado Spruce, and Eastern Red Cedar.

Ornamental Trees

Ornamental trees are primarily planted for their color, flowers, leaves, or bark and are often planted with evergreen and shade trees as an accent. Ornamental trees are interspersed throughout the campus but occur mostly in gardens/courtyards and in interstitial spaces along routes. Ornamental trees on campus include Japanese Tree Lilac, Flowering Dogwood, Japanese Maple, Magnolia, and Serviceberry.

Fruit Trees

Fruit trees are a subset of ornamental trees found extensively throughout campus. They are usually found in short rows in gardens and courts, yards, frontages, and in interstitial spaces along pedestrian routes. When located in gardens and courtyards, they are often commingled with shade and ornamental trees. Fruit trees found on campus include Apple, Crabapple, and Pear.

Planning for Tree Resources

Harvard has long recognized the importance of preserving its tree resources as a principle physical element of the Cambridge campus. As part of its comprehensive assessment of the built and non-built components that comprise the campus, Harvard maintains a comprehensive data base of campus trees. The data base contains information on over 5,000 campus trees including key attributes such as location, species, size, and general condition. It also contains records of recent tree maintenance work such as pruning, fertilization or other treatment. The inventory provides a valuable planning tool for assessing and managing tree resources at Harvard. Information from the university's tree data base has also been shared with the City of Cambridge in support of its environmental planning efforts.

Maintaining and Enhancing Tree Resources

Harvard's Landscape Services has a team of professional arborists and horticulturists who maintain campus trees, shrubs and other plantings. Their work includes scheduled pruning and other tree maintenance, and the ongoing assessment of tree condition and health. When disease or damage require tree removal, the arborists coordinate tree replacement with appropriate schools and units and confirm that new plantings are consistent with existing landscape plans.

In addition to maintaining its existing tree resources, the University seeks to increase the number of trees on the campus as part of ongoing planning and development activities. Harvard continues to make significant improvements to the campus landscape with projects that include new tree planting. Recent projects include the new landscaped quadrangle at the Harvard Divinity School, new street trees along Divinity Avenue, site and street trees at 32 Quincy Street, the sumac grove at the Plaza, and restoration of the tree canopy in Radcliffe Yard.

In some instances it may be necessary to remove existing trees, due to damage, poor condition, or to facilitate construction projects. In such cases Harvard carefully plans for replacement trees that will contribute to the overall landscape design, and are well suited to their environment. New landscape designs seek to advance Harvard's sustainability goals by selecting tree and plant species that are more adaptive to future environmental change, foster biodiversity, further stormwater management, and contribute to the reduction of the urban heat island effect.

E. SUSTAINABILITY

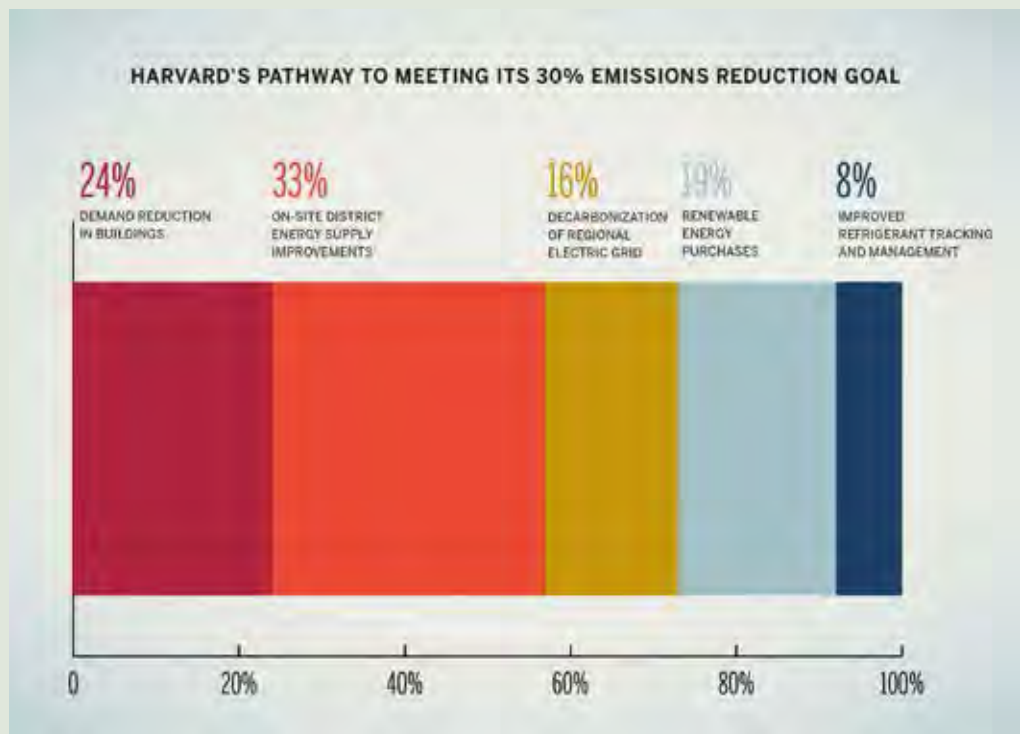
Harvard's Historic Climate Goal

Acting on climate change is part of Harvard's broader commitment to transform our campus into a low-carbon community that enhances the well-being of people and the planet. A University-wide Sustainability Plan provides the framework for this work, and is focused on translating research into action by creating practical solutions that contribute to local, regional and global progress.

In 2008, Harvard built upon its longstanding research and teaching on climate change by setting an ambitious goal to reduce absolute University-wide greenhouse gas emissions 30% by 2016, from a 2006 baseline. The target was science-based, stemming from what climate scientists said was necessary to avoid two degrees Celsius of warming, instead of what was achievable through on-campus reductions alone.

How Harvard Met its Greenhouse Gas Emissions Reduction Target

From dorms and classrooms, to offices and laboratories, students, staff, and faculty at every level of the University embraced the challenge of meeting our aggressive 30% reduction goal. Changes to energy supply and demand, including the decarbonization of the regional electric grid, resulted in a 24% absolute reduction in emissions. This progress was achieved despite the addition of over three million square feet of space. Purchased electricity from local renewable energy sources fulfilled the remaining 6% reduction needed to meet the goal. Excluding campus growth, emissions were reduced by 40%.



Modeling a Sustainable Campus

Harvard's Sustainability Plan adopted in 2014, was developed by the Office for Sustainability in partnership with faculty, students, and staff. The Plan is organized around five core topics (energy and emissions, campus operations, nature and ecosystems, health and well-being, and culture and learning) and sets clear goals, standards and commitments for moving forward. The University's Office for Sustainability reports annually on progress via a University-wide Sustainability Report available at: www.green.harvard.edu/report.

Living Laboratory – Translating Research Into Practice

Universities have a unique ability to leverage the intellectual capacity of its students and faculty to pilot innovative sustainability solutions on their campus. Harvard is strengthening its support for projects that use the campus as a test site for developing solutions that enhance well-being and mitigate climate impact, or help neighboring communities tackle these problems. The outcomes will be specifically designed for sharing at local, regional, and global levels.



In 2016, Harvard built on its living laboratory programs with two new fully funded projects:

- A multiyear **Climate Solutions Living Lab Course and Research Project** to study and design practical solutions for reducing greenhouse gas emissions at Harvard, in neighboring communities, and beyond. The Living Lab Course and Research Project is designed to bring together students from across the University in interdisciplinary teams to develop innovative approaches for reducing greenhouse gas emissions at Harvard and beyond. The strategies will be scalable for consideration and potential adoption by others seeking to reduce their emissions and improve public health.

The course was a key recommendation of a faculty advisory group convened to explore ways to meet Harvard's 2006-2016 greenhouse gas reduction goal. Findings will specifically be used to inform the University's approach to coupling off-campus emissions reduction opportunities with on-campus efforts in order to meet its ambitious, long-term climate commitment.

- This year Harvard launched the **Campus Sustainability Innovation Fund (CSIF)** to support undergraduate and graduate student research that addresses sustainability challenges, including climate and health. Grants provide students with seed funding to act on their creative ideas, including reducing energy and waste in the laboratory environment, creative solutions to stormwater clean-up, and increasing awareness of climate change through public art.

STUDENT RESEARCH

- Students in John A. Paulson School of Engineering and Applied Science Engineering Problem Solving and Design Project class evaluated climate change resiliency strategies for Harvard's campus. The team of students focused on three areas: enhancing the integrity of the campus electric grid, cooling buildings during extreme heat, and minimizing damaging from flooding.
- A team of undergraduate and graduate engineering students are using real-time temperature and humidity data sensors to inform heating strategies and decisions in Harvard's undergraduate dorms.



Research Without Boundaries

Harvard continues to build on its well-established climate and energy related research and teaching initiatives. The University supports research at the vanguard of energy and climate science—whether in engineering, law, public health, policy, design, and business, research has an unparalleled capacity to accelerate the progression from nonrenewable to renewable sources of energy. Harvard’s recent efforts include the following programs and research initiatives:

- The **Harvard Global Health Institute** and **Harvard University Center for the Environment** hosted Secretary of State John Kerry to launch a joint initiative focused on global health and climate change to inform both policies and practice in the future.
- The **Harvard Global Institute Environmental Humanities Initiative (HGI EHI)**, currently in its seed grant phase, is developing a multifaceted interdisciplinary research program will promote the cultural transformations necessary for reducing ecological devastation and anticipating an increasingly uncertain and potentially traumatic future.
- The **Harvard University Center for the Environment (HUCE)** encourages research and education about the environment and its interactions with human society. Through grants and fellowships, HUCE supports environmental research at every level, from undergraduates through senior faculty members. HUCE sponsored symposia, public lectures, and informal student convocations connect people with an interest in the environment.
- The **Center for Health and the Global Environment** at the T.H. Chan School of Public Health researches and communicates the connections between human health and our environment, and works to accelerate the changes needed to ensure a healthy, sustainable, and prosperous future.
- The **Center for Green Buildings and Cities** at the Harvard Graduate School of Design is driving the development of higher-performance buildings and new design strategies for sustainable building and planning.

HARVARD
CENTER FOR GREEN
BUILDINGS AND CITIES
- Harvard Law School’s **Environmental Law Program and Environmental Law & Policy Clinic** assist governments and non-governmental organizations and create international partnerships to overcome legal obstacles to reducing greenhouse gas emissions and incentivizing new technologies. These programs also support the efforts of New England municipalities (including Boston and Cambridge) to adapt to climate change and improve resiliency.
- The **Business and Environment Initiative** at Harvard Business School deepens business leaders’ understanding of today’s complex environmental challenges so they can be prepared to assist in developing effective solutions.

External Partnerships to Generate Shared Solutions

Confronting the global challenges of climate change and sustainability requires a response across disciplines and across sectors. In addition to collaborating with other higher education institutions, Harvard is partnering with government, non-profit organizations, and private business to identify solutions and shared opportunities that will lead to lasting change.



Harvard was a founding signatory of the City of Cambridge's Community Compact for a Sustainable Future created to leverage the intellectual and entrepreneurial capacity of the public and private sectors in Cambridge to build a healthy, livable, and sustainable future, and currently serves on the Compact's Steering Committee. The University's Office for Sustainability also co-led the creation of the Compact's first set of priorities and goals in the three-year implementation plan approved earlier this year. As part of this work, Harvard served on the Getting to Net Zero Task Force that developed the City's Net Zero Action Plan, and is now actively participating in the Action Plan's implementation.

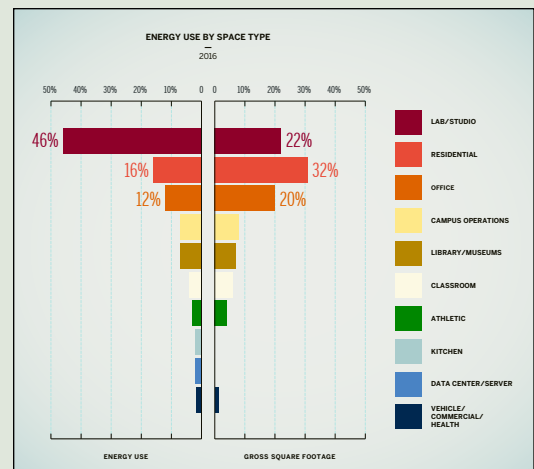
The Boston Green Ribbon Commission (GRC) was established to provide advice and counsel to the City of Boston on the design and implementation of its Climate Action Plan. Commission members are also working to align the resources of the key sectors, serving as advocates and showing their peers what progress looks like by adopting and promoting leading efficiency and clean energy practices. Harvard Executive Vice President Katie Lapp serves as Chair of the GRC's Higher Education Working Group and the Harvard Office for Sustainability coordinates the working group activities on resiliency, laboratory energy reduction, and other issues.

Acting on Climate Change

Among the many actions that Harvard has taken to address climate change are measures which contribute to achieving the University's greenhouse gas reduction goals, further a transition to a low-carbon future and strengthen the physical resiliency of the campus.

Energy Efficiency First: Harvard has pursued an energy-efficiency-first strategy in achieving emissions reductions. In total, more than 1,600 energy efficiency measures have been implemented across the University's buildings, and the \$12 million Green Revolving Fund has supported hundreds of projects since 2002, providing facilities departments with access to capital for smart, cost-effective projects.

As a result, since 2006, there has been a 10% reduction in net energy use including campus growth (23% excluding growth). Harvard has pioneered and tested a wide variety of alternative energy and building efficiency technologies including geothermal, solar hot water, chilled beams, and winter-free cooling, which are all actively used to help reduce energy demand for heating and cooling.





The Tozzer Anthropology Building, a certified LEED Gold building, features passive lighting and cooling, and an energy recovery system.

Green Buildings: University-wide Green Building Standards originally adopted in 2009 were upgraded in 2014 to reflect the latest in high-performance, energy efficient design and construction. The new Green Building Standards target LEED version 4 Gold, in addition to critical reviews of the possibility for net zero energy buildings. In 2015, Harvard reached a major milestone when it achieved 100 LEED certifications, more than any other higher education institution in the world according to the U.S. Green Building Council. As of October 2016, the University had achieved 110 certified projects, and had 26 more registered projects in the pipeline to become certified.

Investments in Infrastructure and Renewable Energy: Harvard’s Blackstone Steam Plant and chilled water plants have been upgraded to improve efficiency and reduce emissions. Switching from oil to natural gas resulted in the largest reduction of emissions on campus and the expansion of a combined heat and power system (including an existing backpressure turbine and new combustion turbine that was installed in 2015) resulted in a cut of over 20,500 MTCDE, equivalent to taking over 4,300 cars off the road.

The University has accelerated the transition to renewable energy, through power purchasing agreements (PPA) and by piloting renewable energy on-campus. In 2009, Harvard was the first university in New England to enter into a large-scale, long-term PPA, contracting for 12 megawatts of carbon-free energy from the Stetson II wind farm in Maine. On-site solar PV, solar thermal, biomass, and geothermal installations play an important role diversifying Harvard’s energy supply and serving as a testing ground to inform future action.

Planning for Resiliency: Harvard also has been actively preparing its campus to be more resilient to the impacts of climate change already being felt. The University’s faculty and operational teams are each partnering with officials from the cities of Cambridge and Boston to better understand and plan for the impacts that heat waves, extreme weather events, and sea level rise will have on the region. As part of its risk management, sustainability and emergency planning efforts, the University also is developing climate preparedness standards for construction and renovation, as well as a University-wide climate preparedness plan.



Best Practices in Sustainable Operations

Harvard continues to model best practices in sustainable campus operations to conserve resources, reduce pollution, and enhance personal well-being.



Waste Reduction: The University’s aggressive waste reduction campaigns focus on reuse first, followed by recycling and composting. Waste has dropped 36% per capita since Fiscal Year 2006 and all discards (trash, compost, recycle) was reduced by 31%. In 2014, Harvard rolled out composting in all freshman dormitories in Harvard Yard as the result of a student-led initiative.

Water: Water use campus-wide is down 19% from Fiscal Year 2006, that’s enough water to fill Blodgett Pool 196 times. The renovation of Harvard’s historic Houses and the new Harvard Art Museums includes large rainwater recapture tanks, that



capture and reuse water for toilets and irrigation. Harvard has installed eight vegetated green roofs across campus to promote biodiversity, prevent stormwater runoff, and reduce energy consumption.

Transportation: Over 83% of Harvard's Cambridge/Allston commuters use alternative transportation option. In addition, all Harvard University Police Department patrol vehicles are fuel-efficient Ford Fusion hybrids, 14 electric vehicle charging stations are available across campus, and the University continues to support 12 Hubway stations across the region. In 2014, Harvard became one of 12 universities in the country to be recognized with Gold-level Bicycle Friendly University recognition by the League of American Cyclists.

Green Cleaning: Green Seal certified green cleaning services are used on more than 14 million square feet of campus space.

Organic Landscaping: Organic landscaping practices are in use on over 90 acres of campus landscape, including Harvard Yard, and the University continues its strong commitment to incorporate sustainability goals into facility, district, and campus planning activities.

Behavior Change: Over 3,600 employees have been engaged in more than 189 offices recognized through the University's Green Office Program. 40 students are hired every year to manage peer-to-peer outreach and education campaigns in dorms and living spaces, including all Harvard University Housing properties. More than 290 student, staff and faculty campus innovators have been recognized at Harvard's Green Carpet Awards since 2010.

A Focus on Healthy Building Materials

A strong and growing body of research from Harvard faculty and other scientists has shown that some of the most effective interventions for enhancing the health, productivity and well-being of people in the built environment is through healthier building materials and products. By identifying and reducing chemicals of concern on campus we are helping to eliminate potential health risks to our vulnerable populations and contributing to the well-being of our community.

In 2016, Harvard Office for Sustainability launched the Healthy Building Materials Academy, which received a Harvard President's Administrative Innovation Fund grant, to institutionalize healthy materials purchasing. The Academy will bring the University's decentralized project management and purchasing community together with our external vendors to create a pathway for reducing the use of certain chemicals of concern in the University's capital projects. Working in partnership with Harvard faculty experts, the Academy will create a structure for better understanding the science, regulatory environment, and market opportunities for addressing chemicals of concern in the built environment.

Also in 2016, Harvard joined as a founding partner of Google's Portico platform, a first-of-its-kind building materials analysis and decision-making tool that will provide our building managers and purchasing agents with clear information on sourcing healthier materials, free of harmful chemicals.

Enhancing the Well-Being of the Campus Community

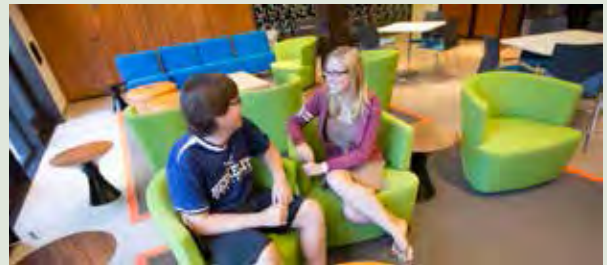
Harvard is committed to enhancing the health, productivity, and quality of life of our community through the design and maintenance of the built environment and the development of cutting-edge well-being programs.



Personal Well-Being: The Healthy Harvard and Harvard on the Move initiatives provide well-being and an active lifestyle for students, faculty, and staff across the University. More than 500 staff have participated in six-week Mindfulness at Work courses offered by Harvard.

Identification of Health Risks: University-wide *Green Building Standards* were updated in 2014 to include healthy material requirements for the disclosure of health and environmental impacts of products that are used on campus in order to help us assess opportunities to understand the community's exposure to potential toxins.

Healthy Purchasing: In November 2015, Harvard became the first university to sign a national pledge stating a preference for purchasing chemical flame retardant-free furniture. Other signatories to the pledge include Kaiser Permanente, Facebook, Blue Cross Blue Shield Massachusetts, Staples and Autodesk.



Food: Harvard is partnering with faculty to develop Sustainable and Healthful Food Standards and aims to achieve University-wide compliance by 2020. The University supports two on-campus Farmers' Markets as well as four community gardens. Many research centers, student groups, and programs are operating across campus to study and address the food system, nutrition, food law, policy, and innovation.

All of Harvard's 13 undergraduate dining halls have earned Green Restaurant Association 2 or 3-star certification for their ongoing efforts to operate efficiently and source sustainable products. Harvard Law School, Harvard University Dining Services, and Harvard Business School also donate surplus food to Food for Free where it is distributed to local families in need.

In addition, Harvard students and staff maintain two community gardens in Cambridge at the Harvard Divinity School and on Mt. Auburn Street, and Harvard Faculty Club chefs grow local food and herbs in a community garden on their property for use in meals prepared for their guests.



Creating and Nurturing the Leaders of Tomorrow

Harvard's undergraduate and graduate schools are providing their students with a deeper understanding of the complexity of future climate challenges and providing them with the necessary tools to tackle the issue wherever their lives may lead.

The University's educational programs, with over 200 courses across all disciplines focusing on aspects of energy, environment, and sustainability, prepare future leaders with the insight and foresight to safeguard our environment and build a healthier, low carbon economy in the years and decades to come.

A secondary field in energy and environment, announced in 2014, provides undergraduate students with the tools to understand the scientific, technical, economic, political, legal, historical, and ethical dimensions of complex environmental problems.

III. RELATIONSHIP WITH CAMBRIDGE PUBLIC SCHOOLS

Harvard University has dozens of programs available in Cambridge Public School (CPS) that range from curriculum based initiatives, developed in coordination with CPS leaders that engage entire grade levels, to individual internships. In addition to school-based programs, Harvard's commitment to the children and families of Cambridge extends to out-of-school time and includes being the largest provider of summer jobs for Cambridge teens with the Mayor's Summer Youth Employment Program.

2016 Highlights of Harvard's Engagement with Cambridge Public Schools

Harvard programs are available in every public school in Cambridge. The list below highlights the many programs that Harvard Supports with CPS.

- **Support for upper schools** - Harvard has curriculum-based programs supporting every CPS Upper School, impacting more than approximately 1,200 students annually. Every middle school student in the CPS upper school system participated in Harvard programs including:

Science and Engineering Showcase

Harvard's School of Engineering and Applied Sciences conducted its annual Science and Engineering Showcase. All Cambridge eighth-graders are teamed with Harvard faculty, researchers and graduate students to work together on a science project for the semester. The program culminates in showcase event on Harvard's campus in late May.

Project TEACH

Project TEACH supported CPS college awareness efforts by providing all seventh-grade students with the opportunity to visit Harvard's campus where they learn about college and academic disciplines by interacting with Harvard college students and faculty.

EcoMUVE

This curriculum developed by the Harvard Graduate School of Education is utilized as part of the CPS sixth-grade science studies and uses immersive virtual environments to teach students about ecosystems and causal patterns.

- **Cambridge-Harvard Summer Academy** – Each summer, more than 300 students participate in the Academy, which is a partnership between Cambridge Rindge and Latin School (CRLS) and the Harvard Graduate School of Education. Funded by Harvard University, this program offers high school students remedial and enrichment classes led by teaching teams that include veteran teachers as well as students from the Harvard Graduate School of Education Teacher Education Program.

- **Harvard Crimson Summer Academy** – The Harvard Crimson Summer Academy has been bringing academically gifted, economically challenged students from Cambridge and Boston to Harvard since 2004. Funded entirely by Harvard, this program provides students with rigorous academic enrichment that helps them prepare for selective four-year colleges or universities after high school graduation. Starting in ninth grade, participating students spend three consecutive summers engaging in a mix of classes, projects, field trips, and cultural activities while living on the Harvard campus from Sunday night through Friday afternoon. Participants receive year-round mentoring from Harvard students, financial support in the form of a laptop computer, free tuition, a stipend to replace lost summer earnings and a \$3,000 scholarship to the college of their choice on completing the program.
- **Cambridge students attending Harvard** – Harvard recognizes and values the strong students matriculating from CRLS and the Cambridge Public School system. During the past four years, 77 Cambridge residents were accepted at Harvard College, including 51 CRLS graduates. (For the class of 2019 who received admission letters in April of 2015, 20 Cambridge residents were admitted; 11 of whom were CRLS students.)
- **Student mentoring** – Each year, more than 6,000 program participants from Cambridge schools take part in approximately 100 mentoring and enrichment programs, visit the University’s museums, and learn from Harvard educators.
- **CRLS Marine Science Internship Program** – Paul McGuiness, CRLS teacher and Harvard Graduate School of Education alum, started this program at Harvard in 2006 to place cohorts of advanced, capable and motivated students from CRLS into research labs at Harvard in the various fields of marine science. Participants gain hands-on experience in labs under the guidance and supervision of mentors who seek to inspire and assist the next generation of marine scientists.
- **Professional Development** – The Harvard Graduate School of Education works with the Superintendent of CPS to offer a variety of professional development opportunities for educators and school administrators.

IV. INSTITUTION SPECIFIC INFORMATION REQUESTS

1. Provide an update on plans for Harvard's Allston campus and any potential or anticipated impacts on the City of Cambridge.

Institutional Projects

- **Science and Engineering Complex/114 Western Avenue/District Energy Facility**

In 2016, an Institutional Master Plan (IMP) Amendment was approved by the Boston Planning & Development Agency (formerly the BRA) for Harvard's Science and Engineering Complex. The new facility, located on the existing foundation at 130-140 Western Avenue, will include laboratory and teaching space for the School of Engineering and Applied Sciences. Renovation of the existing building at 114 Western Avenue for office and classroom use is also part of the project. Site improvements will include new streets, parking, and upgrades to bicycle facilities on Western Avenue. Work began on the foundation this summer with completion slated for 2020. The complex will be used by more than 900 undergraduates on any given day. In addition, it will be home to more than 400 SEAS graduate students, more than 450 researchers, and initially, as many as 80 faculty members.

The 2016 IMP Amendment also included an above-grade District Energy Facility that will supply hot water for heating, chilled water for cooling, and electricity for power. The building will be located just west of the existing Genzyme building and north of the on-ramp to I-90. It will come on-line in 2019 and serve the Science and Engineering Complex.

- **Pagliuca Life Lab (Harvard Business School)**

The Pagliuca Life Lab is the newest addition to innovation facilities on Western Avenue, offering shared space for life science and biotech startups. The two-story 15,000 square foot modular building was completed in 2016.

- **Klarman Hall (Harvard Business School)**

Klarman Hall will replace Burden Hall just south of the existing building. It will serve as a large-scale conference center, a performance space, and a community forum. Construction is underway with an opening expected in 2018.

- **Ruth Mulan Chu Chao Center (Harvard Business School)**

The Chao Center, a new 75,000 square foot executive education facility was completed in 2016. The building includes dining, meeting and classroom spaces as well as landscape improvements.

- **Former Charlesview Site**

Abatement and demolition was completed in 2016. Construction staging and construction worker parking will be located on the site to support proximate construction activities.

- **Greenway**

The first segment of the Greenway, “Rena Park,” will be completed in fall 2016. The open space will be linked to the Science and Engineering Complex upon the facility’s completion. Additional segments will be coordinated with phasing of the Enterprise Research Campus.

- **Harvard Stadium**

As noted in previous reports, Harvard continues to examine options for the renovation and addition to Harvard Stadium. The project is in the early phases of design, but is envisioned to include new program space, improved accessibility for visitors with disabilities, renovated visitor amenities, and repairs and restoration of key components of the existing structure.

Other Planning Activities

- **Enterprise Research Campus**

Harvard has hired a Head of Enterprise Real Estate to take the next steps in pursuing the University’s vision to create a center for innovation, collaboration, and entrepreneurship within Boston and the surrounding region. Harvard property south of Western Avenue is envisioned to become a non-institutional center for various companies, incubators, startups, and social enterprises.

2. Describe and update on planning with the Massachusetts Department of Transportation for the I-90 Interchange Project, for commuter rail and for the West Station.

- **MassDOT Allston I-90 Interchange Improvement Project**

MassDOT has assembled a task force consisting of residents, business owners, and other local and regional stakeholders with the goal to work through all details associated with the project. Harvard has a representative seat on the task force. MassDOT has refined the interchange layout to respond to comments raised by the Task Force, including a recently submitted Placemaking Study that was prepared by the Cecil Group for the City of Boston. MassDOT will file a Draft Environmental Impact Report (DEIR) next year. The DEIR will include three options: one with a viaduct east of the interchange and two with an at-grade roadway to the east of the interchange. For additional information see: <http://www.massdot.state.ma.us/highway/HighlightedProjects/AllstonI90InterchangeImprovementProject.aspx>

- **Proposed West Station**

Harvard continues to support the construction of West Station as a new intermodal center along the Framingham-Worcester branch of the MBTA commuter rail system. Harvard and the Commonwealth of Massachusetts have entered into a non-binding letter of agreement that sets forth shared principles and objectives to advance the construction of West Station as the I-90 Interchange Improvement Project advances. MassDOT will permit and design the station as part of its Allston Interchange project, which they estimate will begin construction in 2018 and will be ongoing until the end of 2020.

3. What is Harvard’s strategy in selecting tenants for retail sites? How is retail used to enhance the urban experience? Provide information on vacancies and the vacancy rate in retail properties. Particular attention should be paid to a description of the uses on the ground floor of these sites, as they relate to community concerns about maintaining an active retail environment.

Harvard shares the community’s interest in maintaining a unique retail environment in Harvard Square. When retail spaces become available, Harvard seeks tenants that will have active ground floor uses, offer goods or services that complement the retail mix in Harvard Square, and are compatible with other University uses in the building. Harvard’s ongoing commitment to maintaining a vibrant Harvard Square is illustrated by its leases with over 30 businesses in the Square, including long-time independent retailers such as the Grolier Poetry Book Shop, Leavitt & Peirce, and Harvard Bookstore.

Most of Harvard’s properties located in the commercial areas of Harvard Square (for example those across Massachusetts Avenue from Harvard Yard) contain ground floor retail uses. Harvard will continue to seek active retail or service uses on the ground floor of these buildings. Upon completion of the Smith Campus Center project, the building will provide a more engaging relationship to surrounding streets, and the retail strategy will prioritize active rather than passive ground level uses.

4. Provide more detail on the progress of the House Renewal Program, particularly where it involves converting graduate student housing, affiliate housing, or other facilities, including the Inn at Harvard, to temporary undergraduate housing. Discuss the effects of the program on housing options and choices for graduate students, as well as impacts on private housing owned by Harvard, and potential to add student beds through the program. Discuss the long term plans for such temporary facilities, after the House Renewal Program is complete.

Harvard is using existing University-owned buildings in and around Harvard Square to provide temporary accommodations to students displaced by House Renewal construction. The central hub of the “swing house” is 1201 Massachusetts Avenue, the former Inn at Harvard, which now accommodates the dining, meeting, social, academic, and a portion of the residential spaces for the House under renewal. The building at 1201 Massachusetts Avenue is particularly well suited to this role given its pre-existing layout as a hotel and its location adjacent to Harvard Yard and close to the other Harvard Houses. Several Harvard-owned residential buildings in the area also supplement 1201 Massachusetts Avenue, providing residential space for displaced students: 8 Plympton Street, 1306 Massachusetts Avenue, 65 Mt. Auburn Street, 20-20A and 22-24 Prescott Street. The Faculty Dean’s temporary accommodations are located at 8 Prescott Street. Together, these properties meet the program needs of all the Houses, even those with the largest student populations. During academic years when these buildings are not needed for swing use, they will be used as residences for other Harvard affiliates.

Harvard houses more than 98% of the undergraduate population on campus, promoting a residential campus as part of the core educational mission. With the House Renewal program, Harvard is striving to maintain the same or more bed capacity at the Houses even while accommodating the many building code upgrades that require space allocations. In recent years Harvard has added nearly 1,000 beds in Cambridge and Boston, enabling the University's capacity to house 50% of the graduate, professional, and medical students.

This increased capacity will help to mitigate the temporary reduction of up to 240 beds available to graduate students during the House Renewal program. Upon completion of the House Renewal program, the five Harvard-owned residential buildings will continue their long-standing role in providing housing to Harvard's students, faculty, and staff. The long term use of 1201 Massachusetts Avenue has not yet been determined, but it is anticipated to remain in institutional use.

See Page 17 for additional information on the House Renewal program.

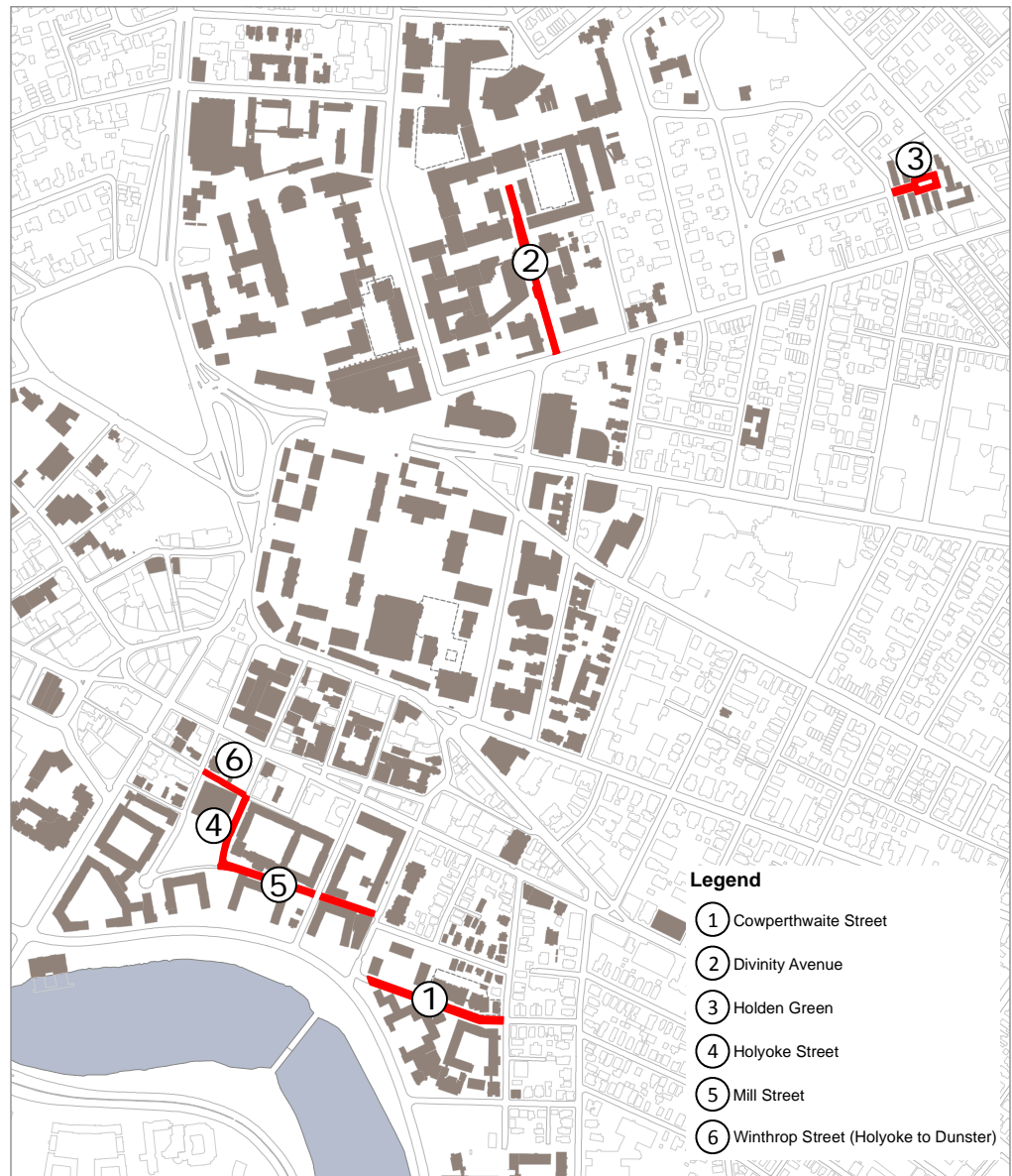
5. Provide an update on the remediation efforts for the commercial parcel at Everett Street and Massachusetts Avenue, as well as Harvard's planning for the future use of that site.

Harvard is in the final stages of environmental remediation activities at this site (1607-1615 Massachusetts Avenue). The University has proposed to build a new four-story mixed use building which would replace the existing one-story commercial building currently on the site (see Page 30). The remediation has been an iterative process that involves testing and treatment cycles. Harvard will begin clean-up under the existing building to the extent feasible this year, but the existing structure may inhibit full remediation. The impending removal of the existing building will allow access to the locations where additional remediation may be necessary.

6. Provide a map of Harvard-owned streets and sidewalks, their condition, and any planned repairs or improvements. How does Harvard coordinate management of streets and sidewalks with the Cambridge Department of Public Works?

The map below highlights the Cambridge streets and sidewalks that are owned by Harvard University.

Harvard-owned Streets



1. Cowperthwaite Street

Cowperthwaite Street is a one way private way connecting DeWolfe Street to Banks Street from west to east. Pedestrian improvements including new sidewalks and a raised crosswalk were added when 5 Cowperthwaite Street was built in 2007. As part of the Dunster House renewal, Harvard repaved the western half of Cowperthwaite Street in summer 2015, extending from DeWolfe Street up to the first pedestrian crossing near the 5 Cowperthwaite garage entry.

2. Divinity Avenue

Divinity Avenue is located on Harvard's north campus beginning at Kirkland Street and continuing north until it reaches the University Herbaria. This street and its sidewalks are in excellent condition, having been repaved in 2014. Over the last several years Harvard has undertaken repairs and improvements to the street including the installation of new brick sidewalks, street trees and lighting.

3. Holden Green

The entry drive into Harvard's affiliate apartment complex at Holden Green is a Harvard-owned private way with the same name. This cul-de-sac is fully surrounded by Harvard's residential buildings, and is located partially in Cambridge and partially in Somerville. As this street is in need of repairs, Harvard has plans to repave it over the next several years. The sidewalks are in good condition.

4. Holyoke Street

The portion of Holyoke Street between Winthrop Street and Mill Street is owned by Harvard University. This section of the street is one-way and in generally good condition. New sidewalks and curb cuts were installed at the intersection with South Street as part of the recent to reconfigure the parking area adjacent to the Malkin Athletic Center. Additional improvements will be made when the Lowell House renewal project is undertaken.

5. Mill Street

Mill Street is a one-directional private way located between Holyoke Street and Plympton Street. The streets and sidewalks are in good to fair condition. Harvard is exploring the idea of undertaking street and sidewalk improvements to Mill Street to address existing conditions and enhance pedestrian circulation in conjunction with the upcoming House Renewal projects at Winthrop and Lowell Houses as well as planned infrastructure upgrades.

6. Winthrop Street

The portion of Winthrop Street between Holyoke Street and Dunster Street is owned by Harvard University. This one-directional private way is in excellent condition. In 2014 the University repaved the street and rebuilt the sidewalks, replacing concrete with brick paving. New lighting was also installed at that time.

Harvard Facilities Maintenance Operations performs maintenance, repairs and snow removal on Harvard-owned streets, or subcontracts out this work as necessary. Temporary street closures (for maintenance or other activities including Student Move-In/Out or Commencement events) are coordinated with the City of Cambridge DPW through the Harvard Parking Office.

Harvard also contributes to the ongoing maintenance and improvement of both private and public streets and sidewalks adjacent to Harvard properties across the Cambridge campus. As part of Harvard construction projects, adjacent streets and sidewalks are often improved. In addition Harvard has contributed financial support to recent Harvard Square infrastructure improvement projects undertaken by the City of Cambridge.

The University works closely with the DPW Commissioner and staff to coordinate on public realm improvement projects. When possible, Harvard provides the city's contractors with laydown areas to facilitate public realm construction projects. During winter snow events, Harvard makes off-street parking available to residents and has also provided space for the City to unload plowed snow.



Printed on recycled paper