2009
Harvard University's

Town Gown Report

for the
City of Cambridge

Submitted by:
University Planning Office

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Institution Name: President and Fellows of Harvard College

Report for Time Period: 2008 – 2009 Academic Year
(unless otherwise noted, data reflects June 30, 2009)

Date Submitted: December 11, 2009

I. EXISTING CONDITIONS

Please provide the following information about the current conditions and population at your Cambridge campus. Add clarifying comments as needed.

A. FACULTY & STAFF

	2006	2007	2008	2009
Cambridge Based Staff				
Head Count	11,439	11,647	12,017	12,027[1]
FTEs	9,115	9,379	9,725	9,761[1]
Cambridge Based Faculty				
Head Count	1,541	1,581	1,760	1,783
FTEs	1,392	1,440	1,590	1,621
Number of Cambridge Residents Employed at Cambridge Facilities	3,946	3,973	4,166	4,105
Number of Cambridge Residents Employed at Boston Facilities	664	693	732	720

Ten-year projection

Growth projections are influenced by many factors and no central University department has undertaken such projections for faculty and staff counts.

[1] Employment figures are as of June 30, 2009 and do not include reductions in staff effective in FY10.

B. STUDENT BODY [2]

Please provide the following statistics about your Cambridge-based student body:[3]

	2006	2007	2008	2009
Total Undergraduate Degree Students	**7,002**	**7,100**	**7,081**	**7,156**
Day	6,613	6,715	6,648	6,678
Evening	*[389]*	*[385]*	*[433]*	*[478]*
Full Time	6,792 *[179]*	6,880 *[168]*	6,837 *[196]*	6,890 *[223]*
Part Time	210 *[210]*	220 *[217]*	244 *[237]*	266 *[255]*
Total Graduate Degree Students	**9,221**	**9,363**	**9,238**	**9,486**
Day	8,622	8,773	8,538	8,557
Evening	*[599]*	*[590]*	*[700]*	*[929]*
Full Time	8,405 *[94]*	8,611 *[95]*	8,495 *[147]*	8,485 *[126]*
Part Time	816 *[505]*	752 *[495]*	743 *[553]*	1,001 *[803]*
Total Non-degree Students	**5,109**	**5,623**	**5,653**	**6,172**
Day	351	434	358	313
Evening	*[4,675]*	*[5,265]*	*[5,300]*	*[5,859]*
Total Number of Students in Cambridge	**21,332**	**22,086**	**21,972**	**22,814**

Numbers in brackets represent students at the Extension School.

Ten-year projection

As is the case with faculty and staff counts, no central University department has undertaken projections regarding future student population.

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[2] Includes all non-degree students enrolled in day or evening classes, such as persons taking Harvard Extension classes.

[3] Counts as of October 15, 2008.

C. STUDENT RESIDENCES

	2006	2007	2008	2009
Number of Undergraduate Students Residing in Cambridge				
In dormitories[4]	6,449	6,449	6,485	6,566
With cars garaged in Cambridge	20	26	33	17
In off-campus, affiliate housing	85	0	0	0
In off-campus, non affiliate housing	101	103	112	115
Number of Graduate Students Residing in Cambridge				
In dormitories	1,420	1,387	1,164	1,181
With cars garaged in Cambridge	86	155	132	208[5]
In off-campus, affiliate housing	1,385	1,356	1,546[6]	1,741[7]
In off-campus, non-affiliate housing	3,267	3,382	3,347	3,333

Ten-year projection

Harvard's housing stock is managed as a University-wide resource to accommodate the needs of the larger University community including students participating in executive education programs, junior faculty, and family members of affiliates. In addition to housing nearly 100% of its undergraduates, Harvard currently houses approximately 52% of its graduate students.

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4 These figures represent beds available for undergraduate students in Cambridge and include beds located at 10-20 DeWolfe Street. The actual number of students may differ from these numbers to some degree.

5 The increase in graduate students parking in Cambridge is due in part to provisions for student parking in the garages at the new graduate student and affiliate housing at the 5 Cowperthwaite Street and 10 Akron Street.

6 The completion of 5 Cowperthwaite Street and the Grant and Banks Street woodframe houses increased the availability of affiliate housing for graduate students in Cambridge.

7 The completion of 10 Akron Street and three woodframe houses on Hingham Street and Western Avenue increased the availability of affiliate housing for graduate students in Cambridge.

D. FACILITIES & LAND OWNED

	2006	2007	2008	2009
Acres (Tax Exempt)[8]	198.47 Acres	201.13 Acres[9]	201.59 Acres[9]	201.59 Acres
Acres (Taxable)	28.47 Acres	25.34 Acres[9]	24.61 Acres[9]	24.61 Acres
Number of Buildings[10]	303	304	395	395[11]
Dormitories				
Number of Buildings	79	79	77	80[12]
Number of Beds	8,007	7,834	7,791[13]	7,917
Size of Buildings (GSF)	**13.4M**	**14.6M[14]**	**15.1M**	**15.5M[15]**
Assembly/Museum	889,052	949,190	884,536	884,536
Athletic	217,799	297,170	225,761	225,761
Classroom	520,370	484,979	482,330	866,512
Commercial	262,699	245,180	282,045	282,045
Healthcare	78,850	78,850	77,155	77,155
Laboratory	2,238,209	2,404,953	2,861,537	2,485,937
Library	1,175,987	1,117,081	1,122,453	1,154,716
Office	2,398,688	2,558,508	2,496,780	2,882,301
Residential	5,017,320	5,542,578	5,713,873	5,714,655
Support	602,135	924,419	923,487	886,349

[8] As of January 1, 2009, as reported on Tax Report ABC submitted to the City of Cambridge.

[9] As part of the Riverside housing development, a total of approximately three acres of land was transferred from taxable to tax-exempt status in 2007 and 2008. In addition to the parcels that contain Harvard's affiliate housing and the new affordable units developed by Harvard for the City, the exempt land includes the ¾ acre public open space for which Harvard granted a surface easement to the City of Cambridge. Harvard's taxable acres were further reduced by the transfer of the Blackstone Switch House to the City of Cambridge, after conversion of this structure into affordable housing units, and the sale of six residential properties.

[10] Building counts for 2006-2007 include only tax-exempt properties. The number of buildings reported for 2008 and 2009 reflects all of Harvard's Cambridge buildings, both taxable and tax-exempt.

[11] As of June 30, 2009, Harvard acquired one new building, 15 Hawthorn Street, as a gift. However, the building count has not increased because: a) the garages at 10 Akron Street and 5 Cowperthwaite Street were counted as separate buildings in 2008; however, they are not separate structures and are not counted as buildings this year; b) 42 Oxford Street was demolished in 2003 but was incorrectly maintained in the University's building database; and c) two buildings were transferred from "leased" to "owned" (see footnote 14, next page.)

[12] The increase in dormitories is due to the change in use from office to dormitory of the three Harvard-owned wood-frame houses (1637 Mass Ave, 3 Mellen Street and Baker Hall) that were moved to the Harvard Law School campus.

[13] Beds reported in 2008 included 5 Cowperthwaite Street, which is affiliate housing. The number has been updated.

[14] The majority of the increase in square footage is the result of an inventory that Harvard has conducted of University buildings based on standards contained in the federal Postsecondary Education Facilities Inventory and Classification Manual, 1992. (These measurements are for internal use and are distinct from other measurement standards, including City of Cambridge zoning definitions.) As of June 30, 2007, Harvard added one building to its inventory, the Laboratory for Integrated Science and Engineering (132,500 SF).

Parking Facilities

This section refers to parking spaces maintained in Cambridge only. Provide figures for the Campus as a whole and for each sub-area/precinct. Attach additional information as necessary.

Harvard University owns and maintains 4,576[16] 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. When Harvard submitted its Parking and Transportation Demand Management Plan, which was approved by the City of Cambridge in July 2003, it also submitted a detailed inventory of Harvard's parking spaces. Harvard updates this inventory annually in December.

Housing (Do not include any information about dormitories in this table.)

	2006	2007	2008	2009
Affiliate Housing - Tax Exempt				
Number of Units	880	880	878[17]	1,047[18]
Number of Buildings	8	8	8	12[18]
Affiliate Housing - Taxable				
Number of Units	738	734	891[19]	889
Number of Buildings	47	46	53[19]	53
Other Housing - Tax Exempt				
Number of Units	None	None	None	None
Number of Buildings	None	None	None	None
Other Housing - Taxable				
Number of Units	None	None	None	None
Number of Buildings	None	None	None	None

[15] The majority of the apparent increase in SF is due to the reclassification of 124 Mount Auburn Street (370,381 SF) and 14 Story Street (26,056 SF) to "owned assets." Harvard holds long-term leases on these two buildings with ownership transferring to Harvard at the end of the lease term. These two buildings previously were included in the University's "leased assets" inventory and, therefore, not reported in as owned buildings in earlier Town Gown reports. Harvard has acquired 15 Hawthorn Street (6,000 SF) as a gift.

[16] This represents an increase of 40 spaces (1%) since last year's report. The increase was approved in 2005 by Amendment 2 to Harvard's Parking and Transportation Demand (PTDM) Plan filed with the City of Cambridge and went into effect with the occupancy of Harvard's graduate student housing at 10 Akron Street.

[17] The decrease in tax–exempt affiliate housing from 2007 reflects two units that were converted to childcare use at Peabody Terrace.

[18] The increase in the number of exempt affiliate units and buildings from 2008 is due to the construction of new buildings and units at 10 Akron Street, 28 Hingham Street, 30 Hingham Street, and 387 Western Avenue. (Two basement units were removed at other locations).

[19] In 2008 two single-family houses were sold (to private buyers) and six basement units were removed. The increase in the number of taxable affiliate units and buildings from 2007 is due to the construction of new buildings and units at 5 Cowperthwaite Street and the Banks-Grant Street housing. (Note: the number of buildings was incorrectly reported as 54 in the 2008 report; the number has been corrected in the 2009 report).

Property Transfers:

Please list Cambridge properties purchased since filing your previous Town Gown Report:

- Harvard received the property at 15 Hawthorn Street as a gift.

Please list Cambridge properties sold since filing your previous Town Gown Report:

- None

Please describe any planned dispositions or acquisitions:

- Harvard has signed a Purchase and Sale agreement for the Philip Johnson house at 9 Ash Street, contingent upon securing appropriate public approvals.

E. REAL ESTATE LEASED

Please attach to the report a table listing of all real estate leased by your educational institution within the City of Cambridge. Include the following for each lease:

- **Street address**
- **Approximate area of property leased (e.g., 20,000 SF, two floors, entire building, etc.)**
- **Use (e.g., institutional/academic, student activities/athletic, housing, etc.)**

If your institution does not lease any real estate within the City of Cambridge, you may omit this section.

Real Estate Leased by Harvard	Square Feet	Tenant	Use
One Bow Street	8,450	FAS	Office
One Brattle Square	18,737	HKS	Office
One Kendall Square	27,000	HMS	Laboratory
One Story Street	6,125	DCE	Classroom
10 Ware Street	2,000	UIS	Office
104 Mt. Auburn Street	17,612	FAS	Office
104 Mt. Auburn Street	14,332	Provost	Office
125 Mt. Auburn Street	36,564	HLS	Office
1408-1414 Massachusetts Ave	50,000	FAS	Office
1430 Massachusetts Avenue	5,656	FAS	Office
1430 Massachusetts Avenue	2,600	GSAS	Office
155 Fawcett Street	3,500	FAS/ART	Warehouse
25 Mt. Auburn Street	10,162	LASPAU	Office
44 Brattle Street	10,193	GSE	Office
44R Brattle Street	8,417	GSE	Office
5 Bennett Street	6,030	HKS	Office
50 Church Street	13,480	GSE	Office
50 Church Street	3,608	FAS	Office
625 Massachusetts Avenue	70,762	FAS	Office
Total:	**315,228**		

Note: Previous Town Gown Reports included office space occupied by Harvard programs at 124 Mount Auburn Street as leased. However, 124 Mount Auburn Street has been reclassified as an "owned asset" (see footnote 14 on page 5) and therefore these occupancies are not included in this table.

F. PAYMENTS TO CITY OF CAMBRIDGE:

	2006	2007	2008	2009
Total Payments	**$14,592,500**	**$15,175,870**	**$13,388,612**	**$13,366,092**
Real Estate Taxes Paid	$4,642,265	$4,605,164	$4,806,268	$4,906,603
Payments in Lieu of Taxes (PILOT)	$2,056,671	$2,105,490	$2,173,492	$2,248,730
Water and Sewer Fees Paid	$5,328,965	$5,646,457	$5,159,149	$4,994,405
Other Fees and Permits Paid	$2,564,599	$2,816,752	$1,249,703	$1,216,354

Ten-year projection:

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

G. INSTITUTIONAL SHUTTLE INFORMATION

Please include information about all regularly scheduled shuttle services operated by your institution within the City of Cambridge or between Cambridge and other municipalities:

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
Soldiers Field Park (II)	Allston Campus, Square, Quad, Square, Allston Campus	20 minutes	7:15 am to 10:30 am
Weekday Service – All Day			
Mather Express	River Houses through Square to Kirkland St.	10 minutes	7:30 am to 4:30 pm
Radcliffe Quad (Express)	Quad, Square to Kirkland St.	10 minutes	7:30 am to 5:00 pm
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
Soldiers Field Park (III)	Allston Campus, Square, Kirkland St., Square, Allston Campus	35 minutes	4:00 pm to 12:45 am
Weekend Service			
Crimson Campus Cruiser	River Houses through Square, up Garden St. to Kirkland St to River Houses	35 minutes	12:00 pm 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
Soldiers Field Park (I)	Allston campus, Square, Quad, Square, Allston Campus	30 minutes	4:30 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

See map on page 44.

Harvard's Passenger Transport Shuttle fleet includes three 35-foot buses and five 29-foot buses (each of the eight buses has 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 a morning bus operates between Cambridge and Allston until 10:30 a.m. In the summer, limited weekday Shuttle service is provided on the Soldiers Field Park route.

Additionally, Harvard's Passenger Transport Van fleet includes five, ten-seat passenger vans and two wheelchair passenger vans. On weekdays, two of the vans run from 7:30 am -7pm; on weekends the vans run from 12pm-7pm. 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 about the campus area as a supplement to the shuttle bus system. The evening service operates between 7:00 pm and 12:30 am, seven days a week throughout the entire year, including summer and break periods.

All of the shuttle vehicles operate on B-20 biodeisel. Using biodeisel is considered a best practice in this industry and has reduced emissions by 15%. On an annual basis, emissions are reduced by on 96,725 lbs per bus fleet and 43,091 lbs per van fleet. Harvard's Transport Service Department keeps the fleet on a short life cycle to ensure that the best technology available is being used and practices proactive maintenance on all vehicles.

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.

Please provide ridership data, if available, and describe efforts both to coordinate shuttle system with other institutions and to streamline shuttle services.

	River Houses Route	Radcliffe Quad Route
Total number of people using route	818	1,562
Number of people per bus	20	25
Percentage of seats occupied per trip	61%	76%

Note: Bus capacity varies depending on the time of day and student activities (for example, in the morning the majority of students are travelling from the Quad to the main campus for classes; buses returning to the Quad during those hours are likely to carry many fewer students. The opposite is true at the end of the day.)

Harvard's Passenger Transport Service Department collaborates with the Cambridge Traffic, Parking and Transportation Department in the planning of University shuttle routes. Some recent examples include the re-design of Harvard Shuttle signage to meet Cambridge specifications, the relocation of the Johnston Gate stop to Boylston Gate, and the establishment of a new stop at 0 JFK Street.

Harvard works closely with the Cambridge Department of Public Works during construction and events that may require re-routing of Harvard Shuttles. Most recently, during the re-design of Harvard Square, several Harvard shuttle routes were altered in order to help alleviate traffic delays and congestion in the area. Harvard and the City work together during snow events to clear shuttle stops.

Harvard has developed a good 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 Ave.

The University has partnered with the MASCO shuttle bus and, in addition to providing financial support for this system, shares ShuttleTracker technology (a real-time tracking system developed for PTS that shows the location of buses on their routes). This coordination has limited service overlap within Cambridge and eliminates the need for a dedicated Harvard shuttle traveling to the Medical Area in Boston. Opportunities for collaboration with other institutions have been limited due to the liability of having non-Harvard affiliated passengers riding on our vehicles.

II. FUTURE PLANS NARRATIVE

On page 12 of the 1991 Report of the Mayor's Committee on University-Community Relationships, the members of the Town-Gown Committee agreed that "Universities should offer statements of their future needs to the city and plans responding to those needs. These plans should include specific statements about known development projects and their status; forecasts of faculty, staff or student population growth; and identified needs that do yet have solutions… These plans should address known concerns of the community, such as parking and/or tax base erosion."

Describe your institution's current and future physical plans:

- **To provide context, describe campus development efforts over the past five years;**
- **Employ a future planning horizon of ten years;**
- **State your institution's specific planning goals for this period;**
- **Describe the goals and needs that you address through your plans;**
- **How do you see your campus evolving to address your institution's strategic goals and objectives;**
- **Identify and describe plans for future development of the sub-areas/precincts of your campus, being certain to address the institution specific information requests and questions found in Section VI (coordinate with Map 4 in Section IV);**
- **Identify future development sites on your campus (coordinate with Map 4 in Section IV);**
- **Include in your discussion the relationship of planned and projected institutional development to adjacent residential districts within Cambridge and any impacts that might result;**
- **Include in your discussion the relationship of planned and projected institutional development to adjacent retail and commercial districts within Cambridge and significant impacts that might result (e.g. loss or relocation of retail space, etc);**
- **Include in your discussion efforts to support and encourage "green" development on your campus, including sustainability planning and LEED certification of campus buildings;**
- **Include in your discussion a description of existing facilities for housing your faculty and staff and any plans for increasing such housing.**

A. DEVELOPMENT OVER THE PAST 5 YEARS

The last five years have been a period of physical growth and investment on Harvard's Cambridge campus. Upon completion of the Law School's new building on Massachusetts Avenue, the University will have constructed approximately 1.7 million square feet of new space, primarily consisting of the Riverside housing projects, the Northwest Science Building, 90 Mount Auburn Street, and LISE (the Laboratory for Integrated Science and Engineering); renovated 2.4 million square feet of space in existing buildings; and conducted life safety and building systems upgrades in over 40 buildings. Additionally Harvard has renovated close to 60,000 square feet in non-Harvard leased properties in Cambridge. Consistent with the City of Cambridge's policies for institutional growth, virtually all new development has occurred on sites within the existing Cambridge campus. To ensure that this development has been compatible with surrounding neighborhoods, Harvard has worked in close collaboration with municipal boards and community groups, resulting in projects that meet Harvard's institutional needs while providing broader benefit to the Cambridge community.

Development during the last five years has focused on several key areas of physical planning: supporting academic programs and research; housing Harvard affiliates; enhancing the campus experience; promoting sustainability campus-wide; and improving campus infrastructure.

Supporting Academic Programs and Research

Support for academic and research programs has been the primary driver for Harvard's physical planning and development. Changing pedagogies, the introduction of new technology and fields of research, and growing interdisciplinary collaboration have required that Harvard's capital and physical plans respond to evolving programmatic needs.

Academic Buildings, Centers, and Support for Core Academic Functions

The Weissman Preservation Center, at 90 Mount Auburn Street provides conservation services for the Harvard University Library's special collections. (Photo Credit: Brian Smith/Harvard University Library)

The last five years have seen a substantial investment in the development of new and renovated facilities that support academic study and research. Significant projects include:

Center for Government and International Studies (CGIS) – Completed in 2005, this complex of two new buildings and one renovated wood-frame building unites the Government Department, faculty of the History Department with international research interests, and several research centers in the Faculty of Arts and Sciences. The complex is designed to promote lively, interdisciplinary exchange among faculty, students, and visitors from around the world.

Harvard Law School Northwest Corner Building – Scheduled for completion in 2011, this building will establish a new focus for the Law School campus and will provide over 200,000 square feet of classrooms, academic and clinical offices, and a student center.

90 Mt. Auburn Street – This building, completed in 2006, houses administrative offices for the Harvard University Library system and a state-of-the-art conservation laboratory providing for the care and treatment of rare and valuable materials in Harvard's special collections.

Byerly Hall – The re-purposing and comprehensive renovation of this historic former classroom building was completed in 2008 and provides a new home to the Fellows of the Radcliffe Institute for Advanced Study, and strengthens scholarly research in Radcliffe Yard.

New Directions in the Sciences

The Northwest Science Building includes state-of-the-art teaching laboratories.

Over the past decade Harvard has made major investments in new science and engineering facilities to strengthen research and teaching in such key areas as stem cell research, systems biology, nanotechnology, and advanced computing. In addition, the University has undertaken significant renovation of existing research and laboratory spaces to respond to new initiatives and the increasingly integrated and collaborative nature of scientific

research. These investments have competitively positioned the University in a dynamic and rapidly changing scientific environment. Significant projects include:

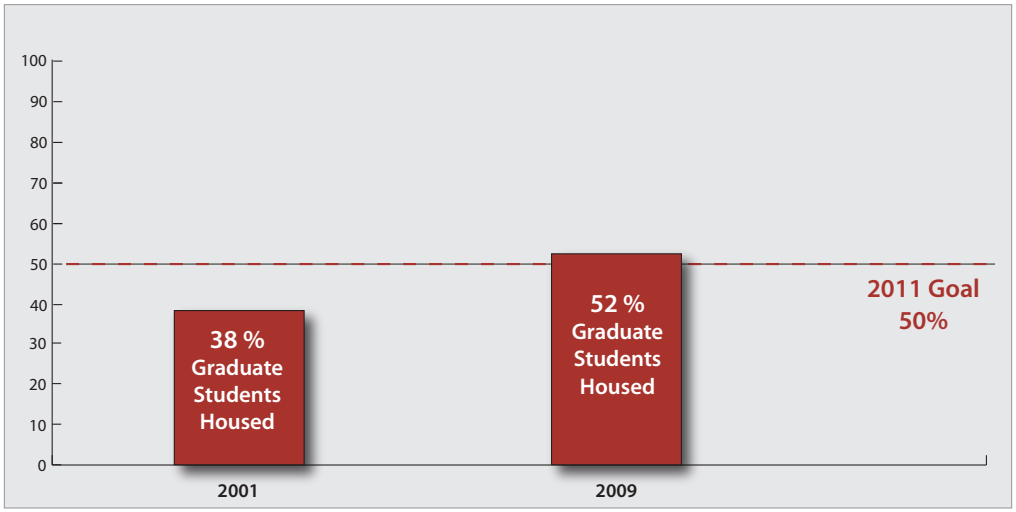
Northwest Science Building – Completed in 2008, this new facility houses over 500,000 gross square feet of interdisciplinary science research and teaching space, providing a new focus of scientific research in the North Campus.

Laboratory for Integrated Science and Engineering (LISE) – The new home for Harvard's Center for Nanoscale Systems (CNS) opened in 2007. The facility brings together faculty and researchers from the physical sciences, including material science, physics, chemistry, and bioengineering.

Biological Research Infrastructure – This new underground core facility was completed in 2006 and supports multi-disciplinary biological research.

Laboratory Renovations – Harvard has renovated over 250,000 square feet of existing research and laboratory space over the last five years to support new science initiatives, to accommodate new faculty appointments, and to foster interdisciplinary research.

Housing Harvard's Affiliates



In 2001, Harvard established a ten-year goal of housing at least 50% of its graduate, professional, and medical students to alleviate pressure on the private housing market and increase housing availability for local residents. In 2008 this goal was reached well ahead of schedule with the completion of new graduate student and affiliate housing in Riverside. During the last five years Harvard has also made significant investments in its existing housing portfolio to improve housing for our students and affiliates.

Riverside Housing

5 Cowperthwaite Street, providing housing for Harvard graduate students and affiliates, is part of the recently completed Riverside Housing project. (Photo Copyright Robert Benson)

With 500 new beds of graduate student and affiliate housing, the completion of the Riverside Housing project fulfilled a major commitment to housing Harvard's affiliates. Key components of this development include:

5 Cowperthwaite and 10 Akron Street – These two new buildings provide over 400 new beds of graduate and affiliate housing.

Banks, Cowperthwaite, Grant Wood Frames – 44 units of new affiliate housing were provided in new and renovated buildings.

Hingham Street and Western Avenue – Three new buildings provide 18 units of affiliate and community affordable housing.

Switch House (community housing) – As part of its development agreement with the City of Cambridge, Harvard created 33 affordable homeownership units in this historic building.

Renovation of Existing Housing

Harvard has continued to make significant improvements across its existing housing portfolio including investments in life safety upgrades and unit renovations in more than 40 buildings. Examples of projects include:

Undergraduate Houses - Life safety improvements including installation of sprinkler systems have been a key priority over the last five years.

83 Brattle Street – Major building system upgrades and renovation of 31-unit affiliate apartment building.

Holden Green – Phased renovations to improve life safety including new fire protection and alarm systems and building electrical systems.

Enhancing the Campus Experience

To ensure that Harvard provides a campus experience that fosters academic excellence, the University has undertaken many projects over the last five years which contribute to the improvement of the broader academic environment on its Cambridge campus. These projects have included improvements in non-academic facilities for students and affiliates, investments in the campus' artistic and cultural resources, and the enhancement of the campus landscape.

Arts and Culture

New College Theatre provides modern student theater performance and rehearsal space. (Photo Credit: Leers Weinzapfel)

Harvard's wealth of cultural programs and facilities are an integral part of its campus, and not only support academic programs in the arts and humanities but provide an outstanding cultural amenity to the larger community. Recent projects which support the arts and culture on the Cambridge campus include:

New College Theatre – Completed in 2007, the renovation of the former Hasty Pudding building included exterior restoration and the creation of a new theater and rehearsal space.

Harvard Dance Center – This project converted a portion of the Quadrangle Athletic facility to create a new home for the Harvard Dance Center, including a new dance floor and space for audience seating.

32 Quincy Street – This project will create a renovated and expanded Harvard Art Museum, providing the University with a state-of-the-art facility for teaching, research, and exhibition.

Campus Life

Harvard has made significant improvements to the design and function of student dining halls, including the Dunster/ Mather Servery. (Photo Credit: Harvard University Dining Services)

Harvard has invested in facility improvements and other initiatives that contribute to the quality of campus life for students, faculty and staff. These projects include:

Hilles Library – Consolidation of library space enabled the creation of a new home for student organization offices in 2006.

Gymnasium renovations (Malkin Athletic Center and Hemenway Gym) – Renovation and redesign of interior spaces to add equipment and improve usability.

Serveries (Dunster, Mather, and Quincy Houses) – Renovation of kitchen and servery areas to improve function and student dining experience.

Common Spaces (Fall 2009) – During September and October, as part of efforts to enhance the ways in which members of the Harvard community experience the campus, the University installed tables and chairs within Harvard Yard and the Radcliffe Quad and hosted open-air performances in select areas across the campus. This project grew out of the work of the Steering Committee on Common Spaces, appointed last year by President Drew Faust and charged with developing ideas and recommendations to ensure that the campus' physical environment better supports the intellectual and social vitality of the University.

Landscape Improvements

The relocation of surface parking to underground facilities created a building site for the Northwest Science Building and a new landscaped green space. (Photo Credit: Timothy Hursley and SOM)

The University has made significant improvements to the campus landscape through recent development projects. Among the most significant changes has been the replacement of surface parking lots with below-grade parking structures, creating space for new academic facilities, improved pedestrian circulation, and new landscape spaces for the campus and the community. Many of these projects occurred at the edges of the Harvard campus and involved collaboration with neighbors and abutters to create developments that were not only better integrated with the rest of the campus but provided a more welcoming and landscaped interface with adjacent neighborhoods. Recent projects that have contributed to the improvement of the campus landscape include:

Placing parking underground (Riverside, Northwest Science Building, Law School Northwest Corner Building) – These projects replaced surface parking and above-ground garages with underground parking to create development sites for new academic buildings and significantly improve the campus with the creation of new landscapes.

CGIS: Knafel – The Center for Government and International Studies project created new landscaped spaces between Harvard properties and the adjacent neighborhood allowing new pedestrian and visual access. The development includes an attractive landscaped courtyard framed by the GSD, the Knafel Building, the Swedenborgian Church and several wood-frame buildings and featuring multiple pathways to the surrounding neighborhood streets.

Rockefeller Hall Landscape – The Harvard Divinity School converted a former parking area into a landscaped quad creating a more cohesive identity for the Divinity School.

Radcliffe Sunken Garden – The Radcliffe Institute's restoration of this space re-establishes and builds upon the garden's character while improving accessibility for all users.

Promoting Campus-wide Sustainability

"We believe universities have a special role and special responsibility in confronting these challenges of climate change and sustainability… A university community must not only carry out research, but also translate the findings of that research into action"

- President Drew Faust

Over the past decade Harvard has made significant strides toward operating the campus in an environmentally responsible manner. The University has had a formal campus sustainability program in place since 2001 when the Harvard Green Campus Initiative was founded, and this group was formalized into the Office for Sustainability in 2008.

Harvard's efforts are driven by three sustainability commitments, administered through the Office for Sustainability:

- Campus-wide Sustainability Principles, adopted in 2004, provide broad vision to guide University efforts.
- Green Building Requirements, adopted in 2007, require Leadership in Energy and Environmental Design (LEED) Silver plus additional energy requirements for all major capital projects.
- Greenhouse Gas (GHG) Reduction Goal, adopted in 2008, commits the University to reduce GHG emissions 30% below a 2006 baseline by 2016, including growth.

As a result of these commitments, Harvard now has 65 building projects that have achieved or are in the process of achieving LEED certification. 20 of these projects have been certified, the highest number of any University in the world.

The University has achieved a 55% recycling rate, installed small-scale renewable energy projects on campus, introduced composting in residential and commercial dining halls, and initiated an organic landscaping project in Harvard Yard. Harvard had an outstanding single-occupancy vehicle (SOV) rate in Cambridge of 13% in 2009.

Harvard has been recognized by several third-party University Sustainability rankings that consistently rank Harvard at the top of their lists, including a top Green Rating Score of 99 from the Princeton Review and an A- (the highest score allotted) from the Sustainability Endowment Institute.

Improving Campus Infrastructure

The continual upgrade and expansion of the University's centralized utility infrastructure and parking facilities is essential to support Harvard's new and existing development. Over the last five years there has been a significant investment in critical campus infrastructure including the following projects:

Blackstone Project (Renovation of 46 Blackstone and Blackstone Steam Plant) – University Operations Services (UOS) completed renovation of the complex of historic buildings at 46 Blackstone Street. The project, which received LEED Platinum certification, has enabled the consolidation of UOS departments including the Operations Center, Facilities Maintenance, Engineering & Utilities, and Environmental Health & Safety. Ongoing investments at the adjacent Blackstone Steam Plant have included installation of a high-efficiency, gas-fired boiler and backpressure turbine to generate electricity as a byproduct of steam production. These improvements have significantly reduced the University's GHG emissions.

Satellite Chilled Water Plant (Northwest Science Building) – The development of the Northwest Science Building included the construction of a 7,500-ton satellite chilled water plant. This new satellite, along with the Central Plant at the Science Center, provides chilled water for space conditioning and process cooling to approximately 75 buildings on the Cambridge campus.

Parking Garages - Oxford Street, 5 Cowperthwaite Street, 10 Akron Street (Riverside) and 10 Everett Street (under construction) – As part of the re-development of existing campus sites, Harvard has included the construction of underground parking garages. These facilities have replaced surface parking areas and created opportunities to improve pedestrian access and circulation. The new community park along the Charles River on the corner of Western Avenue and Memorial Drive is partly built on two former parking lots.

Future Planning

Sherman Fairchild Laboratory (Interior Renovation)

The renovated Sherman Fairchild Biochemistry building will house the Department of Stem Cell and Regenerative Biology.

Architect:	Payette Associates
Total Square Feet:	90,000 SF renovation
Programmatic Driver:	Interdisciplinary research and teaching
Green Attributes:	Targeting LEED Gold or Platinum

The Faculty of Arts and Sciences is planning a major renovation of the Sherman Fairchild Biochemistry Lab to house the Department of Stem Cell and Regenerative Biology (SCRB). This renovation will include a complete replacement of the building's 30 year old infrastructure, and a reconfiguration of the laboratory layouts to better support present-day concepts of open, flexible laboratory design.

Related projects in the Biological Laboratories and the Northwest Science Building will renovate/fit-out laboratory and office space to accommodate the relocation of researchers from Sherman Fairchild during the project. In addition, more modest renovations have been completed in the Bauer Laboratory to accommodate a portion of SCRB and laboratories associated with the Harvard Stem Cell Institute.

The Department of Stem Cell and Regenerative Biology (SCRB) was established in April 2007 as the first cross-school department located in both the Faculty of Arts and Sciences (FAS) and Harvard Medical School (HMS). The department's research in the areas of developmental biology, regenerative medicine and tissue engineering will help to inform the understanding of human diseases and their treatment.

The project team is utilizing an integrated design approach to optimize building performance. From very early in the process the team evaluated potential design options using energy modeling and life cycle costing to identify the decisions best for Harvard and the environment, including upgrading building infrastructure and looking at the full life of the building. The team has fully embraced the Harvard Green Building Guidelines and is using the project to evaluate potential improvements to the guidelines. The renovation of Sherman Fairchild is striving to incorporate best practices from around the University and hopes to be a model for green laboratory renovations at Harvard and beyond. At present, project planners anticipate that the design will achieve LEED Gold certification; the design will target LEED Platinum, if possible within the constraints of the program.

Currently in Construction

The Harvard Art Museum: 32 Quincy Street (Renovation and Addition)

The renovation of 32 Quincy Street will preserve the original building while expanding its program space and upgrading the interior to professional museum standards.

Architect:	Renzo Piano Building Workshop (Architect of record: Payette Architects)
Total Square Feet:	204,000 GSF (includes 50,000 GSF demolition, 104,000 GSF renovation, 100,000 GSF new construction)
Programmatic Driver:	Address facility deficiencies; expand to meet Harvard Art Museum programmatic needs
Green Attributes:	Targeting LEED Gold

The Harvard Art Museum is planning to renovate, restore, and expand its current facilities located at 32 Quincy Street. The project will facilitate the centralization of the collections, galleries, and curatorial staff of the Fogg Museum, the Busch-Reisinger Museum, and the Arthur M. Sackler Museum in one state-of-the-art facility.

The project will upgrade the building's infrastructure to meet professional museum standards, and resolve spatial limitations and structural problems of later additions. It will sensitively restore the existing building envelope, expand the Art Museum's object-based study centers, increase exhibition space, and enhance visitor amenities. Programmatically, the project will protect and preserve the world-class collections and enhance the teaching and research mission of the Harvard Art Museum.

Pritzker Prize-winning architect Renzo Piano Building Workshop, with local design partner Payette Associates, has created a design that respectfully preserves the original building, while supporting the new program necessary to maintain the mission and functionality of a world-class institution. The project will remove the existing additions to the historic structure and restore the original 1927 facades on Broadway and Quincy Street. A new gallery addition will be constructed along Prescott Street and will be linked to the historic building by a glass rooftop structure housing the Study Centers and Conservation areas. The three-story Gallery extension gives a new permeability to the building, creating a second entrance of equal significance to the existing entrance. The additions have been designed to have the least possible impact on the historic structure, are distinct in their architectural expression, and are equally respectful of the residential neighborhood and the historic Carpenter Center. The landscaping will also enhance the public realm through improved pedestrian routes, bicycle parking, and more usable green space. Importantly, the project is designed to follow the University's sustainability initiatives. It will incorporate extensive green design features to minimize the museum's environmental impact and energy consumption. As one measurement of this effort, the project is seeking LEED Gold certification.

This project has received approvals from the Cambridge Historical Commission and the Cambridge Board of Zoning Appeal. The project team continues to work closely with the Cambridge Historical Commission staff and Massachusetts Historical Commission in finalizing the details of the design. The project is currently engaged in pre-construction activity and construction is expected to begin in early 2010. During the renovation project, the Arthur M. Sackler Museum at 485 Broadway remains open and has been reinstalled with representative works from the collections of all three museums.

Wasserstein Hall, Caspersen Student Center and Clinical Wing (New Building)

The new Harvard Law School building on Massachusetts Avenue will provide classroom, academic and clinical office, and student activity space.

Architect:	Robert A.M. Stern Architect
Total Square Feet:	235,000 GSF
Programmatic Driver:	Replacement of inadequate academic facilities and student activity space; relocation of parking underground
Green Attributes:	Targeting LEED Gold

Construction of the Law School's new building, Wasserstein Hall, Caspersen Student Center, and Clinical Wing project (formerly referred to as the Northwest Corner Building Project) at the corner of Everett Street and Massachusetts Avenue is expected to be complete and ready for occupancy in December 2011. Once complete, the new building will improve the environment for teaching and learning, providing new classrooms, academic and clinical offices, and new spaces for student activities.

The new building complex will house three centers:

Wasserstein Hall, bordering Massachusetts Avenue, will feature a range of classrooms and other learning spaces designed for 21st century legal education.

Caspersen Student Center, adjacent to Harkness Commons, will be a central gathering place for students and will serve as a home for student organizations, journals, and social activities.

Clinical Wing, on the Everett Street side of the site, will house the School's expanding clinical programs — the educational ground where theory and practice meet.

In addition to responding to programmatic and student needs, the project will provide major physical improvements to the area benefiting both the Harvard campus and

adjacent neighborhoods. These improvements include a building design that recognizes the site's important interface with Massachusetts Avenue and the community. By placing parking underground and improving pedestrian connections, the building will create an attractive and more welcoming northern gateway to the Law School and to the Harvard University campus from adjacent neighborhoods.

The project also features a 695-car below-grade parking garage that replaces the demolished Everett Street garage and surface lots displaced by the project. Excavation of the garage is complete and it is expected to open in September 2010.

Vanserg/Shannon Child Care Center (Interior Renovation)

Interior view of the future Oxford Street Daycare Cooperative in Shannon Hall.

Architect:	D.W. Arthur Associates Architects
Total Square Feet:	12,000 GSF
Programmatic Driver:	Improve the quality and increase the capacity of child care options available at the University
Green Attributes:	Targeting LEED Gold

Based on a comprehensive study of options to support Harvard's larger commitment to expand child care capacity on campus, Harvard's Office of Work/Life Resources is undertaking projects for two affiliated child care centers. The two centers – the Harvard Yard Child Care Center in the lower level of Vanserg Building and the Oxford Street Daycare Cooperative on the ground floor of Shannon Hall – will be renovated with new mechanical systems, egress modifications for code compliance, more efficient floor layouts, and playground improvements. The Harvard Yard Child Care Center space will be renovated from January 2010 through August 2010 and the Oxford Street Daycare Cooperative space will be renovated from August 2010 through March 2011. The renovation work has been designed to achieve a gold level of LEED certification. A green modular classroom building was installed in October in the North Yard near the Vanserg and Shannon buildings to house each child care center temporarily in turn as the space in each building is renovated. The modular classroom building, which will remain on the site until April 2011, is among the first sustainable relocatable school buildings in the country.

Recently Completed

Radcliffe Landscape Master Plan: Sunken Garden

Restoration of the Radcliffe Sunken Garden has re-established its original character and improved accessibility for all users.

Landscape Architect: Stephen Stimson Associates
Total Square Feet: 14,000 SF landscape
Green Attributes: Water-saving irrigation system, retention of existing canopy trees, integrated pest management

The Radcliffe Institute for Advanced Study has completed its restoration of the "Sunken Garden" located at the corner of Garden Street and Appian Way.

Lab Renovation (Conant-Mallinckrodt)

The Conant-Mallinckrodt laboratory renovation and addition provides a collaborative environment for chemistry research.

Architect: Ellenzweig Associates
Total Square Feet: 6,000 GSF renovation; 1,000 GSF addition
Programmatic Driver: Science Research
Green Attributes: Targeting LEED Gold

The Faculty of Arts and Sciences has completed an expansion of an existing two-level connector between the Mallinckrodt Laboratory and Conant Laboratory buildings.

Planning Study

Undergraduate House Renewal

The undergraduate House system has been a defining feature of Harvard College since the system was first established by President A. Lawrence Lowell in 1930. The undergraduate Houses formalize Harvard's centuries-old tradition of learning and living together. The University has begun planning for the comprehensive renovation of the Houses.

The plan will be implemented in three stages: planning and program review; design and development; and construction and renovation. Harvard conducted an assessment of programmatic needs — academic, social, and residential — through the work of the House Program Planning Committee. The second phase will be the design and development and the creation of detailed options for redesigning or configuring Houses, as well as options for swing houses to be occupied during construction phases. The third phase will be the renovation and construction of individual Houses.

The timing and phasing of House renewal will depend on funding, and will also be considered in the context of the University's overall capital plan, which is currently under review in light of economic circumstances.

C. SUSTAINABILITY

Harvard is dedicated to confronting the challenges of climate change and global sustainability both through academic research and by translating that research into action on campus. The Office for Sustainability (OFS) is leading the University in achieving these sustainability goals by leveraging the collective knowledge of partners across the University and by integrating sustainable practices into campus operations and administration.

Efforts over the past year have primarily been focused on developing an Implementation Plan for achieving the Greenhouse Gas (GHG) Reduction Goal established in 2008. This planning process has been a model for addressing sustainability issues University-wide and has established a framework for addressing campus environmental issues at Harvard as we move forward.

In the coming year the Office for Sustainability, working with the schools and departments, will be developing a University-wide plan for achieving our GHG Reduction Goal and will be moving forward with many of the strategies and recommendations that have come out of the planning process. Priorities include:

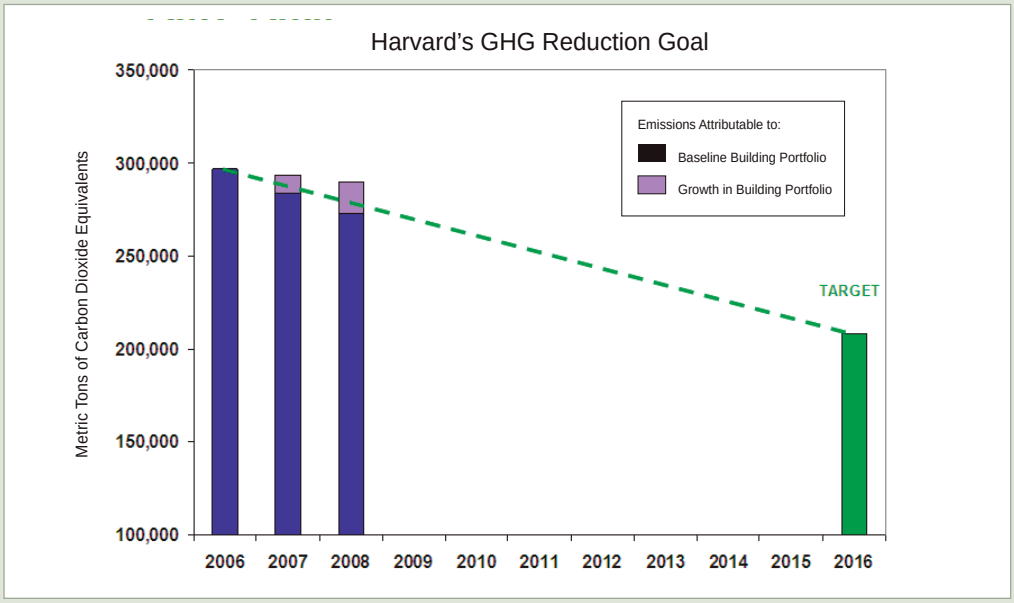
- Establishing best practices sharing and training opportunities for Harvard staff;
- Ensuring implementation of Harvard Green Building requirements and integration into all capital and campus planning processes related to GHG;
- Supporting schools and departments in identifying and implementing energy conservation measures in their buildings;
- Running outreach and engagement campaigns and developing useful resources to promote behavior changes;
- Establishing a Faculty Sustainability Advisory Council, and hosting sustainability events to inspire continued work and involvement throughout the year and to celebrate progress.

Key Sustainability Indicators

- 65 projects were LEED registered and 22 have been LEED certified.
- 15.7% of electricity is from renewable sources in 2008.
- 55% of Harvard's waste was recycled in 2009.
- $4 million were saved by loan-funded energy conservation measures.
- 40% of produce served by Harvard Dining Services was from local farms (during growing season).
- 13% single-occupancy vehicle (SOV) rate in Cambridge in 2009.

Greenhouse Gas Emissions Reduction

In the summer of 2008, President Faust, the Deans, and the Corporation committed Harvard to reduce campus GHG emissions 30% below a 2006 baseline by 2016, including future growth. This goal was based on the recommendations of the Harvard University Task Force on Greenhouse Gas Emissions, which was made up of faculty, students, and senior administrators.



GHG emissions reported here are preliminary. FY09 data is currently being analyzed. Final data will be published on the OFS website.

Since the announcement of the goal, OFS has been leading the development of a comprehensive GHG reduction program. OFS oversees six GHG Working Groups, with representation from all of Harvard's Schools and units, which cover the following topics:

- GHG Inventory & Measurement
- Building Efficiency & Demand Management
- Finance
- Energy Supply
- Gap Investments
- Marketing, Communications & Engagement

Over the past eight months, roughly 200 participants from across the University have participated in the development of implementation measures. Major milestones include:

- An updated methodology for our Greenhouse Gas Inventory
- Ongoing building energy audits across millions of square feet of the University
- Energy audits of our central steam and chilled water plants
- The adoption of a University-Wide Temperature Policy
- The adoption of updated Green Building Standards (see next page)

These practical measures will align Harvard for common-sense cost savings and energy reductions while preparing the University to meet its GHG Reduction Goal.

Preliminary GHG inventory data show that Harvard has reduced its emissions since FY2006, despite extensive growth in the building portfolio. The final estimate of Harvard's GHG reduction from FY2006 to FY2009 will be published in the coming months.

OFS is currently reviewing this data in conjunction with Draft GHG Reduction Plans from each of the schools and units. These plans will roll up into a University-wide plan for achieving Harvard's 30% reduction goal, expected to be completed in 2010.

Harvard Green Building Guidelines

In 2007 Harvard University adopted Green Building Guidelines for all construction and renovation projects. Major capital projects are expected to use integrated design principles, life cycle costing analysis, energy modeling, and meet specific energy reduction requirements: renovations are expected to use at least 21% less energy than a code compliant project while new construction projects should see at least a 28% reduction.

Major capital projects are also expected to achieve a minimum LEED Silver certification. Smaller capital projects are required to use life cycle costing when evaluating design options and are encouraged to meet recommended performance requirements based on LEED standards in areas such as lighting, HVAC, plumbing, interior architecture, landscaping, and stormwater management.

The OFS has developed a range of green building services to support these requirements, and has also developed a web-based Green Building Resources site with a products and technologies database, case studies on Harvard projects, and all LEED submittals.

Green Buildings

Leadership in Environmental and Energy Design (LEED) certification recognizes buildings that have selected and improved a sustainable site, improved water efficiency, minimized energy use, selected environmentally preferred building materials, provided an improved indoor environmental quality, and utilized innovative strategies to improve building performance. Over the past six years, Harvard has experienced a boom in green new construction and renovation projects that incorporate LEED standards. These standards include LEED for New Construction, LEED for Commercial Interiors (which applies to interior renovation in existing buildings) and LEED for Homes.

As of October 2009, 65 Harvard projects, 38 of them in Cambridge, have received or are seeking certification with the U.S. Green Building Council (USGBC). "With the LEED certification of its 20th building, the most of any higher education institution in the world, Harvard demonstrates phenomenal green building leadership," said Rick Fedrizzi, President, CEO & Founding Chair, USGBC. "Green buildings provide the healthiest, safest environments for learning and growing – all while saving money, contributing toward mitigating climate change and improving our environment."

Griswold Hall: LEED for Commercial Interiors Platinum

The renovation of the second floor of Griswold Hall renovation achieved LEED Platinum certification

The renovated second floor of Griswold Hall was the second project on Harvard's campus to receive the highest level certification for sustainable renovation, LEED Platinum (the Blackstone Station renovation received Platinum certification in 2007). This project is one of just 19 interior fit-outs in the world to achieve this rating and is the first such project at a university.

Sustainable Features

- Lights automatically dim with the presence of natural sunlight
- Building ventilation systems adjust in response to signals from carbon dioxide sensors
- Suite occupancy sensors initiate temperature setbacks when spaces are not in use.
- Healthy indoor air quality
- Low-VOC (volatile organic compound) emitting materials were used throughout the space
- Efficient sink and water closet fixtures are expected to save 38,600 gallons of water a year, as compared to code-minimum fixtures
- Use of recycled or reused materials; almost two-thirds of the "new" office furniture included salvaged or used furniture from around the HLS campus
- 99.3% (24.47 tons) of total construction waste was recycled, the highest recycling rate ever for a Commercial Interiors renovation project at Harvard

2 Grant St.: LEED for Homes Platinum

2 Grant Street is the first LEED for Homes project at any University and achieved LEED Platinum certification.

The single-family house at 2 Grant Street is Harvard's first LEED Platinum residential project and third Platinum building at Harvard. The historic house was originally constructed in 1867 and is the first LEED for Homes Platinum renovation at any university.

One of the most important environmental aspects of the house is its size. This 2 bedroom single family house has only 1,000 SF of floor space, and sits on a lot that is only 1,307 SF. This small size reduced the amount of materials needed during the renovation, and reduces the amount of energy needed to heat, cool, and power the space.

Sustainable Features

- Spray foam insulation
- Carefully sealed building envelope that was checked with a blower door test
- Heat recovery ventilator to provide ventilation without the typical energy penalty
- Highly efficient (95.5%) condensing gas furnace
- Instantaneous domestic water heater
- Central air conditioner with a very high seasonal energy efficiency ratio (SEER) of 13.0, programmable thermostats
- Energy Star appliances
- Efficient lighting
- Water efficiency, environmentally friendly materials selection and occupant health and comfort were emphasized throughout the project

Zhuang Laboratory: LEED for Commercial Interiors Gold

The Zhuang Laboratory in the Naito building was Harvard's first LEED CI lab project in Cambridge.

Laboratory buildings account for a disproportionate percentage of GHG emissions due to the energy intensive equipment and high air flow requirements that are required to ensure occupant safety. Harvard is approaching resource conservation in laboratories from several dimensions: operational practices; renovation and construction; and occupant behaviors.

The Gold certified Zhuang laboratory renovation in the Naito building is the 20th LEED certification at Harvard. This project is one of several recent lab renovation projects that are registered for LEED certification and following the Harvard Green Building Guidelines. In addition, the FAS Green Labs Program is focused on working with researchers, staff, faculty, and building managers to implement sustainable practices and technologies in the FAS laboratories.

Sustainable Features

- Lighting control through daylight and occupancy sensors
- Temperatures in the offices set back based on occupancy sensors
- Domestic water fixtures selected to use 30% less water than a code compliant building
- Low-VOC emitting paints, sealants, and adhesives used throughout the project
- Use of variable air volume fume hoods that have significantly reduced exhaust rates when fume hood sashes are closed and fume hood face velocities set at low but safe levels
- Hood exhaust rates displayed in real time to educate occupants and help promote the environmentally responsible behavior of keeping the fume hood sashes closed

Alternative Energy Projects

Harvard University invests in renewable energy alternatives in two ways, through our power purchasing decisions and by investing in on-site renewable energy installations. In 2009 about 15% of electricity purchased at Harvard was from renewable sources (from a combination of direct purchases and Renewable Energy Certificates), and in November 2009 Harvard signed a contract with First Wind to purchase Renewable Energy Credits (RECs) plus energy from a large wind farm in northern Maine, which will account for more than 10 percent of the electricity consumed on the Cambridge and Allston campuses.

In addition, small-scale on-site renewable energy installations are located across the Harvard campus to serve as testing sites for new technologies and to raise awareness about renewable energy alternatives. Projects include:

- Photovoltaic cells located on three buildings at Harvard, collectively producing approximately 58kW of electricity
- A new large photovoltaic array with 1000 panels is currently being installed on the Arsenal Complex (Watertown) and will produce approximately 500 kW of power
- Rooftop wind turbines located on Harvard's Holyoke Center and Soldier's Field Park Garage (Boston), collectively producing approximately 12 kW of power
- Solar thermal installations producing hot water from solar energy on four Harvard buildings
- Harvard buses run on 20% biodiesel fuel

LEED Buildings and Alternative Energy Projects

LEED FOR NEW CONSTRUCTION

Platinum
- Blackstone Station

Gold
- 5 Cowperthwaite Street
- 90 Mount Auburn Street
- 10 Akron Street
- Rockefeller Hall

Certified
- 60 Oxford Street
- Schlesinger Library
- Two Arrow Street

LEED FOR INTERIOR RENOVATIONS

Platinum
- Griswold Hall (Classroom)

Gold
- Naito (Zhuang Laboratory)
- Naito (Schrieber Laboratory)

Silver
- 125 Mount Auburn Street (Office)
- Mather Dunster (Kitchen)

LEED FOR HOMES

Platinum
- 2 Grant Street

Changing the Culture

Students from Adams House celebrating their win in the annual "Green Cup" environmental competition among the houses

In addition to technical building and facilities projects, OFS and sustainability staff in the schools and units are focused on building a culture of environmental responsibility at Harvard. These programs work with students and staff to educate, change behaviors, and inspire individual action. Programs use community-based social marketing techniques such as competition and incentives, getting commitment, and building social norms to bring about lasting change in behaviors.

The Green Office Certification Program was started in 2008 and is an internal rating system developed by OFS to help green our offices at Harvard. The program is designed to provide an organized, step-by-step checklist-style process for reducing environmental impacts in an office environment. There are four successive levels of certification from Leaf 1 (easiest) to Leaf 4 with an easy-to-follow checklist for each. There are currently 19 offices certified at Harvard, for more information visit the Green Office Program website at http://green.harvard.edu/greenoffice

The Office for Sustainability continues to run Green Living Programs, hiring students from the College, Harvard Business School and Harvard Law School to run peer-to-peer education campaigns targeted at promoting Harvard's University-wide Sustainability Principles and Greenhouse Gas Commitment. Through outreach mediums such as emails, web posting, bulletin board postering, tabling, film screenings, themed events, newspaper articles, and competitions, Green Living Representatives seek to foster more sustainable behaviors in their peers and reduce environmental impacts from Harvard's residential buildings.

Green Teams have emerged as an effective tool for schools and departments to build community support for sustainability initiatives and to generate ideas and action with key departments. Green Team members run outreach campaigns, lead Green Office efforts for their departments, and work side by side with their Facilities Departments to identify energy and resource conservation opportunities. For more information, visit: http://green.harvard.edu/green-teams

Organic Landscaping Pilot Program

Specially brewed "compost tea" restores the soil's natural nutrient cycling system.

Harvard University's Facilities Maintenance Operations (FMO) group has developed a highly successful Organic Landscaping Program currently implemented across 25 acres of University landscape – including the highly visible and heavily used Harvard Yard. The program was launched with the Harvard Yard Soils Restoration Project (March-November 2008) – a pilot effort modeled on the fully organic landscape maintenance program operating at Battery Park City Parks (BPCP) in lower Manhattan since 1989.

The program replaces chemical fertilizers, pesticides, herbicides, and fungicides with specially brewed organic teas. These liquid biological amendments are specifically designed to restore the natural nutrient cycling system. Results typically include increased root growth of 3-5 inches, a significant reduction in irrigation requirements due to enhanced moisture retention, and increased levels of beneficial nitrogen.

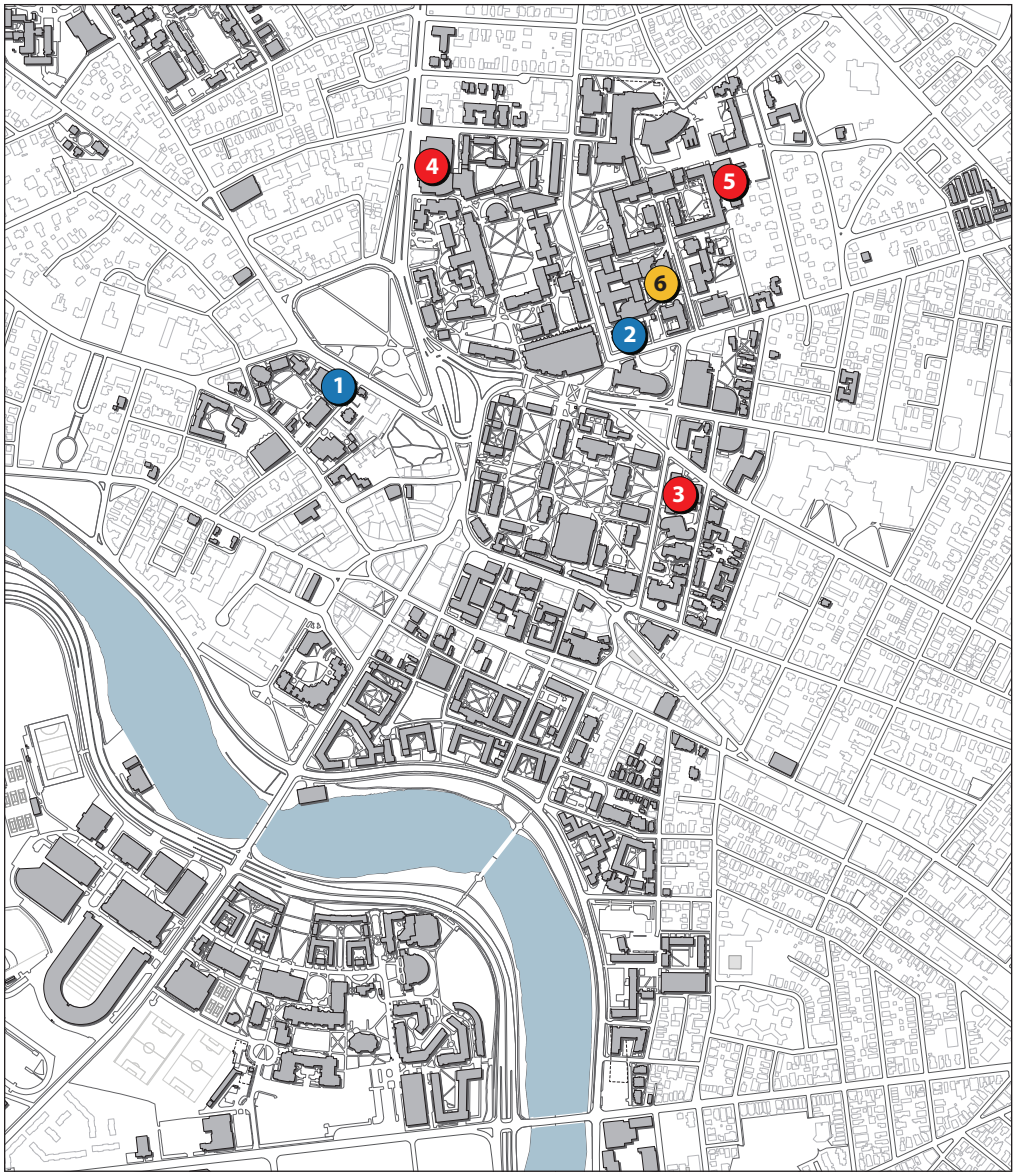
Over the next two years, FMO is hoping to expand the program throughout the entire 80 acres of University landscape it maintains.

To learn more, visit www.uos.harvard.edu/fmo/landscape.

III. LIST OF PROJECTS

List all development and public improvement/infrastructure projects completed within the past year, currently in construction or which will require City permits or approvals during the next three years (coordinate with Map 3 in Section IV)

Projects Completed, in Construction, and in Planning



Recently Completed

1. Radcliffe Landscape Master Plan: Sunken Garden
2. Lab Renovation (Conant-Mallinckrodt)

Currently in Construction

3. 32 Quincy Street (Harvard Art Museum)
4. Law School: Wasserstein Hall, Caspersen Student Center and Clinical Wing
5. Shannon/Vanserg Child Care

Will Require City Permits or Approvals Within Three Years

6. Sherman Fairchild Laboratory (Department of Stem Cell and Regenerative Biology)

Project List

Completed Within the Past Year

Project	Programmatic Goal	Green Attributes
Radcliffe Landscape Master Plan: Sunken Garden	Improvement of campus open space	Water-saving irrigation system Retention of existing canopy trees Integrated pest management
Lab Renovation (Conant-Mallinckrodt)	Science research	LEED registered; targeting Gold

Currently in Construction

32 Quincy Street (Harvard Art Museum)	Improve access to collections, promote outreach to new audiences, foster collaboration among curatorial departments, and enhance the museum's role in Harvard's educational mission.	LEED registered; targeting Gold Recycle demolition debris Reduction in use of potable water and complete rainwater harvesting Energy-efficient building envelope Automated systems to balance natural lighting and improve energy efficiency Heating and cooling systems with heat recovery to reduce energy consumption 24/7 building management system to respond immediately to changing weather and occupancy Custom designed and energy-efficient gallery lighting systems Use of certified renewable lumber
Law School: Wasserstein Hall, Caspersen Student Center and Clinical Wing	Replacement of inadequate academic facilities and student activity space; relocation of parking underground	LEED registered, targeting Gold
Shannon/Vanserg Day Care	To fulfill Harvard's commitment to expand affiliated daycare capacity	LEED registered, targeting Gold Water use reduction Energy-efficient equipment and appliances Use of low VOC products Incorporation of natural day-lighting Temporary modular classroom building to house day care centers among the first sustainable relocatable school buildings in the country

Will Require City Permits or Approvals within Three Years

Sherman Fairchild Laboratory (Department of Stem Cell and Regenerative Biology)	Science research	Targeting LEED Gold with a goal of Platinum Photovoltaic arrays on the roof to produce clean renewable energy A heat shift chiller and chilled beams that boost HVAC system efficiency Enthalpy wheels to recover waste heat and cooling from the exhaust Solid state, energy-efficient, LED-task lighting over lab bench areas Utility sub-metering to allow for more efficient building operations High-performance, low-face velocity fume hoods to reduce ventilation needs Real-time utility touch screens to educate and engage occupants Environmentally-preferred and non-toxic materials

IV. MAPPING REQUIREMENTS

Please attach to the report maps of the following (these may be combined as appropriate):

1. **Map of all real estate owned in the City of Cambridge. Categorize properties by use as appropriate (e. g., institutional/academic, student activities/athletic, dormitory/nontaxable residential, investment, etc.).**

   Map 4.1 shows property owned by Harvard and property leased by Harvard for University use.

2. **Map of real estate leased. Categorize properties by use as appropriate (e. g., institutional/academic, student activities/athletic, housing). This map can be combined with the one above.**

   Map 4.2 shows Harvard-owned property leased to third parties.

3. **Map of development projects completed within the past year, now underway, proposed or planned within the next three years.**

   See map on page 39.

4. **Map the sub-areas/precincts of your campus, indicating the location of future development areas and projects. If appropriate, include detailed maps of sub-areas/precincts where significant changes are anticipated to occur over the next five years.**

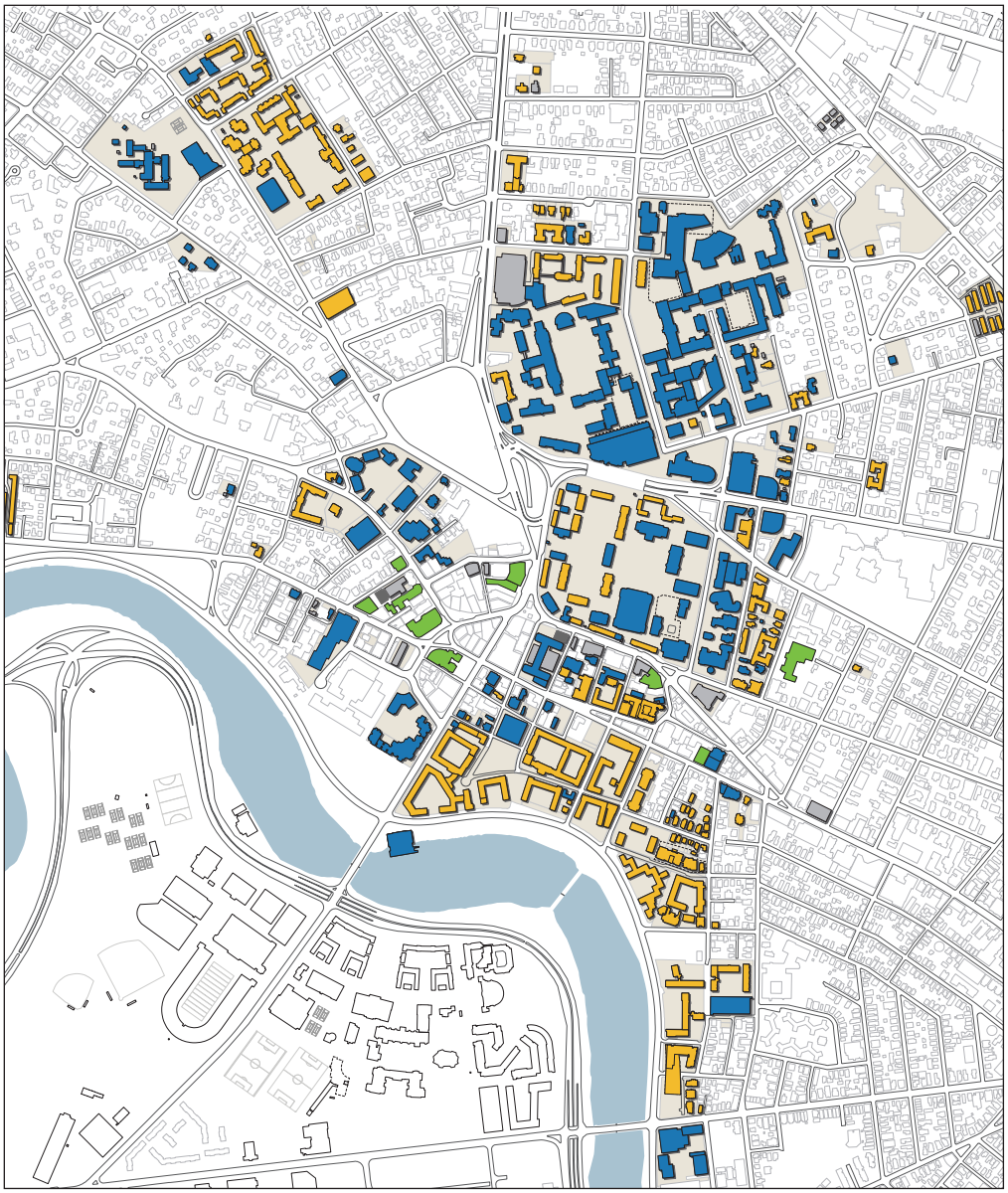
   See map on page 39.

5. **Map of all regularly scheduled campus shuttle and transit routes.**

   Map 4.3 shows Harvard's campus shuttle bus routes.

Map 4.1

Real Estate Owned and Leased by Harvard for University Use



Legend

Buildings by Ownership Status and Primary Use (1)

- Harvard Owned - Institutional (2) (underground)
- Harvard Owned - Residential
- Harvard Owned - Other (3)
- Leased (4) - Institutional (5)

Land Parcels

- Harvard Owned
- Non-Harvard Owned

Notes:

(1) Primary Use reflects predominant building use.

(2) The Rowland Institute located at 100 Edwin Land Blvd is located outsite the map coverage area.

(3) See Map 2, next page.

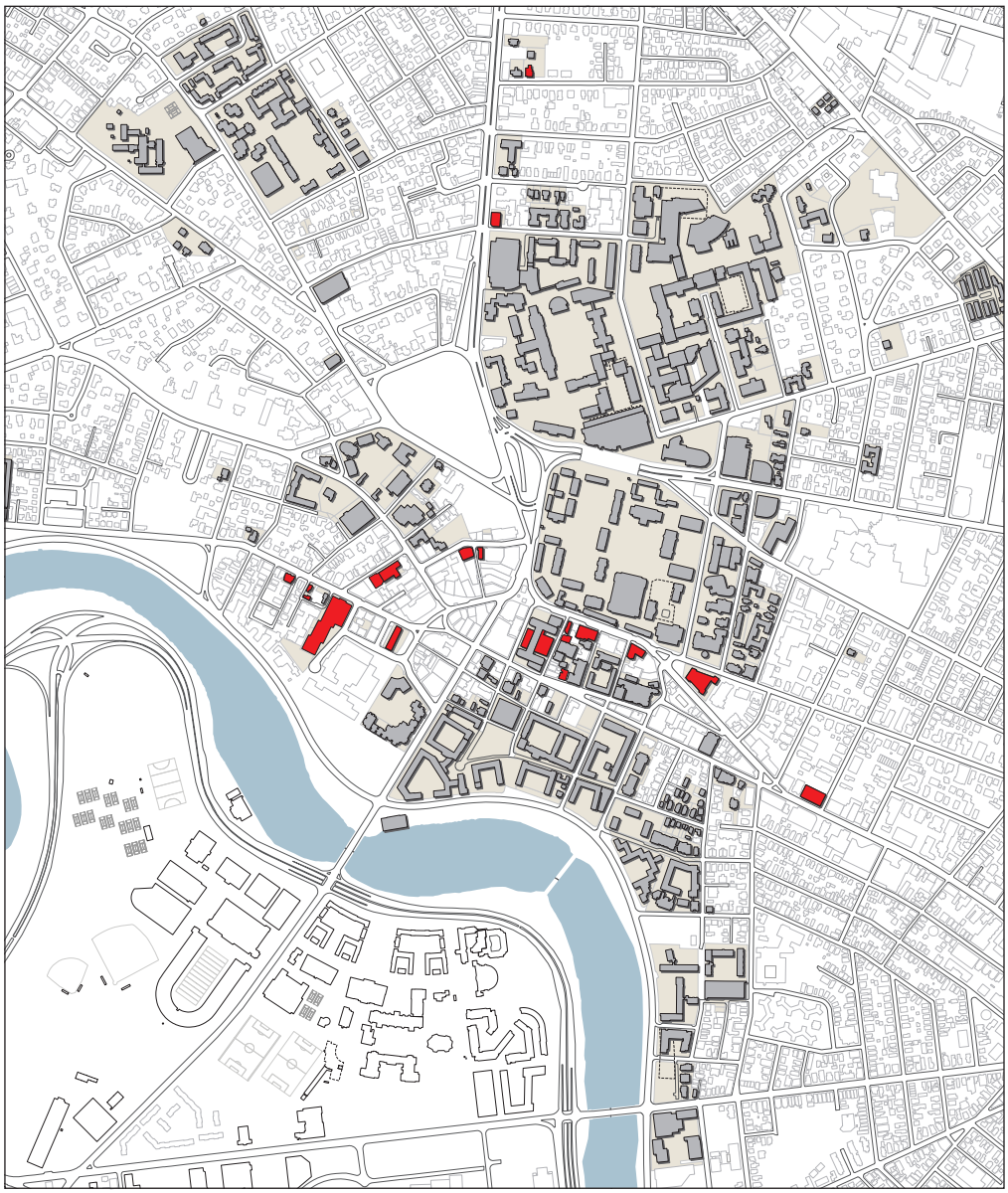
(4) Buildings may be leased by Harvard in whole or in part.

(5) The following buildings leased by Harvard for Institutional Use are located outside the map coverage area:

155 Fawcett Street
625 Massachusetts Avenue
One Kendal Square

Map 4.2

Real Estate Leased to a Third Party in Cambridge



Legend

Buildings by Ownership Status and Use

Leased to 3rd Party for Commercial Use

Harvard Owned - Other

Land Parcels

Harvard Owned

Non-Harvard Owned

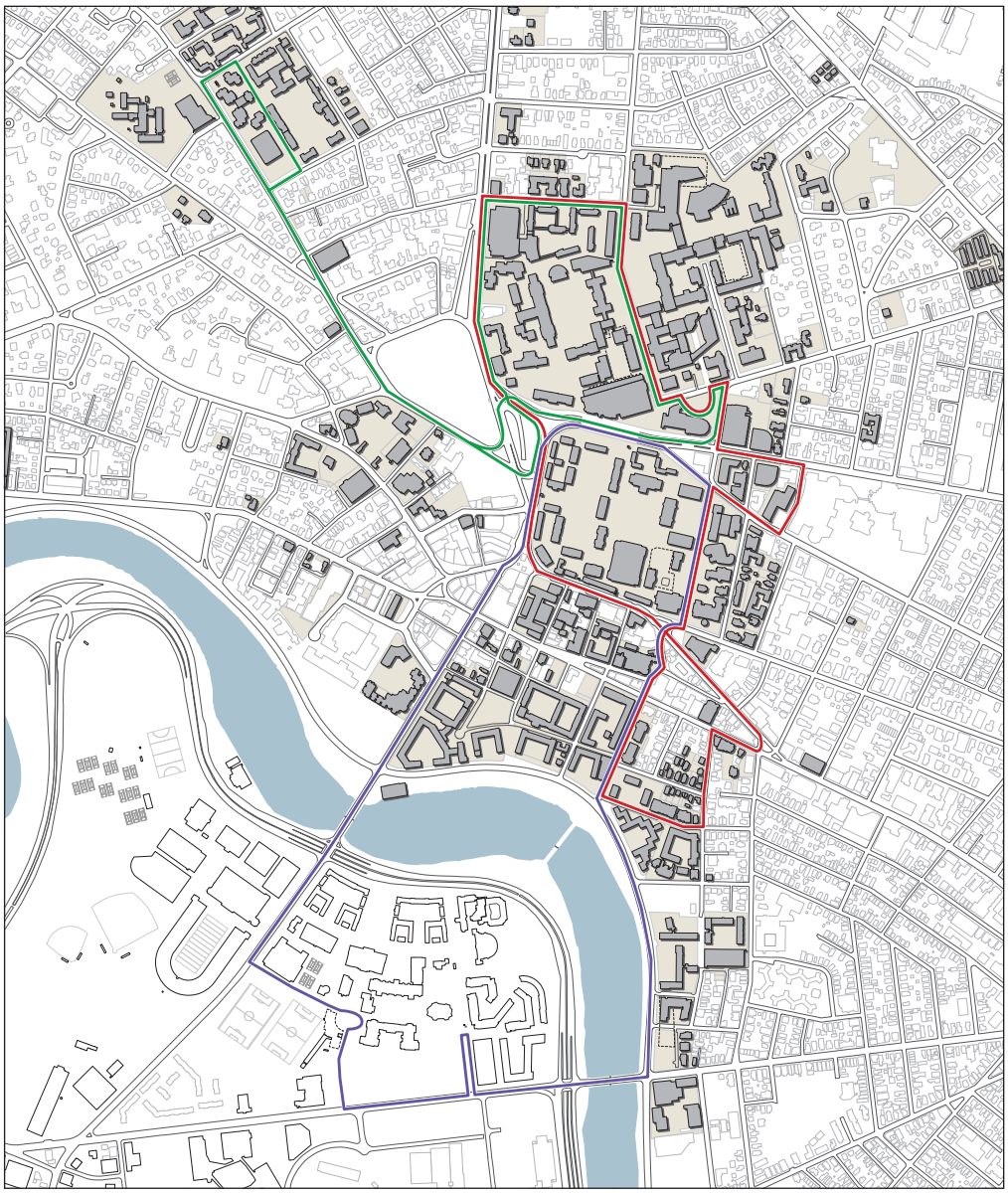
Notes:

Buildings may be leased in whole or in part. For locator purposes, entire buildings have been shaded.

All buildings leased to a third party are owned by Harvard, except for the following buildings which are controlled by Harvard through lease agreements:

8 Holyoke Street
65 Mount Auburn Street

Map 4.3
Harvard Campus Shuttle Routes



Legend

- River Houses
- Radcliffe Quad
- Soldiers Field Park

Notes:

This map shows Harvard's three principal academic-year, daytime shuttle bus routes. Harvard also runs evening and weekend shuttle services that cover these same routes (on a different schedule) and partners with MASCO to provide transportation to the Longwood Medical Area.

V. TRANSPORTATION DEMAND MANAGEMENT

Please provide the following information. You may summarize the information below or attach documents to this report, as appropriate. If your school has not updated information since submitting the 2004 Annual Report, you may so indicate in the appropriate space below.

Harvard University remains a leader among Cambridge's large employers for consistently reducing its exceptionally low SOV rate. When it was approved in 2003, Harvard's Parking and Transportation Demand Management (PTDM) Plan targeted a goal of reducing the University's Single Occupancy Vehicle (SOV) rate by 10% (from 27.4% to 24.7%). This goal was surpassed the following year when Harvard achieved an SOV rate of 17.0%. According to the latest PTDM survey results Harvard's SOV rate has continued to edge downward and is now at 13% for Cambridge based employees and graduate students Harvard's proactive Transportation Demand Management programs and incentives offered by CommuterChoice continue to provide the incentive necessary to encourage commuters to leave their cars at home. Harvard's low SOV rate and the reduction of trips to Cambridge reflect the University's ongoing commitment to the programs and measures contained in Harvard's PTDM Plan.

CommuterChoice Program

Harvard's CommuterChoice Program tracks and monitors the transportation demand management programs and incentives that it provides, and is committed to improving the University's programs based on annual survey data and program feedback.

CommuterChoice Program offerings include:

- Information on local transit options.
- MBTA monthly pass subsidy and pre-tax savings.
- Pre-tax savings on purchase of private transit passes and commuter checks.
- Information on safe bicycle routes and general bicycle safety.
- Departmental Bike Program (see www.commuterchoice.harvard.edu/dept_bikes.shtml).
- Carpool partner matching and carpool registration.
- Discounted and preferential parking for carpools and vanpools.
- Assistance with vanpool formation.
- Discounted Zipcar™ membership.
- Emergency Ride Home Program for carpool participants.
- Park and Ride information.
- HarvardWalks! Walk to Work programs and information.
- Assistance with transportation information as it relates to moving to the area or relocation.
- Outreach to the University's Transportation Coordinators, representing all of the University's Departments.

Highlights from the past year include:

T Pass Program

- The CommuterChoice Program sold over 6,300 MBTA monthly passes each month.

Zipcar™

- All Zipcars on Harvard's campus are hybrid; 8 locations and 12 vehicles.
- Expanded Zipcar vehicle selection at locations with multiple vehicles.
- Increased Zipcar membership to over 6,400 registered participants.

Bicycles

- Inaugurated the Francis Avenue covered bike shelter: 74 bikes and 2 scooters.
- Increased subsidy for Departmental Bike Program bicycle purchase.
- Increased participation in Departmental Bike Program to 16 departments and 37 bikes.
- Worked with HUPD at freshman move-in to encourage bicycle registration.
- Piloted bike enforcement initiative with Harvard Divinity School.
- Awarded 2009 Boston Bike Friendly Business Award.
- CommuterChoice worked as part of the Bay State Bike Week Committee to help lead another successful Bike Week with 225 cyclists attending Harvard's Bike Breakfast.
- Harvard University won the Bay State Bike Week's Commuter Challenge for large educational institutions.
- The Abandoned Bike Project continued tagging and removing abandoned bicycles across the campus.
- Collaborated on the Greater Boston Regional Bike Share initiative with the MAPC and City of Boston.

Outreach

- Translated Transportation Survey into Spanish, Portuguese, and Haitian Creole.
- Updated CommuterChoice website to include pre-tax savings on private transit products, enhance ridesharing section, and introduced "News" section.
- Publicized bicycle registration to incoming freshman at move-in with HUPD.

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, are having 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://www.upo.harvard.edu. Harvard submits annual PTDM updates which are on file with the City's Community Development Department.

VI. INSTITUTION SPECIFIC INFORMATION REQUESTS

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

Harvard continues to refine the Master Planning framework that was submitted to the City of Boston in 2007 with input from the Harvard community, neighbors, and the City of Boston. These refinements lay out the defining components of the plan, including the transportation system, green space network, building footprints and heights, and major uses. The plan is on display in the Allston Room in the Holyoke Center arcade in Harvard Square and at www.allston.harvard.edu.

Harvard's planning in Allston focuses on a variety of campus uses that could include research and academic buildings, graduate schools, arts, culture, housing, new athletic facilities and fields, acres of parks and green space, and a circulation network of new streets and bicycle and pedestrian paths.

The plan transforms some 200 acres and replaces truck parking lots, former distribution centers and warehouses, and a former concrete plant, and creates a green, open campus, offering everyone a place to learn, reflect, invent, create, walk, bike, visit or simply be.

The Allston Master Plan is built on four principles:

- Interdisciplinary Teaching and Research.
- Building Community; Creating Place.
- Sustainability.
- Economic Development.

These master plan principles remain the same, however the phasing and pace of development will be slower than planned given current economic realities. Based on current plans, we do not foresee any additional impacts on the City of Cambridge.

For more information, please visit www.allston.harvard.edu.

2. Describe where the Stem Cell Institute will be housed if it will not be housed in Allston.

The Harvard Stem Cell Institute (HSCI) is a scientific collaborative established in 2004 to fulfill the promise of stem cell biology as the basis for cure and treatments for a wide range of chronic medical conditions. HSCI brings together resources from the University, Harvard Medical School, and 11 teaching hospitals and research institutions. In addition, to address the many societal issues associated with stem cell research, HSCI draws expertise from Harvard's professional schools, including Harvard Law School, the Harvard Kennedy School, the Harvard School of Public Health, the Harvard Business School, and the Harvard Divinity School. The administrative offices of HSCI are currently located in Cambridge, with the Institute's associated research being conducted in laboratory space on Harvard's

Cambridge and Longwood campuses and in the research facilities of member institutions.

Closely allied with the HSCI is Harvard's Department of Stem Cell and Regenerative Biology (SCRB). Although both HSCI and SCRB were originally planned to occupy space in the Allston Science Complex, the construction of this facility has been slowed due to the changed economic climate. Despite these changes, Harvard University maintains its strong commitment to stem cell biology research and education, and as noted in the Future Plans section of this year's report, Harvard is undertaking the renovation of existing science buildings on the Cambridge campus to support its efforts in stem cell research and education. When renovation work is completed in 2011, this space will serve as the new home of the administrative offices and core SCRB faculty, along with laboratory space supporting HSCI. HSCI administration will continue to be housed in Cambridge, in a location central to the professional schools mentioned above.

3. Provide an update on planning and construction activities in the North Yard and Law School, including plans for the Massachusetts Avenue frontage.

See Future Plans Narrative.

4. Provide a discussion of the university's role in the Harvard Square office market. What is the impact of an increasing university presence, particularly on office and retail uses?

Harvard University contributes significantly to the market strength and vitality of Harvard Square. The University brings over 25,000 students, faculty, and staff to the Square each day. Undergraduates alone are estimated to spend approximately $20 million on an annual basis, and visitors to the University account for over 190,000 visitor days in Cambridge generating significant restaurant, retail, and hotel business.

By virtue of the Square's proximity to the University's main campus, there is and will continue to be a strong Harvard presence in Harvard Square, but with respect to the Square's office and retail uses, this presence does not mean an increasing predominance of Harvard-related uses.

Office Space

The percentage of Harvard Square office space leased by the University has remained relatively stable over the last 10 years, averaging approximately one-fifth of the Square's total office market. The office space leased by Harvard is used primarily for administrative functions. The daily, year-round presence of these employees provides significant economic support for the retail and service activities in Harvard Square, adding to the Square's vitality.

Harvard's leased office space has historically provided a solid base for the office market in Harvard Square, and has likely provided a degree of rental stability to a fluctuating market over time. The University's practice has been to lease upper floor

office spaces rather than impacting existing street level retail uses.

Harvard employees take advantage of public transit subsidies and other transportation benefits as part of the University's transportation management programs. As a result, 43% of Harvard's Cambridge staff commutes by public transit and 19% either walk or bike to work. Harvard's single-occupant, vehicle-trip rate is 13% compared to an over 80% average in Middlesex County. This greatly reduces the number of trips to Harvard Square by private automobile, reducing traffic congestion and the demand for parking.

Retail Space

The percentage of Harvard Square space owned by the University and leased to others for retail and services has also remained stable over the last 10 years, averaging approximately one-fifth of total Harvard Square retail space. Harvard shares the City's interest in supporting a unique retail environment in Harvard Square. Harvard leases space to 35 businesses that are almost all locally owned, some of which have been operating for over 30 years such as Grolier Book Shop, Leavitt & Pierce, Harvard Bookstore, and Bartley's Burger Cottage.

Harvard also works collaboratively with other stakeholders in the Square and the City to identify and secure desired retail uses. For instance, a City-led retail study in 2005 identified a market as one of the most desired uses not currently in the Square. Recognizing this need, Harvard secured Market in the Square for its leased space at Church and Brattle Streets.

5. Provide an update on the Fogg Museum project, with particular attention to possible effects on the surrounding community and streetscape.

See Future Plans Narrative.