Institutional Master Plan Amendment
Draft Project Impact Report

For the Fourth Amendment to the
Harvard University Allston Campus
Institutional Master Plan

Tata Hall

Submitted to:
BOSTON REDEVELOPMENT AUTHORITY
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JULY 8, 2011
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Draft Project Impact Report

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Harvard University Allston Campus
Institutional Master Master Plan

Tata Hall

Submitted to:
Boston Redevelopment Authority

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July 8, 2011
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1.0 GENERAL INFORMATION

1.1 Introduction

This Institutional Master Plan Amendment/Draft Project Impact Report (“IMP Amendment/DPIR”) is being submitted to the Boston Redevelopment Authority (“BRA”) by the President and Fellows of Harvard College (“Harvard” or “Harvard University” or “University”) on behalf of the Harvard Business School (“HBS”). This document is being submitted in response to the Scoping Determination issued by the BRA on June 30, 2011. An annotated copy of the Scoping Determination is included in Appendix A.

The HBS campus is approximately 40 acres located in Allston north of Western Avenue and east of North Harvard Street (see Figure 3-1 for a Locus Map). The campus also includes buildings located at 230 Western Avenue and 25 Travis Street as well as properties in Watertown. HBS has been located in Allston since the 1920s. The Executive Education program was started in 1943 and is now housed in several buildings in the northeast corner of the HBS campus.

This IMP Amendment/DPIR considers one project: the construction of Tata Hall, a proposed Executive Education building (the “Project”) that as described more fully below, consists of approximately 150,000 gross square feet and at final build-out, will contain 180 beds, two-tiered classrooms and common meeting space. The building will be located on a prominent location, set back from the Charles River. A primary design goal is to maintain a powerful sense of transparency to facilitate a visual connection between the Harvard Business School campus and both the immediate context of the Charles River and the broader context of the Boston skyline beyond.

This IMP Amendment/DPIR does not add any land to the existing Harvard IMP Area in Allston. The site of the proposed Project is already part of the Harvard IMP Area; the proposed institutional use requires approval under the IMP requirements of Section 80-D of the Zoning Code.

A project with a similar use and location, but a smaller scale, was first identified in the University’s 1997 IMP, described below.

Over the past eight months, the Project has been discussed at meetings of the Harvard-Allston Task Force, City and State agencies, and with advocacy groups. The University looks forward to continuing these discussions as part of the review process for this IMP Amendment/DPIR.
### 1.2 Project Identification and Team

<table>
<thead>
<tr>
<th>Role</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Name:</strong></td>
<td>Harvard Business School – Tata Hall</td>
</tr>
<tr>
<td><strong>Location:</strong></td>
<td>Harvard Business School Campus, Allston, MA</td>
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1.3 Status of the Harvard Allston Institutional Master Plan

1.3.1 Currently Approved IMP

Harvard began submitting Institutional Master Plans for its Allston campus in 1989. The most recent fully approved IMP dates to 1997 and includes several now-completed projects such as McArthur Hall, Spangler Center and Hawes Hall at the Harvard Business School, and the graduate student housing building at One Western Avenue. An Executive Education housing project in the approximate location of the proposed Tata Hall was first identified in the 1997 IMP.

In May 2002, the University amended the 1997 IMP to add two existing facilities to its IMP Area: 1230 Soldiers Field Road and 25 Travis Street. In October 2002, the University renewed without change the amended 1997 IMP.

In 2007, the University further amended the 1997 IMP to add the site of the proposed Science Complex on Western Avenue to the IMP Area. The 2007 IMP Amendment was approved by the BRA on October 3, 2007 and the Boston Zoning Commission on December 5, 2007. The 2007 IMP Amendment also extended the term of the renewed IMP for five years, or until 2012 (as amended the “IMP”).

In January 2011, the University filed a third amendment to the 1997 IMP to add the uses included in the Harvard Innovation Lab at 125 Western Avenue. The 2011 IMP Amendment was approved by the BRA Board on March 10, 2011 pursuant to the expedited IMP Amendment process set forth in Section 80D-9(2)(b) of the Zoning Code. The Harvard Innovation Lab is currently under construction and is anticipated to be open in the fall of 2011.

With this filing, the University now seeks to add the Tata Hall Project to its IMP. Chapter 2.0 includes the IMP Amendment currently proposed.

1.3.2 New IMP

Institutional Master Plan Notification Form

In January 2007, the University filed an Institutional Master Plan Notification Form (“IMPNF”) to start the process of preparing a new IMP to provide a planning framework to support Harvard’s development in Allston for the next 20 to 50 years. The IMPNF presented long-range planning goals both for land in the existing IMP Area as well as approximately 70 acres of additional Harvard-owned land which was proposed to be added to the IMP Area. In response to the IMPNF, the BRA issued a Scoping Determination on July 31, 2008 outlining the issues to be addressed in the new IMP.

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1 The Institutional Master Plan was submitted in October 1997. A Supplemental Information document was submitted in March 1998 and approved by the BRA and the Boston Zoning Commission in May 1998.
In response to the global financial downturn and its severely constraining effects, the University has re-cast its long-term master planning process and has not yet filed a new IMP, though acknowledging an obligation to address the IMP by December of 2012. In December 2009, Harvard issued a letter to the University community announcing the pause in construction of the Allston project and outlining the University’s next steps in Allston as a three phased process: property stewardship, leasing and community engagement; planning and greening; and, as resources allow, campus development.

In addition, in February of 2010, the University convened a Work Team comprised of University deans, faculty members and alumni that considered academic priorities and planning assumptions. In June of 2011, this Work Team submitted a set of recommendations to the University. These recommendations are currently under review by the University.

**Work Team and Current Planning**

The BRA’s Scoping Determination also requested information on the University’s current and projected planning efforts for its owned properties in the North Allston community.

Since 2009, and through collaborative efforts at the University, great strides have been made in advancing the objectives articulated above by:

- Developing and constructing a new Innovation Lab at 125 Western Avenue, which brings together many cross-school interests, fosters team-based and entrepreneurial activities, and deeps interactions among students, faculty, entrepreneurs, and the community;
- Advancing plans for Tata Hall;
- Investing in the new Charlesview Residences in Brighton Mills, which broke ground in May 2011;
- Completing community improvement projects such as Library Park, that will officially open on July 7, 2011;
- Executing 12 leases in Harvard owned properties attracting new businesses and non-profits to Allston along with opportunities for new employment (Harvard also has participated in work fairs with new tenants such as Stonehearth Pizza helping to match possible job opportunities with local workers);
- Continuing to invest in community programming, including the Harvard-Allston Education Portal and planning for the addition of a new and complementary addition of the Ed Portal Annex intended to expand programming to serve the “whole person.” Partnership with the Gardner Pilot Academy grew this past year as the University
Continuing to invest in community programming, including the Harvard-Allston Education Portal and planning for the addition of a new and complementary addition of the Ed Portal Annex intended to expand programming to serve the “whole person.” Partnership with the Gardner Pilot Academy grew this past year as the University supported trips to Harvard, afterschool programming at the Ed Portal, and the Harvard Achievement Support Initiative which continued their support of the after school program. Harvard continued to support and grow the Harvard Allston Farmer’s Market and has added summer programming with Charlesview residents.

In addition, the University has engaged with the BRA and some in the community in planning processes such as the development of Western Avenue Edge Guidelines in order to capture opportunities for curbside improvements associated with near term projects that can be completed in consistent and impactful ways on Western Avenue. Harvard has also committed to additional housing at the Brookline Machine site, and will be developing an RFP for development opportunities mid-way through the construction of the Charlesview Residences.

Additionally, the University has participated in two community meetings (June 16th and June 27th) to discuss the Work Team recommendations with Allston community members. As was pointed out at the two Task Force meetings, the recommendations in their current form are not project proposals. They represent the Work Team’s assessment of viable, practical and tangible development steps in Allston that, in their view, can be accomplished in the near term. The University is actively reviewing each of the recommendations and looks forward to working with the City, BRA and community as specific projects emerge from review.

**Relationship Between Work Team and Tata Hall Project**

The BRA’s Scoping Determination requested information on the relationship between the Tata Hall Project and the Work Team Recommendations. The Work Team’s scope was to provide practical, tangible, and viable development options in Allston for the University’s consideration over the next decade. As part of this, projects that had been far along in the planning and design phases, such as Tata Hall, were not included in their scope of work.

With that said, as discussed in more detail in Chapter 6, Urban Design, the design team for the Tata Hall Project is looking at campus pathways and connections that will provide improved connections to the south and southwest, both of which are areas addressed by the Work Team Recommendations and that were the subject of previous planning included in the 2007 IMPNF filing.
Chapter 2.0
Institutional Master Plan Amendment
2.0 INSTITUTIONAL MASTER PLAN AMENDMENT

2.1 Harvard University Mission and Objectives

2.1.1 Harvard College

Harvard College opened in Cambridge, Massachusetts in 1636 with an enrollment of nine students and one Master to teach all subjects. Its mission was to educate the religious and intellectual leaders of the newly settled New England colonies. In 1650, the Great and General Court of Massachusetts approved Harvard’s charter of incorporation as a Massachusetts educational charitable corporation, which established the President and Fellows of Harvard College (a.k.a. the non-profit Harvard Corporation), a governing board that is the oldest corporation in the Western Hemisphere. Expanding its size and extending its geographical boundaries during the 19th and 20th centuries, the College added graduate and professional schools, which now number ten. Its mission, however, has remained essentially the same, though considerably broadened in scope: “to educate the leaders of our complex international society.”

2.1.2 The Allston Campus – Summary of Existing Conditions

Harvard’s presence in Allston originated in 1890 when land was donated to the University to establish athletic facilities. Academic facilities were constructed in the 1920s with the establishment of a campus dedicated to Harvard Business School, which had previously been accommodated in buildings scattered throughout the Cambridge campus. Over time, Harvard has acquired additional lands in Allston for a variety of purposes, including growth of the Harvard Business School and general administration services associated with the University, such as printing, campus police, and the University shuttle service.

As described in the current IMP, Harvard’s existing Allston campus contains approximately 148.5 acres that is institutionally zoned and is located predominantly on land bounded by Soldiers Field Road and Western Avenue. North Harvard Street separates two distinct areas of the campus, with HBS predominantly to the east of North Harvard Street and Harvard Athletics predominantly to the west (see Figure 2-1). The HBS campus encompasses approximately 40 acres of the total IMP area.

This IMP Amendment/DPIR does not propose adding any new land to the IMP Area.
FIG. 2-1: Existing IMP Area

Existing IMP Area (1997 IMP and Subsequent Amendments)

Proposed location for Tata Hall
2.1.3 **Harvard Business School Mission and Objectives**

The Harvard Business School was established in 1908 with a 15 member faculty, 33 regular students, and 47 special students. In the 1920s the school moved from a variety of buildings on the Cambridge campus into a consolidated campus in Allston. Over 100 years after its founding, the school’s academic program is focused on three areas:

1. Master of Business Administration ("MBA") Program - An intensive, two-year residential program leading to an MBA degree;
2. Doctoral Programs - Nine full-time programs leading to a PhD or Doctor of Business Administration ("DBA") degree; and
3. Executive Education - More than 95 programs preparing talented professionals from all over the world for new levels of leadership in their careers and within their organizations.

The mission of HBS is to educate leaders who make a difference in the world.

2.2 **Harvard Business School Executive Education Program**

Harvard Business School was the first business school to launch an Executive Education program; it did so in 1943 with an innovative 15-week "war retraining" program. Executive Education is a crucial component in the cycle of academic research and engagement with practice that has distinguished Harvard Business School since its founding. Ideas that are identified in the field can be developed into case studies that are taught to and tested by participants who come to Executive Education programs; the cases are refined and strengthened as a result of this interaction; managers take the tools and learning they have gained in the programs back to their companies, thus reshaping businesses and communities around the world; and the interaction between participants and faculty members generates new ideas for further research, thus beginning the cycle of academic and curricular research efforts anew.

Because Executive Education at HBS is taught by full-time faculty as part of their standard workload (most other schools employ adjunct faculty), the curricular materials that are developed flow seamlessly into the MBA and Doctoral Programs, enhancing the learning experience for these students as well. Moreover, because Executive Education Programs are shorter and involve fewer numbers of participants than the 900 students in each year of the MBA Program, for example, Executive Education becomes an ideal location for rapid cycle experimentation and innovation. New cases, simulations, and approaches to adapting technology to enhance pedagogy often are tested in Executive Education before being adopted more broadly. Put simply, Executive Education is an important means of ensuring that HBS faculty remain close to cutting edge practices and managers in leading companies in the U.S. and around the world, which in turn enhances all of the school's educational programs.

There were approximately 8,700 participants in Executive Education programs in 2010. Approximately 200 faculty members (more than 75% of the school's faculty) taught in at least one program, reflecting the key role that these Executive Education programs play in enabling faculty to pursue new academic research efforts and innovative curricular and pedagogical
developments. During this time, there were 95 Executive Education programs offered. Of these, 75 were open enrollment Programs (open to individuals, typically sponsored by companies, and focused on a wide range of business topics) and 20 were custom programs (developed in close partnership with a specific company).

Programs range from two days to fifty-three days, and approximately three quarters of the participants stay for one week or less. The programs are intensive and campus centric.

Currently the Executive Education programs are located in several buildings, all of which are located in the northeast corner of the HBS campus. Baker Hall, Mellon Hall, and McArthur Hall each provide residential facilities for program participants. McCollum Center and Hawes Hall provide classrooms and Glass Hall is the administration building. Dining facilities for Executive Education participants are located in Kresge Hall.

2.3 Program Need

Over the past two decades, HBS has significantly expanded its Executive Education operations and infrastructure. McArthur Hall was built in the 1990s to meet the need for living space. The classrooms in McCollum have been supplemented through the addition of new rooms in Hawes Hall, and recently the existing classrooms were refurbished to incorporate the latest advances in technology. Demand for HBS Executive Education programs from leading companies and non-profit organizations from around the world has been on the rise even in the face of the economic uncertainty of recent years.

This growth has been part of a broader strategy to better align HBS programs and offerings with the challenges to, and experiences of, managers and leaders at different stages in their careers. HBS has worked over the past ten-plus years to strengthen and rationalize the portfolio of programs it offers, building on market research, curriculum analysis, and in-depth interviews with corporate clients and past program participants. Today HBS sees a compelling opportunity to further strengthen its leadership in Executive Education through the construction of a new facility—Tata Hall—that would further support the learning experience of managers and leaders who come to HBS.

This Project represents a key component of HBS’s overall objective for on-campus Executive Education, which includes expanding the portfolio of programs outside the United States as well. HBS sees two distinct (if overlapping) needs in the Executive Education arena. The first is for programs here in Boston that brings together managers from around the world who learn from one another. Indeed, many global participants wish to come to Boston so as to learn from their U.S.-based counterparts. The second is for global regionally-based programs that explore issues and topics of particular importance to that region and that can help emerging economies (such as India and China) train the managers and leaders that will be crucial to their economic development; these programs draw participants from within a smaller geography. Over the next decade, HBS sees growing interest among managers and leaders for both these types of programs.
To meet existing needs and accommodate projected future growth of the Executive Education program, HBS is proposing the construction of a new Executive Education building to be called Tata Hall. Although the Project has been envisioned by HBS since before the 1997 IMP, it is being made possible due to a donation from Ratan Tata, Chairman of the Tata Group, a former participant in an HBS Executive Education program who has specified his interest in expanding the Executive Education program.
3.0 PROJECT DESCRIPTION

3.1 Existing Site and Area Context

The site of the proposed Project is in the northeast corner of the HBS campus, to the east of the original HBS campus designed by McKim Mead and White in the late 1920s. In 1952, Kresge Hall was built to the west of the Project site and in the 1970s McCollum Center and Baker Hall were constructed to the northwest of the Project site. More recently, in 1998 McArthur Hall was built as an Executive Education housing facility also to the northwest of the Project site. Figure 3-1 is a Locus Map.

Siting Tata Hall in this location will complete the Executive Education quad, which currently includes McArthur, Baker, and Mellon Halls (residence), McCollum and Hawes (classroom), Kresge (dining), and Glass (administration). An existing conditions survey is provided in Appendix B.

3.2 Proposed Development Program

Tata Hall will combine Harvard Business School's best thinking—and experience—in a building that best supports the specific needs of Executive Education participants as well as state-of-the-art practices in the areas of technology and sustainability. Comprising approximately 150,000 gross square feet (GSF) with six to seven stories and roughly 180 bedrooms at full build-out, the building will also include living group rooms as well as informal gathering spaces for socializing.

The Project incorporates academic, residential and office programs associated with the complete breadth of the Executive Education experience at Harvard Business School. All of the programs at Executive Education are centered on the idea of the Living Group. A living group “unit” comprises eight participants, who share a living and conference area for socializing and study. A typical program comprises 20 or more living groups participating in the same program, split between two classrooms. Each participant attends classes during the day, and the living group gathers before class in the mornings and after class in the evenings to study and prepare assignments together in preparation for the next day’s classes. A major goal of the Project was to include the administrative, academic and residential components in one synthetic whole.

- Bedrooms (approximately 100,000 GSF) – These should be comfortable but fairly austere to encourage students to spend time together rather than alone in their room. Each will have a double bed and private bathroom and will be equipped with a work area (including a computer and phone).

- Living group rooms – Consistent with Baker Hall and McArthur Hall, bedrooms will be clustered in groups of eight around a central living group room that includes meeting space, a kitchenette, and a lounge space with a television.
FIG. 3-1: Locus Map

SITE
- Classroom and academic space – The Project includes two tiered classroom spaces on the first and second floors, as well as office space to support the administrative staff which oversees program delivery.

- Informal gathering space – The Project includes spaces on the first and second floors where participants across living groups might meet to socialize with comfortable seating, televisions, and limited casual food/beverage service.

- In keeping with the established infrastructure of the campus, the Project also includes a tunnel connecting Baker Hall to Tata Hall that will serve as both a utility corridor and a material handling and pedestrian connection.

The building program is shown in Table 3-1.

**Table 3-1  Program**

<table>
<thead>
<tr>
<th>Use</th>
<th>Approximate Gross Floor Area*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>100,000</td>
</tr>
<tr>
<td>Academic</td>
<td>10,000</td>
</tr>
<tr>
<td>Gathering/Circulation</td>
<td>25,000</td>
</tr>
<tr>
<td>Office</td>
<td>10,000</td>
</tr>
<tr>
<td>Building Support/Service</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>150,000</td>
</tr>
<tr>
<td>Height/Stories</td>
<td>Up to 78 feet/7 stories</td>
</tr>
</tbody>
</table>

* Measured in accordance with the Boston Zoning Code.

As discussed in more detail in Chapter 4, there will be no new parking associated with the Project. The great majority of Executive Education participants will arrive and depart in taxis, shuttle buses or other means of public transportation.

A portion of the Tata Hall building, comprising approximately 12,000 square feet on the first floor of the west wing, ultimately to be built out for beds, a tiered classroom and living group meeting space, may possibly be left initially in shell condition to be available as swing space on an interim basis for temporary office, dining and/or other institutional uses in connection with decisions that might be made in the future regarding potential renovations of the Kresge, Glass, McCollum and/or Baker Hall buildings.

The BRA’s Scoping Determination requested information on how the proposed Project differs from the project that was mentioned in the 1997 IMP. The 1997 IMP provided a list of potential new buildings, which included a “Long-Range Executive Education Housing” project which was described as a “50,000-70,000 SF building of 5 to 6 stories [which] will add approximately 80 single accommodations to house Executive Education participants …” The May 2011
IMPNF/PNF included a figure showing the proposed location for this Long-Range Executive Education Housing which was to be located to the southeast of Kresge Hall and to the southwest of the proposed site of Tata Hall.

3.3  **Project Design and Additional Elements Scoped by the BRA**

3.3.1  **Design**

Tata Hall is an important component of the school’s continuing efforts to improve the character of the HBS campus and the relationship between HBS and the river, its neighbors, and the broader context of the City of Boston. The Project comprises a curved bar, oriented generally north-south, connected to an east-west bar at the south side of a new Executive Education quad. The curved form of the building is designed to respond to a number of goals, including the creation of a generous open space on the Charles River activated by a public pathway and a building form that minimizes the sense of a “wall” along the river’s edge. See Figure 6-6.

The lower floors of the building, particularly at the public gathering spaces, are clad in glass. The narrow building, clad in glass on both sides, maintains a sense of transparency and lightness along the river, and allows for views through the building from both sides—from the river and from campus. The upper floors are clad in a light-colored limestone. Again, the light-colored material provides a sense of physical “lightness” to the structure, and heightens the sense of the building touching the ground gently.

Section 6.7 includes a description of landscape improvements that are proposed to be implemented as part of the Project. The comment letters (including those from the Livable Streets Alliance/Walk Boston/AB North Neighborhood Forum/Charles River Conservancy and Houghton Chemical) suggested a number of other landscape or access improvements. While some of these suggestions are of a larger scope and breadth that goes beyond a Project-specific scale, and some involve land or structures that are not owned by Harvard, as Harvard develops a clearer path for its master planning work and continued development in Allston, HBS will continue to investigate these types of landscape, way-finding, and access issues.

Chapter 6 includes a more detailed description of the design of the Project as well as views of the Project.

3.3.2  **Accessibility**

As suggested in comments from the Commission for Persons with Disabilities the design team’s goal is to ensure that the Project is easily accessible for all visitors and staff, including those with disabilities. This ease of access begins with the site, and extends to all aspects of the building design.
Site

It has been a priority of the early design process to generally improve circulation to, from and through the Project site and to ensure that this improved circulation is universally accessible. Following is a brief list of measures taken to ensure this goal is met.

- A continuous network of pathways will be provided to and through the Project site from all directions:
  - From East Drive to the Project site (west);
  - From the Weeks footbridge and Soldiers Field Road (north and east); and
  - From Soldiers Field Park student housing (south).
- A safer, better-lit pathway will be located along the east edge of the site, travelling between the Weeks footbridge and One Western Avenue. This pathway will be set back from Soldiers Field Road, and will be provided with illumination. The setback and lighting will both significantly improve navigation and safety for all users travelling between these two points.
- All pathways will be bituminous pavement, edged with brick. The brick edging is in keeping with the Harvard tradition of brick walkways, while the bituminous surface provides a smoother, more easily navigated surface.
- The slope of all pathways on the Project site will be limited to a maximum of 1:20 slope.
- Curb cuts will be provided with ramps to navigate the grade change, and curb cuts will be provided with tactile warning surfaces to assist those with vision impairment.
- The pathways will be well-lit with a combination of bollard lighting and pole lights to assist navigation and improve security for all users.
- Accessible pathways will be provided to all building entrances.

Building

An important component of the building design is the provision of access to all users for all aspects of the building program—residential, academic and office. To the greatest extent possible, measures have been taken to provide for universal access wherever possible.

Entrances

All building entrances are accessible. The main entrance to the building will be provided with automatic door openers and push-paddles for wheelchair access through the vestibule.
Public Spaces

All public spaces are fully accessible. A central gathering space is located outside the first floor classroom, while a second gathering space is located on the second floor, accessed from the second-floor classroom via a balcony crossing the Atrium. On both the first and second floors are restrooms for academic and public use—both fully accessible.

Bedrooms

There are approximately 180 bedrooms in the Project. Nine bedrooms will be classified as Accessible Bedrooms, compliant with the Group 2B Requirements of 521 CMR. Two of these rooms will be provided with wheel-in showers. Six additional rooms will be provided which can accommodate guests who are deaf or hard of hearing. Most importantly, every room will be provided with an accessible route to and from the room, as well as clear floor space to allow for a full 360-degree wheelchair turning space.

Common Areas

The bedrooms are divided into groups of eight bedrooms, called living groups. Each living group shares a common gathering area which incorporates a soft seating area, a conference area, and a kitchenette. This shared space is an important component of the social and academic life of the Project’s use, and it is critical that all participants can engage fully with the other members of their living group in this space. All of the seating and conference areas are accessible for all users. The furniture can be moved and rearranged as well, to ensure that a user in a wheelchair can participate fully in all activities. The kitchenette in each living group will be universally accessible, including all countertops, cabinets, sinks and appliances.

Academic

The Project includes two 99-seat tiered classrooms, used by participants every day as part of the academic component of the Executive Education programs administered in the building. To provide maximum flexibility for users with disabilities in terms of seating location within the classrooms, all of the seating in the tiered classrooms is movable, and not fixed. This allows for persons in wheelchairs to select a seating location from all seats within the accessible rows, not only at select points. Additionally, an accessible route is provided to both the lowest tier of seats in the front row, as well as to the fifth row of seats in each classroom.

Offices

The Project includes two office areas—a Program office on the first floor of the building, and a larger office area in the basement level of the building. Both of these areas are fully accessible. Transaction counters are set at 34 inches for universal accessibility. Restrooms for staff and faculty (separate from the public restrooms) are wheelchair-accessible. All office, conference, and open office spaces are fully accessible.
3.3.3  Project Lighting

The lighting design for the Project seeks to provide appropriate (but not excessive) light levels throughout the Project, while also minimizing energy usage through fixture selection and controls (the Project goal is to meet or exceed LEED Gold Certification). Additionally, careful consideration will be given to operations and maintenance of fixtures, to minimize the number of unique lamp types and to minimize the maintenance requirements for the selected fixtures. One particular focus of the lighting design for the Project is the desire to make use of light emitting diodes (LED) lighting in every location where feasible as mentioned by the Boston Environment Department in their comment letter. This type of lighting meets the Project goals of high quality lighting, easily-controlled lighting, low-maintenance lighting, and high-efficiency lighting.

Another focus is to minimize light trespass which would disturb adjacent buildings; both of these issues are addressed below.

Atrium

The Atrium, which serves as a multi-story central gathering space for the Project, will take full advantage of daylighting. The lighting strategy in this space is to make use of photo-sensitive lighting controls to respond to varying daylight levels. During the day, the electric lighting will be responsive to the overall daylight levels; during the evening when in use, the Atrium will be provided with warm, even lighting throughout (LED fixtures where possible). When the space is not in use, the lighting will be dimmed to minimize trespass to the adjacent quad area. Additionally, this space has been located to ensure that it does not face onto adjacent residential buildings, but instead across the quad towards Kresge, the Executive Education dining facility. This will further minimize any issues related to light trespass.

Main Lounge

The Main Lounge is located at the north end of the second floor of the building. Again, this space will make use of photo-sensitive lighting controls to minimize electric lighting usage during sunny days, and will be balanced for a variety of outdoor lighting levels. Because it is near McArthur, a residential building, the lighting levels will be carefully controlled late in the evening to ensure that the residents in the adjacent Executive Education residential building are not adversely affected at night.

Classrooms

The two tiered classrooms will be lit only when occupied, and equipped with occupancy sensors to ensure that electric lighting is only used when classes are in session.
Offices

The office areas on the first floor and in the basement will be zoned into multiple areas, and will be tied to occupancy sensors to minimize light usage, particularly during times when fewer staff and faculty are making use of the space. Moreover, each work area will be equipped with task lighting so that the overhead lighting can be kept to an appropriate, but minimal level.

Residential

The residential common areas will be equipped with occupancy sensors to dim lighting levels when not in use. The bedrooms will likewise be equipped with occupancy sensors to minimize electric lighting usage when rooms are unoccupied. Additionally, the corridors and stairs will be tied to occupancy, further diminishing energy usage and unnecessary lighting, particularly during the evening hours. The design team is also considering a 50%, reduced setting for these areas during the night hours to further decrease energy usage and light trespass.

Exterior

Exterior lighting will be based on a campus standard pole light, supplemented by bollard light fixtures along pathways where appropriate. In all cases, outdoor fixtures will be full-cutoff to minimize light pollution to the sky and to focus lighting where it is needed—on the pathways.

Summary

The overall strategy of the Project’s lighting design is to provide the most efficient, most effective lighting only when it is needed. When spaces are not in use, the controls are designed to automatically turn off the lighting. Furthermore, particularly in the public spaces with extensive glazing, the controls are tied to sensors to balance electric lighting with daylight, again to provide the appropriate level of lighting, but not more than needed. Additionally, the design team is exploring ways to reduce lighting levels in the evenings in many spaces to minimize light trespass while still providing sufficient lighting for each space.

3.3.4 Public Access

HBS is improving the public access by providing a perimeter walkway heading south from Weeks Bridge to Western Avenue within the existing fence line separating the campus from Soldiers Field Road. There will be a path running through what will become the Executive Education courtyard formed by Tata Hall, Kresge Hall and McArthur Hall from the Weeks Bridge that will be mainly utilized for access to these buildings, which are not open to the public. Access to Tata Hall will be similar to McArthur Hall as they will both be residential buildings. Tata Hall will have a staffed reception desk during normal business hours where visitors are required to check-in, and will only be accessible by key card during non-business hours.
3.3.5 Public Safety and Security

There is an existing campus wide program for security cameras and security guards, which will be extended for the Tata Hall building and site. There will also be additional emergency call boxes installed at the site consistent with the current program of ensuring that a phone is always visible from another along the pedestrian paths.

3.4 Public Participation

Over the past eight months, the Project has been discussed at meetings of the Harvard-Allston Task Force, City and State agencies, and with advocacy groups. The University looks forward to continuing these discussions as part of the review process for the IMP Amendment/DPIR.

3.5 Public Benefits

The following sections include descriptions of Harvard’s community benefits related to the development of the Allston Campus, the Harvard Business School and Tata Hall specifically.

3.5.1 Harvard Cooperation Agreement Benefits

The BRA’s Scoping Determination requested information on the community benefits currently provided by Harvard that are related to the development of the Allston Campus.

Harvard has a lengthy and robust partnership with the Allston-Brighton neighborhood and the City of Boston, and is an integral part of the Greater Boston community. In April 2008, the BRA and Harvard further strengthened those ties with a Cooperation Agreement that outlined a series of new and expanded Allston community programs and neighborhood enhancements associated with the proposed Allston Science Complex. In spite of the pause in the construction of the Science Complex, and as part of Harvard’s path forward in Allston, Harvard is delivering on its commitment to provide the substantial benefits outlined in the Cooperation Agreement. Since 2008, significant progress has been made to advance the commitments in the Cooperation Agreement in the categories of public realm, education, the Harvard Allston Partnership Fund, and employment.

The most recent Annual Report on the Cooperation Agreement for the Harvard University Allston Science Complex was submitted on March 31, 2011 and can be found on-line at: http://www.bostonredevelopmentauthority.org/pdf/PlanningPublications/Harvard%20Allston_University_Annual_Report_on_the_Cooperation_Agreement_3.31.11.pdf

3.5.2 Harvard Business School Benefits

Beyond those benefits outlined in the Cooperation Agreement, HBS has an extensive and long-standing track record of community benefits and programs targeted towards individuals and organizations in the City of Boston generally and in Allston-Brighton specifically. These include:
HBS has made contributions to a number of local organizations, including the Allston-Brighton Community Development Corporation, Allston-Brighton Little League, Allston Brighton Youth Hockey, the Joseph M. Smith Community Health Center, the Oak Square YMCA, and more.

HBS faculty members are involved in community activities through presentations, pro-bono consulting to local community organizations, and participation on local boards.

HBS has participated for two years running in the Department of Conservation and Recreation Partnership program in the Charles River Basin. Its investments have paid to light the Weeks Bridge along with a number of safety improvements. To date, HBS has invested approximately $250,000 on the Weeks Bridge. As requested by the Charles River Conservancy, HBS will continue to support the lighting of the Weeks Bridge.

Through the Boston Employment Center, an HBS recruiter spends 8-10 hours per month meeting with clients, conducting resume reviews and mock interviews, and advising on job searches.

HBS funds the Leadership Fellows program, which supports full-time fellows working in non-profit and public sector organizations in Boston.

HBS continues to provide space for meetings of local organizations, including the Brighton Board of Trade, the Allston-Brighton Community Development Corporation, the Jackson Mann Community Center, and others.

Through PIC counselors, HBS recruits high school students to work in part-time, paid roles across campus.

HBS supports Year Up, a training program for post high school students. HBS pays for two interns a year who do six-month apprenticeships on the HBS campus.

HBS provides scholarships in its Executive Education program to Boston residents and City employees.

3.5.3 Tata Hall Public Benefits

The Project includes a number of public benefits, including:

- The creation of new, publicly accessible pathways and open space, including a new pedestrian connection within the HBS campus between the Project site and One Western Avenue;

- The investment of approximately $100 million in the economy;
The payment of jobs and housing linkage for the non-residential portions of the Project, the exact amount of which will be determined when the Project’s square footage is finalized;

The Project will enter into a Boston Residents Construction Employment Plan which will outline measures that will be taken to comply with the City’s guidelines for construction jobs for Boston residents, minorities, and women;

The Project will enter into a First Source Agreement and Memorandum of Understanding (MOU) regarding good faith efforts to employ Boston residents in permanent positions;

The creation of approximately 210 new construction jobs during peak periods, with approximately 85 new construction jobs on average days; and

The creation of approximately 20 new permanent jobs.

As required by the BRA’s Scoping Determination, the Proponent will initiate a meeting with the City of Boston Assessing Department on the subject of payment in lieu of taxes with regard to the Project.

3.6 Legal Information

3.6.1 Legal Judgments Adverse to the Proposed Project

There are no legal judgments adverse to the proposed Project.

3.6.2 History of Tax Arrears on Property

Harvard does not have a history of tax arrears on property that it owns in the City of Boston.

3.6.3 Evidence of Site Control/Nature of Public Easements

The Project site is owned by Harvard University.

3.7 Consistency with Zoning

The Project site is located within the Harvard University Institutional Subdistrict of the Allston-Brighton Neighborhood District. The Project site is also located within Harvard’s IMP Area and a portion of the site is located within the Greenbelt Protection Overlay District (“GPOD”).

Underlying zoning establishes a maximum building height of 55 feet and a maximum Floor Area Ratio of 1.0. Certain minimum setback and lot size requirements also apply to the Project site. “College or University” uses are allowed uses within this subdistrict.

Upon approval of this IMP Amendment by the BRA and the Boston Zoning Commission, all existing uses and structures described in the IMP as amended hereby, and all Proposed Institutional Projects consistent with the provisions of the IMP, as amended will be deemed to be
in compliance with the use, dimensional, parking and loading and other requirements of underlying zoning (including special purpose overlay districts) and may be reconstructed after casualty, notwithstanding any provision of underlying zoning to the contrary and without the requirement of further zoning relief or IMP approval, subject to the BRA design review process. IMP approval will also constitute GPOD approval for the Project, subject to review and comment by the Boston Parks Commission in accordance with Section 29-5.1 of the Boston Zoning Code (the “Code”).

For any such existing uses or structures and Proposed Institutional Projects located on multiple contiguous parcels or lots, any yard, setback or other dimensional requirements will be measured at the exterior property lines of the IMP Area, and will not apply to any interior lots that may exist or be created within the IMP Area. Height will be measured from grade to the top of the last occupied floor. Gross Floor Area and Floor Area Ratio will be calculated as provided in Article 2A of the Code.

Prior to the issuance of a building permit for a Proposed Institutional Project that is not exempt from IMP review, the BRA must issue a Certification of Consistency pursuant to Section 80D-10 of the Code stating that the Project is consistent with the University’s IMP.

3.8 Regulatory Controls and Permits

Table 3-2 below presents a list of agencies from which permits or other actions are anticipated to be required.

Table 3-2 List of Anticipated Permits and Approvals

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval/Review Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Boston</td>
<td></td>
</tr>
<tr>
<td>Boston Civic Design Commission</td>
<td>Schematic design review</td>
</tr>
<tr>
<td>Boston Parks and Recreation Commission</td>
<td>Review and Approval</td>
</tr>
<tr>
<td>Boston Redevelopment Authority</td>
<td>Article 80 IMP Amendment approval; Article 80 Large Project Review</td>
</tr>
<tr>
<td>Boston Transportation Department</td>
<td>Transportation Access Plan Agreement (“TAPA”); Construction Management Plan (“CMP”)</td>
</tr>
<tr>
<td>Boston Water and Sewer Commission</td>
<td>Water and sewer connection permits; Site Plan Review; Construction Dewatering Permit</td>
</tr>
<tr>
<td>Boston Zoning Commission</td>
<td>Article 80 IMP Amendment approval</td>
</tr>
<tr>
<td>Inspectional Services Department</td>
<td>Building and Occupancy Permits</td>
</tr>
<tr>
<td>State</td>
<td></td>
</tr>
<tr>
<td>Executive Office of Energy and Environmental Affairs, MEPA Office</td>
<td>Request for Advisory Opinion (see below)</td>
</tr>
<tr>
<td>MassDEP Division of Water Pollution Control</td>
<td>Sewer extension/connection permit (self certification); Groundwater discharge permit (if required)</td>
</tr>
</tbody>
</table>
Table 3-2  List of Anticipated Permits and Approvals (Continued)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Permit/Approval/Review Process</th>
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<tbody>
<tr>
<td>State</td>
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</tr>
<tr>
<td>MassDEP Division of Watershed Management, Chapter 91 Program</td>
<td>Minor Modification to Chapter 91 License (for below-grade utilities and construction staging)</td>
</tr>
<tr>
<td>Massachussetts Historical Commission</td>
<td>State Register Review</td>
</tr>
<tr>
<td>Massachussetts Water Resources Authority</td>
<td>Sewer use permit (if required);\textsuperscript{1} Construction dewatering permit (if required)</td>
</tr>
<tr>
<td>Federal</td>
<td></td>
</tr>
<tr>
<td>US Environmental Protection Agency</td>
<td>National Pollutant Discharge Elimination System – Stormwater Construction General Permit</td>
</tr>
</tbody>
</table>

\textsuperscript{1} Modifications to existing Allston campus MWRA permit

3.9  Applicability of the Massachusetts Environmental Policy Act

The Project as currently designed does not meet any of the requirements which would trigger a filing under the Massachusetts Environmental Policy Act (“MEPA”). On August 8, 2007, the Secretary of Energy and Environmental Affairs issued a certificate on the Expanded Environmental Notification Form filed by Harvard University for the Allston Campus Twenty Year Master Plan. On September 14, 2007, the Secretary issued a certificate establishing special review procedures (“SRP”) governing MEPA review of the Master Plan. On October 16, 2007, the Secretary issued a Record of Decision for a Phase I Waiver allowing construction of the “Science Complex Project” prior to approval by the Secretary of the Master Plan Environmental Impact Report (“EIR”). The SRP identifies the process to be followed for MEPA review of individual projects subsequent to the approval of the Master Plan EIR. Consistent with the SRP, and subsequent direction from the Executive Office of Energy and Environmental Affairs and notwithstanding the fact that the Project itself does not meet any of the requirements which would trigger a MEPA filing, Harvard will seek guidance from the Secretary to determine whether, under the circumstances, any further MEPA review of this Project is required.

3.10  Development Schedule

Construction is anticipated to begin in November 2011, and building occupancy in the fall of 2013.
TRANSPORTATION

This section presents an overview of existing transportation conditions including an inventory of existing campus parking, an assessment of potential long-term impacts of the proposed Tata Hall building, and a discussion of construction-related transportation impacts and the proposed program to manage these impacts. The following summarizes the key findings of the transportation analysis for Tata Hall.

- The proposed Project is not expected to have any noticeable effects on area traffic conditions increasing daily traffic on adjacent streets by less than one percent, and will not require changes or improvements to the adjacent public street system.

- No additional parking spaces will be created to serve the Project because the Executive Education participants rarely arrive by private automobile.

- Operational improvements will be implemented on East Drive to accommodate the anticipated increases in taxicab demand at this entrance to the Harvard Business School.

- A Construction Management Plan will be coordinated with the Boston Transportation Department (“BTD”) to minimize potential construction-related transportation impacts.

The discussion of existing conditions also updates the campus parking inventory that was included in the 1997 IMP.

4.1 Existing Conditions

Since the 1997 IMP and the 2002 IMP Amendment, there have been improvements to the transportation network serving the Tata Hall site and the Allston campus. This section describes existing transportation conditions, recent improvements, as well as planned improvements to the transportation network.

4.1.1 Pedestrian Network

The area benefits from an extensive network of sidewalks and pedestrian paths that provide a good alternative for on- and off-campus travel by participants in the Executive Education program. HBS has a dense network of campus pathways that provide internal connections as well as links to the system of public sidewalks and paths that are on the periphery of the campus. The surface connections are complemented by an internal network of tunnels connecting buildings on the campus.

The public sidewalks and paths are primarily under the jurisdiction of the Department of Conservation and Recreation (“DCR”), the Massachusetts Department of Transportation (“MassDOT”), and the City of Boston. DCR has jurisdiction over the mixed use paths along the Charles River and along Soldiers Field Road and the pedestrian bridges that cross Soldiers Field Road (the Sinclair Weeks Bridge) and the Charles River (the John W. Weeks Bridge). MassDOT
has jurisdiction over the sidewalks on the Anderson, Western Avenue and River Street bridges. These bridges and their sidewalks will be reconstructed over the next five years. The reconstruction projects will also include pedestrian crossing improvements at the adjacent intersections on Soldiers Field Road and Memorial Drive.

Public streets adjacent to the University are under the jurisdiction of the City of Boston. Western Avenue and North Harvard Street have eight to ten foot wide sidewalks on both sides of the streets that are generally in good condition. In 2007, the University reconstructed sidewalks on North Harvard Street and, more recently, the University reconstructed sections of the Western Avenue sidewalks. The University is currently working with the BRA on a program to further enhance the pedestrian environment along Western Avenue.

4.1.2 Bicycle Network

The bicycle network around HBS has improved over the last two years and additional improvements are planned in the near future. In 2009 and 2010, the University collaborated with the City of Boston to install bike lanes on North Harvard Street between Western Avenue and Soldiers Field Road, and on Western Avenue between North Harvard Street and Soldiers Field Road. MassDOT plans to add bicycle facilities on the Anderson, Western Avenue and River Street bridges as part of planned bridge repair work. These improvements have augmented the existing DCR bike paths that are located along the Charles River.

In addition, the University is working with the City of Boston to install bike share stations in Allston as part of the City’s Hubway Bike Sharing System. A station is proposed for the Soldiers Field Park residences, which is a two minute walk from the proposed Tata Hall site as well as the Innovation Lab. The shared bike concept will provide a non-auto option for participants in the Executive Education program at Tata Hall when they choose to travel off-campus during their program.

4.1.3 Shuttle and Transit Services

Harvard University runs a shuttle bus that loops and connects HBS with Harvard Square and other Cambridge Campus destinations. This service will provide a convenient transit option to Harvard Square for participants in the Executive Education program. The shuttles loop around the HBS campus making three stops that are within a three to five minute walk of Tata Hall: at the Soldiers Field Park Garage on East Drive, at Gordon Circle and on North Harvard Street in front of Cotting House. This service will be expanded as part of HBS’s Innovation Lab project and will run from 7:30 a.m. to midnight on weekdays with frequent 10-15 minute service and limited evening service on weekend evenings during the academic year.

Four Massachusetts Bay Transportation Authority (“MBTA”) bus routes—Routes 66 and 86 on North Harvard Street and Routes 70 and 70A—also serve the HBS campus. Route 66 runs between Harvard Square and Dudley Station on 7-10 minute peak hour headways. Route 86 runs between Sullivan Square and Cleveland Circle on 10-20 minute peak hour headways. Routes 70
and 70A travel between Central Square and points west (i.e., Watertown and Waltham). Route 70 operates on 10-20 minute peak hour headways; Route 70A operates on 30 minute peak hour headways. The Route 66 and 86 buses stop on North Harvard Street in front of Cotting Hall and Routes 70 and 70A stop on Western Avenue in front of One Western Avenue.

### 4.1.4 Traffic

There are four major roadways in the vicinity of HBS: the MassPike/I-90, Soldiers Field Road, Western Avenue and North Harvard Street. The MassPike, which is a toll road under the jurisdiction of MassDOT, is an interstate highway with an interchange that is located approximately one-quarter mile from HBS. The MassPike provides regional connections to downtown Boston, Logan Airport, and the larger regional highway system that serves metropolitan Boston and New England.

Soldiers Field Road, which is under the jurisdiction of DCR, is adjacent to HBS with interchanges at Western Avenue and North Harvard Street. Soldiers Field Road is a parkway that is restricted to travel by autos and permitted vehicles only. This roadway connects Allston with downtown Boston, Back Bay, Cambridge, and communities to the west like Watertown and Newton.

Western Avenue is a two-way, east-west arterial roadway under the jurisdiction of the City of Boston with daily weekday traffic volumes of approximately 12,300 next to HBS. The roadway has one lane in each direction, turn lanes at signalized intersections, and striped bike lanes. On-street parking is located across the street from HBS in a floating parking lane that protects an on-road cycle track and is next to Charlesview. The roadway width, including parking, varies from approximately 44 to 46 feet in the section between North Harvard Street and Western Avenue.

North Harvard Street is a two-way, north-south roadway under the jurisdiction of the City of Boston with daily weekday traffic volumes of approximately 8,200 next to HBS. The roadway has one lane in each direction, turn lanes at signalized intersections and at Gate 8 (Harvard Stadium), and striped bike lanes. On-street parking is located next to Charlesview and Shad Hall. The roadway width, including parking, is 40 feet between Western Avenue and Soldiers Field Road.

### 4.1.5 Parking

There is limited on-street parking near the HBS campus. There are five two-hour and five handicapped parking spaces on North Harvard Street, and 15 unregulated parking spaces on Western Avenue immediately adjacent to the HBS campus. There are another 50 parking spaces on North Harvard Street and Western Avenue next to the Charlesview apartments.

All University parking lots are controlled and administered by Harvard Campus Services as a University-wide resource with a permitting system and specific parking lot assignments (but not individual parking space assignments). Visitor parking is accommodated at the Spangler Lot through the use of daily permits, which currently cost $13/day, and, for short-term parking,
through the use of solar-powered multi-space meters at the Athletics complex and in the Spangler lot. The multi-space meters currently charge a fee of $0.25/15 minutes for a maximum of four hours. Parking is also designated for Zipcars, Low Emission Vehicles (“LEV”) and High Occupancy Vehicles (“HOV”).

Access and egress to the lots and garages is provided by unsignalized driveways that connect to public ways or internal campus roadways. The Spangler lot and the two garages are gate controlled while the smaller lots are barrier-free. Gate-control facilities are activated by transponders or cards (e.g., visitors). The following provides an overview of each facility including access and types of users that are typically in the lots or garages.

♦ 219 Western Avenue/175 North Harvard Street – Two connected surface parking lots with 120 spaces, not including spaces used for storage of University maintenance vehicles, shuttle buses, van, and other service and delivery vehicles. Access and egress is provided by two-way driveways on North Harvard Street and Western Avenue. These lots serve employees and visitors to these facilities, including the Education Portal. Regulations are posted for short-term parkers and a Zipcar is stationed in this lot.

♦ 230 Western Avenue (Teele Hall) – A single surface parking lot with 111 spaces connected to Western Avenue by a pair of one-way driveways (one entrance, one exit). The lot serves employees and visitors to Teele Hall.

♦ Athletics – Multiple surface parking lots with a total of 241 spaces (not including spaces used for storage of University vehicles) that are connected by an internal service roadway to North Harvard Street at a two-way driveway (Gate 8). The lot is used by University faculty, staff, students, and visitors. Fifty-six of the 241 parking spaces are short-term (four hours or less) parking spaces that are regulated with solar powered multi-space meters, and eight other spaces accommodate two-hour parking for vehicles with University permits.

♦ Spangler Lot – A total of 675 parking spaces in the main parking lot in front of Spangler Hall and a smaller lot to the west of Batten Way. The main lot is used by University faculty, staff, students, and visitors. It has a staffed, gate-controlled entrance and exit, which facilitates parking by individuals with day permits, that is located on Batten Way approximately 350 feet from Western Avenue. The lot also has two other gate-controlled exits: one at Batton Way and one to a driveway that connects to Western Avenue. In the larger lot, there are 15 short-term (four hours or less) parking spaces that are regulated with multi-space meters, nine designated LEV spaces, seven designated HOV spaces, three Zipcar parking spaces, three spaces for Relay Rides carsharing, and two auto spaces that can be used for motorcycle and motorscooter parking. There are eleven designated parking spaces and eleven designated drop-off/pick-up spaces near East Drive for the Soldiers Field Park daycare center. The smaller lot has an ungated driveway connection at Batten Way and is used by University faculty, staff, and students.
- **Soldiers Field Park Garage** – This seven-level garage with 645 parking spaces is used by faculty, staff, and students of the University, as well as construction contractors. The garage is gate-controlled with an entrance/exit approximately 200 feet from Western Avenue, providing sufficient storage for vehicles entering and exiting the garage.

- **One Western Avenue** – This three-level garage with 617 parking spaces is primarily used by residents of One Western Avenue and Soldiers Field Park. The garage connects to the lower level of the Soldiers Field Park Garage and uses that facility’s entrance/exit on East Drive.

- **25 Travis Street** – A single surface parking lot with 55 spaces connected to Travis Street by a driveway. The lot serves employees and visitors to 25 Travis Street.

- **1230 Soldiers Field Road** – A single surface parking lot with 58 spaces connected to Everett Street by a driveway. The lot serves employees and visitors to 1230 Soldiers Field Road.

The current inventory has 2,642 parking spaces consistent with the number of spaces that were permitted in the 1997 IMP and the 2002 IMP Amendment. These spaces are used by employees, others with business at the University, and visitors and do not include spaces used for storage of University maintenance vehicles, shuttle buses, van, and other service and delivery vehicles. Table 4-1 presents the existing Allston campus parking supply.

**Table 4-1   Existing Allston Campus Parking Supply**

<table>
<thead>
<tr>
<th>Parking Lot Location</th>
<th>Number of Spaces</th>
<th>1997/2002²</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>219 Western Avenue/175 North Harvard Street</td>
<td>227</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>230 Western Avenue (Teele)</td>
<td>111</td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>Athletics</td>
<td>142</td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>Spangler Lot</td>
<td>980</td>
<td>675</td>
<td></td>
</tr>
<tr>
<td>Soldiers Field Park Garage</td>
<td>794</td>
<td>645</td>
<td></td>
</tr>
<tr>
<td>One Western Garage</td>
<td></td>
<td>617</td>
<td></td>
</tr>
<tr>
<td>Designated Visitor Parking</td>
<td>59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>109 Western Avenue (Overflow)</td>
<td>216</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 Travis Street</td>
<td>55</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

1  Does not include spaces that were approved as part of the Harvard Allston Science Complex.
2  25 Travis and 1230 Soldiers Field Road were permitted in a 2002 IMP Amendment.
Table 4-1  Existing Allston Campus Parking Supply (Continued)

<table>
<thead>
<tr>
<th>Parking Lot Location</th>
<th>Number of Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1997/2002</td>
</tr>
<tr>
<td>1230 Soldiers Field Road</td>
<td>58</td>
</tr>
<tr>
<td>Innovation Center</td>
<td></td>
</tr>
<tr>
<td><strong>Total Allston Campus Parking Spaces</strong></td>
<td><strong>2,642</strong></td>
</tr>
</tbody>
</table>

Harvard manages its parking supply to respond to changing demands within the context of the approved parking inventory. While the number of parking spaces has not changed, the location of some of the parking spaces has changed since the previous IMP filings. Most significantly, the amount of parking in structured garages has increased with the construction of the One Western parking garage: nearly half (48 percent) of the current inventory is located in structured parking, up from 30 percent in 2002.

There have also been changes to specific parking facilities. Spaces were lost in the Soldiers Field Park Garage to accommodate circulation into and out of the One Western garage—both facilities share a common entrance on East Drive—and to accommodate the support columns for wind turbines that were recently installed on the roof. Surface parking at the Spangler Lot was reduced to accommodate landscaping and the development of the Innovation Lab. The 219 Western Avenue/175 North Harvard Street was reduced to accommodate increased landscaping, space for the Farmer’s Market and the addition of recycling operations at this facility. Parking was added as part of the Innovation Lab and at Athletics to accommodate the demand from an increased number of community programs and the loss of on-street parking on North Harvard Street.

4.2 Assessment of Future Transportation Conditions

Tata Hall will contain approximately 180 beds. Twenty new staff positions will be created to service and maintain the building. The faculty will be drawn from existing faculty on campus. This section describes the travel characteristics of the Executive Education participants and new staff.

4.2.1 Executive Education Participants

More than 90 percent of the participants in the program are from outside New England. These participants will typically fly into and out of Logan Airport. Some participants may travel via intercity rail, such as Amtrak’s Northeast Corridor Acela service at Back Bay station or the Downeaster service at North Station. These participants will use taxicabs or limousine services to travel on either I-90 or Soldiers Field Road/Storrow Drive to the campus. HBS’s Executive Education website provides information about travel options including the MBTA, Amtrak, and cab/car services. The traffic impacts of the regional connections will have minimal noticeable
effects because participants will typically arrive and depart during non-peak commuting hours. Furthermore, the regional highway ramp system is located approximately one-quarter mile from the East Drive campus entrance, resulting in limited use of the local street network.

Arrivals and departures will be spaced throughout the week depending on the start and finish dates of each Executive Education program at Tata Hall. Approximately 75-80 percent of participants will arrive on weekends, primarily on Sundays. The highest concentration of departure activity is anticipated to occur on Fridays when approximately half of the programs end. Most of the departures will occur in the afternoon between noon and 5:00 p.m. according to the airline schedule of the participants.

Program coordinators will arrange for and encourage the use of shuttle buses to travel from the HBS campus to the airport on departure day. Pickups will occur in front of or near Kresge Hall and buses will exit to North Harvard Street via Harvard Way. On a typical Friday, it is anticipated that three to four round-trip shuttle bus trips will be scheduled during the afternoon to transport participants to the airport and that this will accommodate the travel needs of approximately half of the program participants. Ten percent of the participants will depart via private auto, generating nine vehicle trips. Approximately 40 percent of the participants will depart using taxicabs or private limousines. If half of the participants share a cab with another participant, this will generate 24 departure and 24 arrival trips. In total, there will be approximately 60 vehicle trips generated on a typical Friday afternoon, most traveling to the MassPike via Western Avenue and the Soldiers Field Road service roadway next to Genzyme.

Participants have limited free time to leave the campus. The Executive Education programs are highly intensive and most days are filled with on-campus class time, workshops and social events that encourage interaction among participants. Participants will walk to and from these activities. Most of the services required by program participants (e.g., athletic facilities, post office, bank, and dry cleaning services) are also found on campus and within convenient walking distance of the housing facility. Participants will walk or use taxicabs, MBTA service or the Harvard University shuttle service to travel off campus when necessary. Participants will also have the opportunity to bicycle by renting a shared bike from a new Hubway station in Soldiers Field Park, or use one of the Zipcars that are parked in the Spangler Lot.

When participants leave campus, they tend to do so during the afternoon and evening and travel in a group. These trips are typically made to Harvard Square and other nearby destinations for shopping and dining. It is estimated that participants leave campus twice a week for an average of 55 participants leaving campus on a typical day. It is estimated that only ten percent of the participants will have access to a private vehicle for these trips and that only half would use their car, resulting in six vehicle trips on a typical day (three trips leaving and three trips returning to campus). The remaining 52 participants will carpool with these three participants, walk, take the Harvard shuttle bus or use taxicabs or Zipcars. Some may take transit depending on the destination. It is estimated that up to 50 percent of the 52 participants will take cabs and the rest will take a non-auto mode. If two-thirds of the taxi riders share a cab with another participant,
this will generate 34 taxicab trips (17 trips leaving and 17 trips returning). This conservative approach indicates that a typical day will add 40 or fewer daily vehicle trips for off-campus travel by participants in the Executive Education program at Tata Hall.

4.2.2 Staff

Twenty new staff positions will be created to service and maintain the building. Based on BTD mode shares for this section of the city, approximately 59 percent will drive, 18 percent will take transit and 23 percent will walk or bike. Twelve people will drive; four will take transit, and four will walk or bike. This results in 22 vehicle trips (11 arriving and 11 departing) with a vehicle occupancy rate of 1.1 persons per vehicle.

4.3 Taxicab Operations

The previous analysis indicates that there will be increased taxicab activity on East Drive because of the proposed Tata Hall Project. The main taxicab stand for the campus is located on East Drive near the Soldiers Field Park Garage. This stand is currently at or above capacity during some midday hours and is particularly busy on Fridays. Operational improvements will be implemented at the East Drive stand to accommodate increased demand for taxicabs and to reduce the potential adverse impacts of taxicabs queuing beyond the stand. This could include a designated staging area along East Drive for taxicabs to queue off-street before entering the designated taxicab stand.

4.4 Loading

Loading will primarily occur at the Central Receiving facility next to Batten Way. This loading dock facility has a dock manager, four loading bays, one informal loading area, and a separate designated area for a dumpster. There is sufficient room for single-unit box trucks and tractor-trailers to enter and exit the loading docks without backing into or out of the public way. The Central Receiving Facility is connected to the HBS tunnel system that will be extended to Tata Hall. Some small package deliveries may occur at Tata Hall. These deliveries will use East Drive and Harvard Way to access the building and will not park on adjacent public ways.

4.5 Construction Management

Construction vehicles will move materials to and from the site via Western Avenue and East Drive. Staging areas will be identified and police details will be used to control traffic, as required. In addition, the construction Project will generate demand for construction worker parking. Workers will be encouraged to use non-auto modes, but recognizing that many workers will choose to drive to the site, the University anticipates that the Soldiers Field Park Garage will be used to accommodate worker parking. The University will submit a Construction Management Plan (“CMP”) to BTD that addresses these issues.

A full Construction Impact section is included Section 5.11.
Chapter 5.0
Environmental Protection Component
5.0 ENVIRONMENTAL PROTECTION COMPONENT

5.1 Pedestrian Level Winds

5.1.1 Introduction

Based on experience from hundreds of wind-tunnel studies performed at Cermak Peterka Petersen (CPP) over the last 30 years, CPP considered the pedestrian-level wind conditions resulting from the development of the proposed Tata Hall Project. The discussion of likely wind conditions on and around Tata Hall includes public spaces and the building itself. In general, pedestrian level wind impacts from the proposed Project on itself and its surroundings are expected to be minor and limited to those areas immediately adjacent to the site on the HBS campus. The proposed Project is not expected to impact pedestrian level winds beyond the HBS campus. Boston is a moderately windy city, with average wind speeds of approximately 12 mph (5 m/s), and about five percent of the time the wind speed is in excess of about 26 mph (12 m/s). The prevailing strong and common winds are from the southwest to northwest with less frequent winds from the east.

The site is surrounded by comparably-sized buildings to the west and south, with an open river exposure from the north and east (see Figure 3-1). The similarly sized buildings to the west will mitigate the most common and strongest winds at Tata Hall. However, the Project will be affected by the less frequent winds from the east.

5.1.2 Wind Impacts

Beginning on the west side of Tata Hall, the new quadrangle formed by Tata, McArthur and Kresge Halls will likely be well shielded from any adverse winds and may be an improvement over the current condition. This is because the predominant winds, as noted above, are from the west and will have already come across the HBS campus with its buildings and tree canopy. Kresge Hall, as a comparably sized structure to Tata Hall, will help shield the new quadrangle created by Tata Hall. Westerly winds are expected to go over Tata Hall rather than into the new quadrangle.

Due to the locations of the Tata Hall main entries on the west side of the building and the southern internal corner, both locations are shielded by Kresge Hall protecting the entries from westerly winds. With trees being considered on the southwest and northwest corners of the new quadrangle, the quadrangle is expected to be comfortable in regard to wind. Within the newly created quadrangle, the existing outdoor terrace area at Kresge Hall and the proposed outdoor terrace on the west side of Tata Hall will be used for eating or receptions. Both of these ground level terraces are anticipated to be comfortable as well. There may be some wind impact on the open space area just to the south at Soldier’s Field Park. However, as noted above, it is likely that the comparably-sized buildings to the west will shield stronger westerly winds, as would existing upwind foliage. Thus, the flow is currently not anticipated to penetrate to ground level in this area. Additionally, the landscape plans call for added trees in the areas to the northwest of this...
open space, which would minimize any impacts. To the east of the building, there is little wind impact expected. Given the predominant westerly winds, the existing path along the west side of Soldier’s Field Road, as well as the new pedestrian path proposed just to the west of that towards Tata Hall are both expected to be comfortable for pedestrian use. In fact, it is likely that the wind conditions will be an improvement from the existing circumstances. The wind conditions on the path along the river to the east of Soldier’s Field Road are expected to be unchanged from its current conditions (i.e. Tata Hall is too far away to impact wind conditions in this area).

Likewise, Tata Hall is not anticipated to have a pedestrian level wind impact on pedestrians on the Weeks Bridge crossing Soldier’s Field Road.

The development of Tata Hall is not expected to influence wind conditions in the area between McArthur Hall and Tata Hall. Wind conditions in this area are also expected to be similar to current conditions. Due to the presence of all the buildings to the west of Tata Hall and McArthur Hall, as well as the extensive canopy, the proposed paths between Tata Hall and McArthur Hall are anticipated to be comfortable, as are the existing paths between Kresge Hall and McArthur Hall. Currently, the area to the east of McArthur Hall, just south of the Week’s Bridge over Soldier’s Field Road, is likely subject in winter to occasional strong northeasterly winds. The addition of Tata Hall is not anticipated to have an impact one way or the other on this existing condition.

The less common strong winds from the eastern sector may generate some localized downwash and acceleration at the northeast and southeast corners of Tata Hall—in the order of 15 to 20 feet from the corners of the building. This effect is relatively unlikely to occur, but HBS intends to place ground cover at these areas and keep paths away from these corners to direct pedestrians away from these areas and minimize any impact. In addition, these conditions are expected to be uncommon due to the infrequent nature of the winds from the east. The wind conditions on the rest of the easterly open space defined by the arc of the building is expected to be unchanged for easterly winds and be markedly improved for the common westerly winds due to the shielding provided by Tata Hall.

In general, pedestrian level wind impacts from the proposed Project on itself and its surroundings are expected to be minor and limited to those areas immediately adjacent to the site on the HBS campus. The proposed Project is not expected to impact pedestrian level winds beyond the HBS campus. The wind conditions in the new quadrangle space created by Tata Hall may be improved over current conditions, and the lawn space to the east of the building will generally be in a leeward wind shadow, improving conditions there as well.
5.2 Shadow Impacts

5.2.1 Introduction and Methodology

As required by the BRA’s Scoping Determination, a shadow impact analysis was conducted to investigate shadow impacts from the Project during three time periods (9:00 a.m., 12:00 noon, and 3:00 p.m.) during the summer solstice (June 21), autumnal equinox (September 21), vernal equinox (March 21), and the winter solstice (December 21). In addition, shadow studies were conducted for the 6:00 p.m. time period during the summer solstice and autumnal equinox.

The shadow analysis presents net new shadow from the building, as well as the existing shadow, and illustrates the incremental impact of the Project. The analysis focuses on public open spaces, major pedestrian areas, and the sidewalks adjacent to and in the vicinity of the Project site. As the site is currently undeveloped, the new building will create new shadow in the surrounding area. Shadows have been determined using the applicable Altitude and Azimuth data for Boston.

New shadow from the Project will be generally limited to the HBS campus and the immediate area surrounding the Project site. In addition to the pathways and green spaces on the HBS campus, other open spaces in the area include the Charles River Reservation and the Charles River. The Project will not cast new shadow on the Charles River Reservation or the Charles River during 12 of the 14 time periods studied. The Project will not cast new shadow on Soldiers Field Road during eight of the 14 time periods studied. New shadow will not be cast on other off campus open spaces in the vicinity of the Project.

5.2.2 Vernal Equinox (March 21)

During the vernal equinox, new shadow will be limited to the HBS campus. No new shadow will be cast onto the Charles River, the Charles River Reservation, Soldiers Field Road or other off campus open spaces in the area.

New shadow created on the vernal equinox is illustrated in Figures 5.2-1 through 5.2-2.

5.2.3 Summer Solstice (June 21)

During the summer solstice, new shadow will generally be cast onto the pathways and green spaces on the HBS campus that surround the Project. At 6:00 p.m., new shadow will be cast onto small portions of Soldiers Field Road. No new shadow will be cast onto the Charles River or the Charles River Reservation or other off campus open spaces in the area.

New shadow created on the summer solstice is illustrated in Figures 5.2-3 through 5.2-4.
5.2.4  

**Autumnal Equinox (September 21)**

During the autumnal equinox, new shadow will generally be limited to the HBS campus. At 3:00 p.m., new shadow will be cast onto a minor portion of Soldiers Field Road. At 6:00 p.m., new shadow will be cast across Soldiers Field Road and onto the Charles River Reservation and Charles River. No other off campus open spaces will be impacted by new shadow from the Project.

New shadow created on the autumnal equinox is illustrated in Figures 5.2-5 through 5.2-6.

5.2.5  

**Winter Solstice (December 21)**

The winter solstice creates the least favorable conditions for sunlight in New England. The sun angle during the winter is lower than in any other season, causing the shadows to elongate and create considerable shadow in the area.

During the winter solstice, new shadow will be cast onto the pathways and green spaces surrounding the Project. At 9:00 a.m. and 12:00 p.m., new shadow will be cast onto small portions of Soldiers Field Road. At 3:00 p.m., new shadow will be cast across Soldiers Field Road and onto the Charles River Reservation and Charles River. No other off campus open spaces will be impacted by new shadow from the Project.

New shadow created on the winter solstice is illustrated in Figures 5.2-7 through 5.2-8.

5.2.6  

**Conclusions**

As the site is currently undeveloped, the Project will create new shadows in the surrounding area. Shadows will be generally limited to the immediate area surrounding the site including the surrounding pathways and green spaces within the HBS campus. The Project will not cast new shadow on the Charles River Reservation or the Charles River during 12 of the 14 time periods studied. New shadow from the Project will be cast onto the Charles River Reservation only during the 6:00 p.m. time period on September 21 and the 3:00 p.m. time period on December 21. The Project will not cast new shadow on Soldiers Field Road during eight of the 14 time periods studied. New shadow on Soldiers Field Road will generally occur during the afternoon and evening hours, as well as during all hours in December. New shadows from the Project will not be cast onto other off campus open spaces in the surrounding area.
FIG. 5.2-1: Shadow Studies:
March 21, 9:00 a.m. and 12:00 p.m.
SHADOW STUDIES: Harvard Business School Campus

March 21, 3:00 pm

FIG. 5.2-2: Shadow Studies:
March 21, 3:00 p.m.
FIG. 5.2-3: Shadow Studies: Harvard Business School Campus

June 21, 9:00 a.m. and 12:00 p.m.
FIG. 5.2-4: Shadow Studies:
June 21, 3:00 p.m. and 6:00 p.m.
FIG. 5.2-5: Shadow Studies:
September 21, 9:00 a.m. and 12:00 p.m.
SHADOW STUDIES: Harvard Business School Campus
September 21, 3:00 pm

SHADOW STUDIES: Harvard Business School Campus
September 21, 6:00 pm

NOTE: Shadows from Tata Hall fall on the Charles River but do not touch Cambridge.

FIG. 5.2-6: Shadow Studies:
September 21, 3:00 p.m. and 6:00 p.m.
SHADOW STUDIES: Harvard Business School Campus

December 21, 9:00 am

SHADOW STUDIES: Harvard Business School Campus

December 21, 12:00 pm

FIG. 5.2-7: Shadow Studies:
December 21, 9:00 a.m. and 12:00 p.m.
FIG. 5.2-8: Shadow Studies:
December 21, 3:00 p.m.
5.3 **Daylight Analysis**

5.3.1 **Introduction**

The purpose of the daylight analysis is to estimate the extent to which a proposed project will affect the amount of daylight reaching the public streets, sidewalks, and open areas in the immediate vicinity of a project site. In addition, some of the commenters, including the Charles River Watershed Association, requested further information on whether the Project will result in a canyonization of the Charles River. The daylight analysis for the Project considers the future daylight conditions from three viewpoints on the east and west sides of the proposed building, as well as looking south at the building from the proposed Executive Education Quad. For the area context, two viewpoints were chosen looking at Mellon Hall, and one viewpoint was chosen for McArthur Hall and Kresge Hall. The analysis shows that the proposed building will have similar or lower daylight obstruction values than the surrounding HBS campus.

5.3.2 **Methodology**

The daylight analysis was performed using the Boston Redevelopment Authority Daylight Analysis ("BRADA") computer program. This program estimates the percentage of sky-dome that will be obstructed by a project and is a useful tool in evaluating the percentage of obstruction from the proposed build condition.

Using BRADA, a silhouette view of the building is taken at ground level from the middle of the adjacent city streets or pedestrian ways centered on the proposed building. The façade of the building facing the viewpoint, including heights, setbacks, corners and other features, is plotted onto a base map using lateral and elevation angles. The two-dimensional base map generated by BRADA represents a figure of the building in the "sky dome" from the viewpoint chosen. Due to the constraints of the BRADA program, the building may be simplified or it may be divided into sections in some cases, while curved facades are straightened. The BRADA program calculates the percentage of daylight that will be obstructed on a scale of zero percent to 100 percent based on the width of the view, the distance between the viewpoint and the building, and the massing and setbacks incorporated into the design of the building; the lower the number, the lower the percentage of obstruction of daylight from any given viewpoint.

The analysis treats the following elements as controls for data comparison:

- Existing Condition;
- Proposed Condition; and
- Area Context.
The daylight analysis examined daylight obstruction from two locations for the proposed building, as shown on Figure 5.3-1. As requested by the BRA, viewpoints considered for the analysis were the Department of Conservation and Recreation (“DCR”) Pathway on the west side of Soldiers Field Road looking west at the Project site (Viewpoint 1), the center of the proposed Executive Education Quad looking east at the proposed building (Viewpoint 2), and the center of the proposed Executive Education Quad looking south at the proposed building. The area context viewpoints looked at Mellon Hall from the pathway on the south side of Soldiers Field Road (AC1), Mellon Hall from the Quad on its south side (AC2), McArthur Hall from the proposed Executive Education Quad (AC3), and Kresge Hall from the proposed Executive Education Quad.

5.3.3 Results of Daylight Analysis

The results for each viewpoint for the existing and proposed conditions, as well as for the area context viewpoints are shown in Table 5.3-1. Since the Project site does not contain any buildings, the daylight obstruction value for the existing site is 0%. Figures 5.3-2 and 5.3-3 provide the BRADA results for each viewpoint.

<table>
<thead>
<tr>
<th>Viewpoint Locations</th>
<th>Existing Conditions</th>
<th>Proposed Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewpoint 1 DCR Pathway Looking West</td>
<td>0%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Viewpoint 2 Proposed Executive Education Quad Looking East</td>
<td>0%</td>
<td>32.6%</td>
</tr>
<tr>
<td>Viewpoint 3 Proposed Executive Education Quad Looking South</td>
<td>0%</td>
<td>26.5%</td>
</tr>
<tr>
<td>AC1 DCR Pathway Looking South at Mellon Hall</td>
<td>39.5%</td>
<td></td>
</tr>
<tr>
<td>AC2 Mellon Quad Looking North</td>
<td>43.3%</td>
<td></td>
</tr>
<tr>
<td>AC3 Proposed Executive Education Quad Looking at McArthur Hall</td>
<td>31.1%</td>
<td></td>
</tr>
<tr>
<td>AC4 Proposed Executive Education Quad Looking at Kresge Hall</td>
<td>15.6%</td>
<td></td>
</tr>
</tbody>
</table>

5.3.3.1 Viewpoint 1

Viewpoint 1 was taken from the DCR pathway on the west side of Soldiers Field Road looking west at the Project site. Since the existing site does not contain a building, the existing daylight obstruction value is 0%. With the proposed building, the daylight obstruction value will be low at 19.4%. Tata Hall is placed farther from Soldiers Field Road than other buildings on the HBS campus, and therefore has a lower daylight obstruction value than other viewpoints looking at buildings along Soldiers Field Road. It should be noted that there are a number of mature trees between the pathway and the Project site which would obstruct the daylight and view towards the Project; BRADA does not take into account existing trees or landscaping.
FIG. 5.3-1: Daylight Analysis Viewpoints
FIG. 5.3-2: Daylight Analysis: Viewpoints of Proposed Project

Obstruction of daylight by the building is 19.4%  
Viewpoint 1

Obstruction of daylight by the building is 26.5%  
Viewpoint 3

Obstruction of daylight by the building is 32.6%  
Viewpoint 2
FIG. 5.3-3: Daylight Analysis: Area Context Viewpoints

Obstruction of daylight by the building is 39.5%
Area Context 1

Obstruction of daylight by the building is 31.1%
Area Context 3

Obstruction of daylight by the building is 43.3%
Area Context 2

Obstruction of daylight by the building is 15.6%
Area Context 4
5.3.3.2 Viewpoint 2

Viewpoint 2 was taken from the center of the proposed Executive Education Quad bound by Tata Hall, Kresge Hall and McArthur Hall looking east. Since the existing site does not contain a building, the existing daylight obstruction value is 0%. With the proposed building, the daylight obstruction value will be 32.6%, the highest daylight obstruction value of the viewpoints for the proposed Project studied. This daylight obstruction value is lower than the daylight obstruction values associated with other Quads on the HBS campus, and similar to daylight obstruction values found for existing buildings that will also be located adjacent to the proposed Executive Education Quad.

5.3.3.3 Viewpoint 3

Viewpoint 3 was taken from the center of the proposed Executive Education Quad looking south at Tata Hall. This wing of Tata Hall will be shorter than other portions of the building. The daylight obstruction value will be 26.5%. This daylight obstruction value is lower than the daylight obstruction values associated with other Quads on the HBS campus, and similar to daylight obstruction values found for existing buildings that will also be located adjacent to the proposed Executive Education Quad.

5.3.3.4 Area Context Viewpoints

The Area Context Viewpoints looked at Mellon Hall, which like Tata Hall, is adjacent to Soldiers Field Road and is on a Quad, as well as McArthur Hall and Kresge Hall which will both be adjacent to the proposed Executive Education Quad. Mellon Hall, like other buildings on the HBS campus adjacent to Soldiers Field Road, is located closer to Soldiers Field Road than Tata Hall. The daylight obstruction value from the DCR pathway on the south side of Soldiers Field Road looking at Mellon Hall (AC1) is 39.5%. The Mellon Quad is similar in size to the Quad proposed adjacent to Tata Hall. The daylight obstruction value from this viewpoint (AC2) is 43.3%. The daylight obstruction values for the existing buildings that will be located on the proposed Executive Education Quad, McArthur Hall and Kresge Hall, are 31.1% and 15.6%, respectively.

5.3.4 Conclusion

The proposed Project is located adjacent to Soldiers Field Road and a new Quad, similar to other buildings on the HBS campus. The daylight obstruction value for the proposed Project will be higher than the existing condition because the site does not currently contain any buildings. However, the daylight obstruction values for the proposed Project will be lower than daylight obstruction values for buildings in a similar context on the HBS campus, and similar to daylight obstruction values of existing buildings that will be located adjacent to the proposed Executive Education Quad. The Project is not expected to result in a canyonization of the Charles River.
5.4 Solar Glare

The Project does not include the use of mirrored or reflective glass. The lower floors of the building which include the most glass are substantially screened by large mature trees to the east, even in the winter, thereby minimizing the potential solar glare impact. Approximately 50 percent of the total surface area of the building is glazed and the remainder is anticipated to be stone.

Five time periods typically analyzed for solar glare impacts were reviewed (March 21 at 3:00 p.m., September 21 at 9:00 a.m., and December 21 at 9:00 a.m., 12:00 p.m. and 3:00 p.m.). Based on a preliminary review of the massing of the building and the angles of the sun, solar glare has the potential to extend across the HBS campus onto Soldiers Field Road and the pathway on the west side of the roadway. Solar glare is not anticipated to extend beyond Soldiers Field Road. It is anticipated that the majority of the glass on the proposed building will be at or below a height of 33 feet. Although a complete analysis has not been performed at this time, it is not anticipated that during these time periods a significant amount of glare will be in the cone of vision for drivers on Soldiers Field Road and users of the adjacent pathway and therefore the Project will not impact drivers and users of the pathway or boaters on the River. In addition, as mentioned above, there are significant plantings along the edge of the campus which will likely serve as mitigation by blocking the reflected sunlight which would otherwise fall on the roadway and adjacent pathway. This discussion of potential solar glare impacts is very conservative as the materials considered for the Project are not reflective which will further minimize potential glare impacts.

5.5 Air Quality

As discussed in Chapter 4, the Project will result in a limited number of new vehicle trips. Therefore, air quality impacts from traffic related to the Project are anticipated to be negligible. Air quality impacts from the Project’s mechanical equipment are also anticipated to be minimal. The air handling units, emergency generator and fuel oil tank vents will vent to the rooftop, minimizing the potential for impacts to pedestrians in the surrounding area. Vents and louvers near the ground level are for emergency generator air radiator and ventilation for the electrical room, and are not anticipated to have an air quality impact to pedestrians. Further details describing the Project's impact on air quality are provided below.

The building heating and air conditioning system is comprised of six central air handling units located in a basement mechanical room. Each of these units receives the code required ventilation air from centralized duct risers which take the air from the high roofs of the Project and duct this air to the basement. Restroom exhaust or relief air from these air handling units or exhaust fans is also ducted to the high roofs for relief. These high roof intake and relief vents are positioned so there will be no cross contamination between these vents.
All externally mounted air handling units will get the code required ventilation air at a minimum of 3'-0” above the roof level and will be located to minimize introduction of contaminated air from plumbing vents or exhaust relief ducts located on the surrounding roof.

All air handling units are provided with two sets of air filters. The first set is 30-40% efficient and the second set is 80-90% efficient. These filters are manufactured to capture most common particle sizes of airborne dust. Most airborne contaminants categorized as “fine dust” would be removed by the two sets of filters, up to approximately 90-95%, depending on the frequency of filter change and the average diameter of the air contaminants. These high quality dual filters are found in typical applications that include hospital inpatient care facilities, general day surgery centers and superior commercial buildings. The air intakes served by these filtration systems are also located so the introduction of normal pollutants, such as dust, fumes and odors, are minimized. This avoidance is accomplished by providing sufficient separation and directional advantage (prevailing winds and avoiding exhaust discharge) from plumbing vents, vehicle fumes and building exhaust systems. This separation strategy and the use of high performance filtration is expected to result in a clean and healthy internal building environment.

At grade on the south side of the new building there are four areaways. Two of these areaways serve the new diesel fired emergency generator located in the basement. One is for the intake areaway to allow ambient air to flow into the engine radiator. The other is the radiator exhaust areaway which discharges warm air similar to the radiator on an automobile engine. The flue from the generator engine has a critical muffler and the insulated engine exhaust rises to the south high roof. There are no outside air intakes located on this south roof. The intent of bringing this flue pipe to the top of the building is to mitigate any reintroduction of engine exhaust into the building.

The other two areaways are for ventilating electric rooms and allowing for service access (equipment removal). Each of the two areaways will have intake louvers and relief louvers controlled by room thermostats. Contamination of the ambient air at the pedestrian level or on any sensitive receptors is not anticipated because of intake or relief from these areaways serving the electrical equipment described above.

The fuel oil tank (diesel fuel) is internal to the building in a dedicated room. The tank vents terminate at the roof at the same elevation as the generator engine exhaust so any vent odors are dissipated at the high roof.

5.6 Solid and Hazardous Waste

5.6.1 Hazardous Waste

The Proponent intends to obtain site specific information regarding environmental conditions to evaluate for the presence of oil and hazardous materials. Foundation construction for the new building will result in soil requiring off site transport. Chemical testing of the material will be
required by receiving facilities to identify chemical constituents and any contaminants present. Chemical testing of the material will be conducted prior to construction in accordance with facility requirements.

Any material leaving the site will be required to be legally transported in accordance with local, state and federal requirements. In addition any regulated soil and/or groundwater conditions related to oil and hazardous materials will be managed in accordance with appropriate Massachusetts Department of Environmental Protection (“MassDEP”) regulatory requirements.

5.6.2 Operation Solid and Hazardous Waste Generation

Solid waste generated by the Project will be collected and disposed of off-site by a licensed contractor as part of HBS’s existing campus wide waste program. The solid waste generated by the building operations will be collected and brought to the existing loading dock at Kresge Hall for removal. The solid waste to be recycled will be brought to the existing loading dock at the campus chilled water plant for off-site disposal. Both of these are consistent with the solid waste removal procedures for the existing buildings on campus.

With the exception of “household hazardous wastes” typical of residential and academic uses (for example, cleaning fluids and paint), the Project will not generate hazardous waste.

5.6.3 Recycling

The Harvard Business School is committed to a campus-wide recycling program, and Tata Hall will be incorporated into these existing recycling programs. The Harvard Business School is committed to a campus-wide recycling program. Tata Hall will be set up for single stream recycling, a process where glass, plastic, paper and cardboard can be collected in the same receptacle. All classrooms will have built-in receptacles for recycling and each bedroom and office will have its own dedicated bin for recycling. Assembly areas offer recycling with built in bins and behind the scenes composting whenever food is served. The trash and recycling are collected and delivered via the tunnel system to trash and recycling containers shared by the HBS campus for removal to the appropriate facility.

Harvard’s recycling operations recover more tons of more types of recyclables than any urban campus in the U.S. The University recovered over 8,395 tons of recyclables and compostables in fiscal year (“FY”) 2010 for a recovery rate of 55%, outstanding for an urban program. Here are a few of the recycling achievements that distinguish Harvard’s programs from those of other urban institutions:

- **Successful recycling in the city:** No urban campus has managed to recover over 7,700 tons for recycling and composting given city limitations of tight space, close proximity to neighbors, an active scavenging population, vigilant fire code enforcement, historic buildings without vehicle access, and noise restrictions.
Building lasting sustainability into all levels of the University: Harvard’s student-staffed Resource Efficiency Program diverted an additional 200 tons of refuse for recycling last year. In partnership with the Office for Sustainability, Harvard is expanding this program across the University to include graduate schools and Green Teams in many academic and administrative departments.

Sharing surplus with neighbors: Harvard’s Surplus Distribution program donated over $2,500,000 worth of products to over 200 charities and other recipients in FY 2010.

Collection innovation: Harvard’s four mini-packers and two box trucks, cardboard balers, and food pulping equipment integrate smoothly with contractors’ resources to enable collection personnel to handle nearly all recyclables and compostables just one time. This ability to use automated collection promotes efficiency, avoids employee injuries, and reduces pollution. Most of the vehicles that service the campus are at least partially powered by alternative fuels including compressed natural gas or biodiesel.

Urban compost collection: Harvard’s compost program pulls over 1,000 tons of landscape waste, 700 tons of animal bedding and 1,300 tons of food scraps out of trash and sewage for horticultural composting. Almost 500 tons per year of wood chips, plant trimmings, coffee grounds and selected food scraps are delivered to the Arnold Arboretum, where it is composted in windrows to make mulch, topsoil amendments, and compost teas.

Simplicity: Each year, Harvard has made the program more comprehensive and the specifications less restrictive and more inclusive of new materials such as reusable surplus furniture, supplies and equipment; shelter-bound health and beauty aids; and universal waste. This reliable service has occurred without interruption since 1991.

Buying recycled: The University buys over 300 tons of recycled custodial paper products each fiscal year. In addition, Harvard’s top administrative officers now use only recycled copier paper. Harvard customers bought an estimated 500 tons of recycled high-grade paper last year.

Construction and demolition recycling: Harvard has recovered over 25,000 tons of construction and demolition waste for reuse or recycling since 2003 for a recycling rate exceeding 96% through its partners at the Institution Recycling Network.

Recycling within a decentralized institution: Harvard is extremely decentralized, with 800 purchasing centers, over 400 buildings and 4,500 officers with purchasing authority. Even so, the University has maintained a close working relationship with recyclers and different custodial vendors across the campus to give members of all nine faculty communities the opportunity to recycle the widest possible spectrum of resources.
5.7 Noise Impacts

The Project is located on the HBS campus adjacent to Soldiers Field Road and away from residential areas in an area with high ambient noise due to the traffic on the adjacent roadway. It is anticipated that the Project will have a minimal impact on ambient noise levels in the surrounding area. Mechanical equipment will be within the building and/or in a mechanical penthouse on the rooftop. The mechanical equipment will be shielded with noise protection to minimize increased noise in the surrounding area. Air handling units and emergency generators will have sound attenuators to minimize noise generation. Fans for emergency use will be located on the roof and will only be run for testing, and therefore are not anticipated to contribute to ambient noise levels. Details about how the Project will mitigate noise impacts are described below.

Mechanical and electrical equipment that are served by areaways are acoustically protected using sound attenuators to muffle noise generated by the operation of such equipment. Equipment is housed inside the building and also includes the same internal noise protection for the building occupants as what is provided to protect the external environment.

All equipment, such as the emergency generator intake and relief louver connections have sound attenuators on the intake and relief connections before the physical connection to the exterior louveres.

To provide acoustical protection at the intake and relief openings at the electrical room areaways the interior ducts and fans will both have sound attenuators and the external concrete surfaces of the two areaways will have sound absorption panels suitable for outdoor installation. These external sound panels will help mitigate the “electrical hum” associated with large electric rooms from creating an objectionable external noise to the surrounding environment.

Equipment within the building will be suspended and mounted using vibration isolators to eliminate vibrations inside and outside the building. Air handling equipment is constructed using thermal and acoustical sound absorption panels for the walls, floor and roofs of the equipment, which reduces any ambient noise from the mechanical room to either the building interior or exterior.

Fans that might be required for emergency use, such as stair pressurization, would be located on one of the high roofs of the building and would be selected to meet the requirements of the code under fire conditions. These fans would be high on the roofs of the building and would only be tested as required by code and would not run other than in an extreme emergency. It is not anticipated that these fans would contribute to any ambient noise pollution under normal conditions.
Air handling units located on the roof would include intake and discharge sound attenuators to offer internal and external noise abatement. The walls of the externally mounted equipment would be four inch thick thermal and acoustical panels to minimize any external transmission of sound or vibration to the unit exterior.

5.8 Water Quality/Stormwater Management

Please see Chapter 8 for a discussion of water quality and stormwater management.

5.9 Flood Hazard Zones / Wetlands

The Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map ("FIRM") indicates the FEMA Flood Zone Designations for the site (City of Boston, Community-Panel Number 250286 0076 G). The map for the site shows that it is located in Zone X, “Areas determined to be outside the 0.2% annual chance (500-year) floodplain.”

The site is developed and does not contain wetlands.

5.10 Geotechnical/Groundwater Impacts

5.10.1 Geotechnical

Based on available test boring information obtained at the site, subsurface soil conditions underlying the proposed building are characterized by the following general soil profile:

<table>
<thead>
<tr>
<th>Soil Deposit</th>
<th>Approximate Thickness of Layer (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill</td>
<td>8 to 10</td>
</tr>
<tr>
<td>Organic Deposits</td>
<td>15 to 25</td>
</tr>
<tr>
<td>Fluvial Deposits (Sand)</td>
<td>0 to 5</td>
</tr>
<tr>
<td>Marine Clay</td>
<td>65 to 75</td>
</tr>
<tr>
<td>Glacial Till</td>
<td>5 to 10</td>
</tr>
</tbody>
</table>

♦ **Fill** – The fill layer typically consists of medium dense to dense, poorly to well graded, coarse to fine, sand with varying amounts of gravel, silt, brick, and roots. This soil unit also contains layers of very soft to stiff organic silt and clay with organic fibers and varying amounts of gravel, sometimes with an organic odor.

♦ **Organic Deposits** – Organic Deposits are very soft to stiff, organic soil (generally organic silt), with varying amounts of sand and peat fibers.
Fluvial Deposits – Fluvial Deposits typically consists of medium dense to very dense, sand, with varying amounts of silt and gravel.

Marine Deposits – The Marine Deposits typically consists of silty clay. This unit is comparatively stiffer in the upper 5 to 10 feet. The samples collected at the top of the Marine Deposit are consistently hard or very stiff clay, with traces of silt, sand and gravel.

Glacial Till Deposits – A very dense gray sandy silt with gravel (Glacial Till Deposits) was encountered below the Marine Deposits.

The top of rock is approximately 110 feet below grade.

5.10.2 Groundwater

The Project site is not located in the Groundwater Conservation Overlay District.

Several groundwater monitoring wells exist at and in the vicinity of the site. Groundwater was measured in an observation well on the site at a depth of about 4 to 5 feet below grade, approximately El. 9 BCB. Groundwater levels are influenced by weather conditions, precipitation, the infiltration of surface water runoff, construction activities, leakage into or out of utility pipes, building/highway underdrain systems, localized water recharging, and other factors.

5.10.3 Foundation Support and Below-grade Construction

5.10.3.1 Foundation Support

The proposed building will be supported on structural slab that is supported by concrete caissons bearing near the top of the marine clay deposit. The proposed building includes one below grade level. The foundation walls and lowest slab will extend below the groundwater level and these walls and slab will be waterproofed. The structure will not cause the long-term groundwater level to raise, pond or be lowered in the surrounding area. The structure will be designed such that there is not continuous long term groundwater pumping.

Perimeter walls will be waterproofed the full height of the basement level. All joints in the below-grade walls will have continuous waterstops.

5.10.3.2 Excavation for Below Grade Construction

A temporary lateral earth support system will be required to complete the excavation for the basement. This lateral support system will be a relatively impermeable wall such as continuous interlocking steel sheet piles or a continuous overlapping soil-mix wall. The excavation will not affect the existing buildings in the area.
Temporary construction dewatering will be required inside the limits of the excavation support wall to enable foundation construction. The permanent structure will be designed to resist typical hydrostatic uplift pressures. A permit for temporary construction dewatering will be obtained for discharge of dewatering effluent. The temporary construction dewatering activities will not impact the adjacent buildings or any other nearby areas.

5.10.3.3 Geotechnical Instrumentation

A geotechnical monitoring program will be implemented prior to and during construction and will likely consist of settlement monitoring of adjacent buildings. The Project’s geotechnical team will install settlement points on the surrounding buildings, including Kresge and McArthur Halls. The team will survey/monitor those points prior to, during, and post construction.

In addition, seismographs will record vibrations during sheetpile wall installation (excavation support wall) to monitor vibrations. An engineer’s representative will be on site full time during foundation installation to monitor these activities in accordance with the Building Code requirements.

5.10.4 Earthquake Impacts

The Project’s design team has conducted soils investigation and analysis which include profiling properties and their predictive response to the Code Maximum Considered Earthquake. Additional site specific analysis has been performed in accordance with the code to assess the behavior of the soil profile and response of the building structure to the anticipated ground accelerations. As the design of the Project continues, the Project geotechnical consultant (Haley & Aldrich) and structural engineer (LeMessurier Consultants) will continue to coordinate to ensure that the Project meets all seismic code requirements.

5.11 Construction Impact

5.11.1 Introduction

A Construction Management Plan (“CMP”) in compliance with the City’s Construction Management Program will be submitted to the Boston Transportation Department (“BTD”) once final plans are developed and the construction schedule is fixed. The construction contractor will be required to comply with the details and conditions of the approved CMP.

Proper pre-planning with the City will be essential to the successful construction of the Project. Construction methodologies, which ensure public safety and protect nearby buildings and activities, will be employed. Techniques such as barricades, walkways, and signage will be used as appropriate. The CMP will include routing plans for trucking and deliveries, plans for the protection of existing utilities, and control of noise and dust.
In an effort to have clear, open and up-to-date communications with the neighborhood, the Project will develop a communications plan consistent with other Harvard projects in Allston. A 24-hour hotline will be established upon commencement of construction activity. In addition, when construction commences, a website will provide updates on construction as well as provide Harvard with feedback from the community. A mitigation staff and protocol will be established and be available to address all Project issues. Emergency contacts will be maintained for immediate follow-up on emergency situations. Additionally Harvard will direct the Construction Manager to install community bulletin boards around the perimeter of the site. These bulletin boards will be maintained with current activity and schedule information.

The Proponent intends to follow the guidelines of the City of Boston and MassDEP, which direct the evaluation and mitigation of construction impacts.

5.11.2 Construction Methodology

Construction methodologies that ensure public safety and protect nearby buildings and individuals in the area will be employed. Techniques such as barricades and signage will be used. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.

As the design of the Project progresses, the Proponent will meet with BTD to discuss the specific location of barricades, the need for lane closures, pedestrian walkways, and truck queuing areas. This will be incorporated into the CMP which will be submitted to BTD for approval prior to the commencement of construction work.

5.11.3 Construction Schedule

Site work is anticipated to commence in November 2011. It is anticipated that the Project will be completed in the fall of 2013.

Typical construction hours will be from 7:00 a.m. to 6:00 p.m., Monday through Friday, with most shifts ordinarily ending at 3:30 p.m. No substantial sound-generating activity will occur before 7:00 a.m. If longer hours, additional shifts, or Saturday work is required, the construction manager will submit a work permit request to the Boston Air Pollution Control Commission and BTD in advance. Notification should occur during normal business hours, Monday through Friday. It is noted that some activities such as finishing activities could run beyond 6:00 p.m. to ensure the structural integrity of the finished product; certain components must be completed in a single pour, and placement of concrete cannot be interrupted.

5.11.4 Construction Staging/Public Safety/Access

Access to the site and construction staging areas will be provided in the CMP. Construction staging and material laydown will occur on-site.
Secure fencing and signage will be employed to ensure the safety and efficiency of all pedestrian and vehicular traffic flows. The two Soldiers Field Park playgrounds directly adjacent to the site will be shut down during the start of construction. An alternative playground site will be ready when the construction starts.

Although specific construction and staging details for have not been finalized, the Proponent and its construction management consultant will work to ensure that staging areas will be located to minimize impacts to pedestrian and vehicular flow on the campus. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the site. Construction procedures will be designed to meet all Occupational Safety and Health Administration (“OSHA”) safety standards for specific site construction activities.

5.11.5 Construction Mitigation

The Proponent will follow City and MassDEP guidelines. As part of this process, the Proponent and construction team will evaluate the Commonwealth’s Clean Air Construction Initiative.

A CMP will be submitted to BTD for review and approval prior to issuance of a Building Permit. As mentioned above, the CMP will include detailed information on construction activities, specific construction mitigation measures, and construction materials access and staging area plans to minimize impacts to the campus and the surrounding community. The CMP will also define truck routes which will help in minimizing the impact of trucks on City and neighborhood streets.

“Don’t Dump - Drains to Charles River” plaques will be installed at any new storm drains that are replaced or installed by the redevelopment as mentioned in the comment letter from the Boston Environment Department.

As mentioned in the comment letter from the delegation of the local elected officials representing Allston-Brighton, construction mitigation regarding construction employment and worker transportation, air quality, noise and other construction mitigation is described in the following sections.

5.11.6 Construction Employment and Worker Transportation

The number of workers required during the construction period will vary. It is anticipated that approximately 210 construction jobs will be created during the peak period of construction. The Proponent will make reasonable good-faith efforts to have at least 50% of the total employee work hours be for Boston residents, at least 25% of total employee work hours be for minorities and at least 10% of the total employee work hours be for women. The Proponent will enter into a Boston Residents Construction Employment Plan with the City of Boston.

To reduce vehicle trips to and from the construction site, construction workers will be encouraged to use non-auto modes, but recognizing that many workers will choose to drive to the site, the University anticipates that the Soldiers Field Park Garage will be used to accommodate worker
parking which will discourage parking on neighborhood streets. The general contractor will work aggressively to ensure that construction workers are well informed of the public and Harvard-owned transportation options serving the area.

5.11.7  Construction Truck Routes and Deliveries

As currently proposed, construction trucks accessing the site will arrive via the Massachusetts Turnpike to the Soldiers Field Road access road to Western Avenue and will depart using the same roadways. These trucks will be prohibited from using local neighborhood streets to arrive at or depart from the site. At peak periods, it is projected that 110 trucks will arrive and depart at the site each day, and during average periods it is projected that 40 trucks will arrive and depart each day. The construction team will manage deliveries to the site during morning and afternoon peak hours in a manner that minimizes disruption to traffic flow on adjacent streets. The construction team will provide subcontractors and vendors with Construction Vehicle & Delivery Truck Route Brochures in advance of construction activity. “No Idling” signs will be included at the loading, delivery, pick-up and drop-off areas.

5.11.8  Construction Air Quality

Short-term air quality impacts from fugitive dust may be expected during excavation and the early phases of construction. Plans for controlling fugitive dust during excavation and construction include mechanical street sweeping, wetting portions of the site during periods of high wind, and careful removal of debris by covered trucks. The construction contract will provide for a number of strictly enforced measures to be used by contractors to reduce potential emissions and minimize impacts. These measures are expected to include:

- Using wetting agents on areas of exposed soil on a scheduled basis;
- Using covered trucks;
- Minimizing spoils on the construction site;
- Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the site; and
- Providing a wheel wash for vehicles leaving the Project site as suggested in the comments provided by the Boston Environment Department.

5.11.9  Construction Noise

The Proponent is committed to mitigating noise impacts from the construction of the Project. Increased sound levels, however, are an inherent consequence of construction activities. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities.
Mitigation measures are expected to include:

- Instituting a proactive program to ensure compliance with the City of Boston noise limitation policy;
- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques by less noisy ones where feasible;
- Selecting the quietest of alternative items of equipment where feasible;
- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment; and
- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

5.11.10 **Construction Vibration**

Means and methods for performing work at the site will be evaluated for potential vibration impacts on nearby structures and utilities.

5.11.11 **Construction Waste**

The Proponent will take an active role with regard to the reprocessing and recycling of construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse and recycling of materials when possible. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the disposal contract. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility. HBS will consider donating excess building materials to the Building Materials Resource Center.
5.11.12 Protection of Utilities

Existing site drainage and private infrastructure located within or adjacent to the site will be protected during construction. Specific methods for constructing proposed utilities where they are near to, or connect with, existing water, sewer and drain facilities will be reviewed by BWSC as part of its site plan review process.

5.11.13 Rodent Control

A rodent extermination certificate will be filed with each building permit application to the City. Rodent inspection monitoring and treatment will be carried out before, during, and at the completion of all construction work in compliance with the City’s requirements. Rodent extermination prior to work start-up will consist of treatment of areas throughout the site. During the construction process, regular service visits will be made.

5.11.14 Odor

There is a potential for odor from organic soils during excavation of the site. If odors from the organic soils on the site are noticed, Harvard will provide communication to the community and an odor inhibiting foam will be applied to the odor releasing material at the end of each day.

5.12 Sustainable Design

5.12.1 Campus-wide Sustainability Efforts

HBS is committed to sustainable practices. HBS has committed to reducing its greenhouse gas emissions by 30% of 2006 levels by 2016. Between 2006 and 2010, greenhouse gas emissions were reduced by 34%. HBS has also committed to incorporating Leadership in Energy and Environmental Design (“LEED”) standards into its proposed projects. Currently, eight HBS buildings are LEED certified, and HBS has a goal of all new projects being LEED certified at the Gold Level.

Below is a description of other sustainability projects on the HBS campus. Additional information on HBS’s sustainability efforts can be found at: www.hbs.edu/environment/campus/

Water Conservation. HBS is implementing water conservation efforts throughout campus such as dual-flush toilets, ultra low-flow urinals, and low-flow sinks and shower heads. Low-flow shower heads have already been installed in all MBA dormitories, reducing flow from 2.5 to 2.0 gallons/minute, saving approximately 300 gallons a year per shower head.

In addition to reviewing opportunities inside the buildings, a state of the art landscaping irrigation system was installed in 2004. A computerized system runs lawn sprinklers, using a weather station to monitor humidity, wind speed, ground moisture, and rainfall. The system operates only when water is needed, saving about four million gallons of water per year over traditional timer systems.
Lighting Upgrades. Lighting retrofit projects have been completed in 24 buildings on campus. These retrofits include replacing old inefficient light fixtures with high-efficiency lamps/ballasts, installing occupancy sensors and daylight harvesting. A campus-wide upgrade of all 400+ exterior lighting fixtures to meet LEED requirements and improve campus safety is currently underway. In addition, 52-watt blue lights have been replaced by 2.6-watt LCD blue lights on all campus security phones, saving 14,000 lbs. of CO2 per year.

Occupancy Sensors. Both lighting and mechanical system occupancy sensors have been installed on campus. Most lighting retrofits on campus incorporate an occupancy sensor to shut off lights when a room is empty. In campus housing facilities, fan coil units are tied into occupancy sensors so that the fan coil shuts off when a student leaves the room for an extended period of time.

Trash and Recycling Program. The Harvard Business School is committed to a campus-wide recycling program. Separate trash and recycling receptacles will be provided in every bedroom, living group common area, classroom, office and in specific locations throughout the public spaces. The trash and recycling are collected and delivered via the tunnel system to trash and recycling containers shared by the HBS campus for removal to the appropriate facility.

Continuous Commissioning. Continuous Commissioning is the systematic process of collecting, analyzing, and reporting on building control points to optimize the performance of building systems. The monthly reports identify issues such as inefficient reheat coils, outside air dampers that are stuck open, air handling unit scheduling issues, economizer cutoff setpoints, etc.

5.12.2 Leadership in Energy and Environmental Design

This section provides a discussion of the sustainability efforts the HBS will pursue related to the Tata Hall Project.

The HBS is committed to developing buildings that are sustainably designed, energy efficient, environmentally conscious and healthy for the faculty, staff and students. Under Article 37 of the Boston Zoning Code, projects that are subject to Article 80B, Large Project Review, shall be LEED certifiable. There are seven categories in the LEED certification guidelines: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation in Design Process and the additional Regional Priority Credits. Tata Hall has already been registered with the U.S. Green Building Council (“USGBC”) and is targeting several credits which span the seven categories and enable the Project to be LEED Certifiable in accordance with Article 37 as described below. The LEED NC v2009 checklist is included in Appendix C. As mentioned in the comment letter from the delegation of the local elected officials representing Allston-Brighton, HBS is striving for Tata Hall to meet the Gold Certification threshold with 70 credit points.
The location and orientation of the Project on the site is selected to create a shared quad for Executive Education, between the Project to the east and south, Kresge to the west, McArthur to the North. Additionally, the Project is oriented north-south so that the long face of the building is provided with riverfront views. The lower floors are primarily glass on both the east and west sides to promote a sense of transparency, and to provide views through the building from the river towards campus, and from campus towards the river. The west wing is deliberately designed as a lower-height volume than the north-south curved portion to maximize sunlight penetration to the quad, ensuring a bright and comfortable space for shared use.

**Sustainable Sites**

The Project site is in a university campus close to several public transportation options including bus and shuttle services. There is no new parking associated with this development as the campus parking is located centrally, serving all campus buildings.

**Prerequisite 1 Construction Activity Pollution Prevention**

The Construction Manager will submit and implement an Erosion and Sedimentation Control (“ESC”) Plan for construction activities related to the construction of the new building specific to this Project. The ESC Plan will conform to the erosion and sedimentation requirements of the 2003 EPA Construction General Permit.

**Credit 1 Site Selection**

The proposed Project site is located on a previously developed urban site on the HBS campus.

**Credit 2 Development Density and Community Connectivity**

The proposed Project site is on the HBS campus in Boston, MA. The surrounding community is replete with housing, restaurants, shops, grocery stores, educational and religious institutions, performance venues and other community amenities.

**Credit 3 Brownfield Redevelopment**

The proposed Project site will be assessed for hazardous materials to determine if it is a Brownfield site.

**Credit 4.1 Alternative Transportation, Public Transportation Access**

The proposed Project site is within ¼ mile of multiple bus and shuttle stations.

**Credit 4.2 Alternative Transportation, Bicycle Storage & Changing Rooms**

Secure and covered bicycle racks for Tata Hall will be located within 200 yards of the building entrance for at least 5% of the building occupants. Showers will be included within the building for 0.5% of the building occupants.
Credit 4.3 Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles (“FEV”)

HBS’s parking facilities will designate preferred parking for FEVs for 5% of the building’s parking spaces. However, these spaces will only be designated once an occupant shows that they have a compliant FEV.

Credit 4.4 Alternate Transportation Parking Capacity

There is no new parking associated with the Project. All parking for the building is located in HBS’s central parking facility.

Credit 5.1 Site Development, Protect or Restore Habitat

The Project team is studying the possibility of native and adaptive vegetation on the Project site.

Credit 5.2 Site Development, Maximize Open Space

The overall area of the green space and pedestrian-oriented hardscape on the site contribute to urban open space.

Credit 6.1 Stormwater Design, Quantity Control

The site’s vegetated areas, along with the stormwater infiltration chambers, may contribute to a decreased stormwater discharge rate.

Credit 6.2 Stormwater Design, Quality Control

Stormwater will be treated prior to release into the municipal storm sewer system as described in Chapter 7.

Credit 7.1 Heat Island Effect, Non-Roof

The Project team will study select paver materials that might meet the solar reflectance index (“SRI”) value limits.

Credit 7.2 Heat Island Effect, Roof

The Project team is studying the feasibility of a partially vegetated roof and shall have a high-albedo roof membrane with an SRI of 78 minimum. Together, the vegetated roof and the high albedo roof would be expected to cover at least 75% of the roof area.

Credit 8 Light Pollution Reduction

Site lighting design options are currently under study and will continue to be discussed with the lighting designer and the Project team. Meeting the credit requirements is not likely given the campus environment and need for continuous lighting for pedestrian access.
**Water Efficiency**

The Project will specify low flow and high efficiency plumbing fixtures to achieve Water Efficiency.

**Prerequisite 1 Water Use Reduction, 20% Reduction**

Through the use of low flow and high efficiency plumbing fixtures, the Project will implement water use reduction strategies that use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting Energy Policy Act of 1992 fixture performance requirements.

**Credits 1.1 and 1.2 Water Efficient Landscaping, Reduce by 50% / No Potable Use or No Irrigation**

The Project will have a permanent irrigation system for the site and roof vegetated areas (if included in the Project) that will meet the 50% water use reduction. The team is studying water re-use options to achieve 100% potable water reduction for landscaping.

**Credit 2 Innovative Wastewater Technology**

The Project team is studying greywater and stormwater systems for toilet flushing that would meet the intent of this credit.

**Credit 3 Water Use Reduction**

Specified fixtures include high efficiency toilets and urinals, low flow lavatory faucets and ultra low flow shower heads. These fixtures will likely achieve a 30% savings in potable water use. The Project team is studying stormwater and greywater re-use systems that would further decrease potable water use.

**Energy and Atmosphere**

The building systems will be designed to optimize energy performance and will not use refrigerants that are harmful to the environment. The owner will engage a third-party Commissioning Agent to confirm the building systems are installed and function as intended and designed.

**Prerequisite 1 Fundamental Commissioning of the Building Energy Systems**

A third party Commissioning Agent will be engaged by the owner for purposes of providing both basic and enhanced commissioning services for the building energy related systems including heating, ventilation, air condition, and refrigeration (“HVAC & R”), lighting and domestic hot water systems. The Commissioning Agent will verify the building systems are installed, calibrated and performing to the building owner’s Project requirements.
Prerequisite 2 Minimum Energy Performance

The building performance rating will demonstrate a minimum 10% improvement compared to the baseline building performance calculated using the rating method in Appendix G of ANSI/ASHREA/IESNA Standard 90.1-2007. A whole building energy simulation will be used to demonstrate the projected energy savings for the Project.

As mentioned in the comment letter from the Boston Environment Department, in addition to the careful design and selection of mechanical equipment and systems, the design team is exploring the use of double-skin or triple-glazed curtain wall systems with integral sun shading devices at the public spaces, as well as utilizing an extremely high-efficiency envelope for the residential portions of the building.

Prerequisite 3 Fundamental Refrigerant Management

The specifications for refrigerants used in the building HVAC systems will not permit the use of CFC based refrigerants.

Credit 1 Optimize Energy Performance

The proposed building systems will strive for a performance of 34% improvement over a baseline building performance rating. The team will develop a whole building energy model to demonstrate the expected performance rating of the designed building systems.

Credit 2 On-Site Renewable Energy

The Project team is studying renewable energy options for the Project site.

Credit 3 Enhanced Commissioning

The Commissioning Agent will be engaged during the design process. The Commissioning Agent’s role will include reviewing the owner’s Project requirements, creating, distributing and implementing a commissioning plan, and performing a design review of the design development and construction documents.

Credit 4 Enhanced Refrigerant Management

Long life, high-efficiency mechanical equipment will be specified for the HVAC systems, and the refrigerants specified for the systems will have low Ozone-depletion and global warming potentials.

Credit 5 Measurement and Verification

HBS develops and implements measurement and verification plans for all buildings on its campus.
Credit 6 Green Power

HBS will purchase green power via a two-year renewable energy contract to provide a minimum of 35% of the building’s electricity from renewable sources.

Materials and Resources

Throughout the construction phase of the Project, the contractor plans to divert construction and demolition waste related to the Project from area landfills and procure materials that have recycled content and/or are manufactured locally.

Prerequisite 1 Storage and Collection of Recyclables

Storage of collected recyclables will be accommodated throughout the building.

Credits 2.1 and 2.2 Construction Waste Management

Prior to the start of construction, the Contractor will prepare a Construction Waste Management plan. The Contractor plans to divert as much demolition debris and construction waste from area landfills as possible with a goal of achieving 75% diversion.

Credits 4.1 and 4.2 Recycled Content 10%/20% (post-consumer & ½ pre-consumer)

The Project specifications will require materials to include pre- and/or post-consumer recycled content. During construction, material submittals will include a document indicating pre- and post-consumer recycled content percentages. The Contractor will track the recycled content for each material with a Project goal to achieve at least 10% recycled-content materials based on overall Project materials costs.

Credit 5.1 and 5.2 Regional Materials, 10%/20% Extracted, Processed and Manufactured Regionally

The Project specifications will indicate which materials are to be extracted, harvested, recovered and manufactured within a 500 mile radius of the job site. The Contractor will track the source location for each material with a Project target to achieve at least 10% regional materials based on overall Project materials costs.

Credit 6 Rapidly Renewable Materials

The Project team is investigating the use of at least 2.5% of purchased materials, based on overall Project costs, to be rapidly renewable.

Credit 7 Certified Wood

The Project specifications will indicate that a minimum of 50% of purchased wood installed within the building envelope be FSC certified.
**Indoor Environmental Quality**

The air quality will be monitored during the construction phase of the Project and likely prior to occupancy. Low emitting materials will be used throughout construction to maintain and improve air quality. The building occupants will be able to maintain a comfortable environment through access to thermal and lighting controls.

**Prerequisite 1 Minimum IAQ Performance**

The building mechanical systems will be designed to meet or exceed the requirements of ASHRAE Standard 62.1-2007 sections 4 through 7 and/or applicable building codes.

**Prerequisite 2 Environmental Tobacco Smoke (“ETS”) Control**

The building will be a non-smoking environment.

**Credit 1 Outdoor Air Delivery Monitoring**

The Project will incorporate permanent CO₂ sensors and measuring devices to provide feedback on the performance of the HVAC system. Devices will be programmed to generate an alarm when the conditions vary by 10% from a set point.

**Credit 2 Increased Ventilation**

The Project team is studying the option of increased ventilation rates that are 30% above ASHRAE 62.1-2007.

**Credit 3.1 Construction IAQ Management Plan (during construction)**

The Contractor will develop an Indoor Air Quality Management Plan for the construction and pre-occupancy phases of the Project to meet/exceed the recommended Control Measures of the SMACNA IAQ Guidelines for Occupied buildings Under Construction 2nd Edition 2007, ANSI/SMACNA 008-2008 (Chapter 3).

**Credit 3.2 Construction IAQ Management Plan (before occupancy)**

The Contractor will schedule a building flush-out after the completion of construction and prior to occupancy. HBS may decide to conduct baseline IAQ testing in place of flush-out to demonstrate that contaminant maximum concentrations are not exceeded.

**Credits 4.1 Low-Emitting Materials, Adhesives & Sealants**

The specifications will include requirements for adhesives and sealants to meet low Volatile Organic Compounds (“VOC”) criteria for adhesives and sealants.
Credits 4.2 Low-Emitting Materials, Paints and Coatings

The specifications will include requirements for paints and coatings to meet low VOC criteria for paints and coatings.

Credits 4.3 Low-Emitting Materials, Flooring Systems

The specifications will include requirements for hard surface flooring materials to be FloorScore certified and carpet systems shall comply with the Carpet Institute Green label program.

Credit 4.4 Low Emitting Materials, Composite Wood and Agrifiber Products

The Project team plans to use composite wood and agrifiber products that contain no added urea-formaldehyde.

Credit 5 Indoor Chemical and Pollutant Source Control

The Project team will design the Project to minimize and control the entry of pollutants into the building and to contain chemical use areas.

Credit 6.1 Controllability of Systems, Lighting

It is the intent of the design to provide individual lighting controls for regularly occupied spaces. The controls may include vacancy/occupancy sensors and daylight dimming controls. Multi-occupant user spaces such as classrooms will have multi-level lighting controls for modifying light levels as necessary for the various uses.

Credit 6.2 Controllability of Systems, Thermal Comfort

It is the intent of the design to provide individual temperature controls and/or operable windows for regularly occupied spaces. Further studies will be required to determine the applicability of this credit.

Credit 7.1 Thermal Comfort Design

It is the intent of the design to meet ASHRAE 55-2004 Thermal Comfort Conditions for Human Occupancy.

Credit 7.2 Thermal Comfort Verification

HBS intends on developing a thermal comfort survey to be distributed after occupancy. A plan for corrective action will be developed if the survey indicates that more than 20% of occupants are dissatisfied with the thermal comfort in the building.
Credit 8.1 Daylight and Views, Daylight for 75% of the spaces

The Project team is determining whether the Project can achieve a compliant amount of daylight without exceeding the requirements.

Credit 8.2 Daylight and Views, Views for 90% of the spaces

The Project team is determining if at least 90% of the occupied spaces will have views to the outdoors.

Innovation & Design Processes

The Project team has identified several possible ID credits which are listed below, (limited to five ID credits total).

Credit 1.1 Green Housekeeping

HBS has a campus green housekeeping plan that is implemented in all its buildings. The plan meets all LEED for Existing Buildings: Operations & Maintenance (“EB O&M”) requirements for green cleaning.

Credit 1.2 Green Building Education

HBS requires all campus buildings to implement a green education program. Strategies that have been discussed so far are informational touchscreens, occupant outreach, and green building tours.

Credit 1.3 Exemplary Performance, MRc5 Regional Materials

The Project team will target 30% materials to be extracted, harvested, recovered and manufactured within a 500 mile radius of the job site.

Credit 1.4 Exemplary Performance for SSc4.1

The Project site is located on several bus and shuttle routes with a frequency of service resulting in over 200 transit rides per day.

Credit 1.5 Pilot Credit

The Project team will research LEED Pilot credits to be submitted as an ID credit. Possible strategies include bicycle network and sharing programs.
**Regional Priority Credits**

Regional Priority Credits ("RPC") are established LEED credits designated by the USGBC to have priority for a particular area of the country. When a project team achieves one of the designated RPCs, an additional credit is awarded to the project. Up to four RPCs can be achieved on a project. The following RPCs are applicable to the Project area:

**Credits Pursued**

SSc6.1 Stormwater Design: Quantity Control

SSc7.1 Heat Island Effect: Non-Roof

SSc7.2 Heat Island Effect: Roof

EAc2 On-Site Renewable Energy

**Credits Not Pursued**

SSc3 Brownfield Redevelopment

MRc1.1 Building Reuse

As described above, HBS is committed to sustainable practices. HBS has committed to reducing its greenhouse gas emissions by 30% of 2006 levels by 2016. Currently, eight HBS buildings are LEED certified, and HBS has a goal of all new projects being LEED certified at the Gold Level including Tata Hall. In addition, the Project team has begun Project coordination with BWSC and the CRWA. As a clearer path is developed for Harvard’s master planning work and continued development in Allston, Harvard will be working with both BWSC and CRWA to further understand the large-scale infrastructure concerns and work towards mutually agreeable and beneficial solutions.
6.0 URBAN DESIGN

6.1 Introduction

The Project addresses the functional needs of a thriving Executive Education program at Harvard Business School. In addition to its benefits to the academic life of HBS, the Project is also an important component of the school’s continuing efforts to improve the character of the HBS campus itself and the relationship between HBS and the river, its neighbors, and the broader context of the City of Boston. With a prominent location on the Charles River and on the HBS campus (see Figure 6-1), the Project is uniquely situated to do so.

6.2 Building Context

The original Harvard Business School campus, designed by McKim, Mead and White, features a radial organization, with Harvard Way as the central organizing east-west circulation path; the Project is located to act as an eastern, riverfront terminus to this campus organization (see Figure 6-2). The centerline of the Harvard Way axis passes through the center of Kresge Hall at the heart of the Executive Education Precinct, and through the glazed central atrium space of the Project (see Figure 6-3). This locks the Project (and Executive Education more broadly) into the original campus principles established in 1925.

Additionally, the form of the Project is a convex curve facing the Charles River, pulling back from the river’s edge and creating a generous outdoor space on the river side of the HBS campus (see Figure 6-4). In addition to preserving open space along the river, this dynamic building form presents a welcoming, varied face to the river, providing a sense of openness to the river similar to Baker Lawn, a prominent landscape feature of the original HBS campus.

Another characteristic of the original campus plan is the distribution and shaping of buildings to create a network of interconnected open spaces (see Figure 6-5). The Project continues this tradition of interconnected open spaces, creating three distinct landscape areas (see Figure 6-6)—a threshold between McArthur Hall and the Project at the Allston end of the Sinclair Weeks Footbridge, an oval-shaped riverfront open area to the east of the Project, and a new Executive Education quadrangle between the Project and Kresge Hall. This quadrangle is most similar in scale to the quadrangles found within the two original campus dormitory buildings, Hamilton Hall and Mellon Hall.

6.3 Building Scale

The scale of the building is in keeping with the adjacent HBS buildings and with the Soldiers Field Park housing immediately to the south (see Figure 6-7). The tallest portion of the building (at the north end), is seven stories, in line with the ridge line of the adjacent Executive Education residence hall, McArthur Hall (see Figure 6-8). The building steps down to six stories at the
FIG. 6-1: Site Images: Aerial

EXISTING EXECUTIVE EDUCATION FACILITIES

- Kresge Hall
- Baker Hall
- McCollum (2-story classroom building)
- McArthur Hall

SITE
Campus planning based on original radial organization of McKim plan

Radial organization splits around Kresge Hall, continuing to the Exec Ed Quad and Tata Hall

FIG. 6-2: Urban Design Concepts: Radial Organization of Campus
Harvard Way creates a central spine in the Harvard Business School Campus Plan. The glazed atrium in Tata Hall continues the axis of Harvard way through Tata and towards the river.
FIG. 6-4: Urban Design Concepts: Concave Curves
(Public Face of Campus)
FIG. 6-5: Urban Design Concepts: *Existing Network of Interconnected Spaces*
FIG. 6-6: Urban Design Concepts: Creating Three New Spaces at Tata Hall
FIG. 6-7: Rendered Perspective: Aerial of Tata Hall and HBS Campus
Soldier's Field Park: Graduate Apartments  Tata Hall  McArthur Hall: Current Executive Education Housing
south end, then again to five and four stories at the west end. This scaling-down of the building height towards the south both reduces the building height as it approaches the four-story portions at the north edge of Soldiers Field Park and maximizes the amount of sunlight penetration to the new Executive Education quadrangle, increasing its usability and ensuring that it is a pleasant space to occupy and pass through during the spring, summer and autumn. Additionally, the overall length of the building is visually shortened by introducing a notch between the seven-story and six-story portions of the building; the length of each of these pieces is similar to that of the length of the original campus buildings along the Charles River.

6.4 Transparency

One of the primary design goals of the Project is to maximize the sense of transparency through the building. The public gathering spaces are concentrated on the first and second floors, particularly at the center and north end of the building. This multi-story space will be clad in glass on both the east and west sides (see Figures 6-9 through Figure 6-12). The transparency of this space achieves a number of goals:

- The transparency creates a powerful connection between indoors and outdoors;
- One can see from campus through the building to the river, and vice versa;
- The transparent lower floors reinforce the visual connectivity between Harvard Business School and the river;
- The transparency minimizes the sense of a wall between the river and the campus;
- The all-glass lower floors provide a sense of visual lightness, producing a building design that has a “light touch” particularly at the ground level.

6.5 Building Curve

The curve of the building pulls away from the river, helping to form two distinct outdoor spaces. To the east of the Project, the additional space achieves a number of goals:

- The building is less “wall-like” towards the river, as the curve pulls back away from the property line and the river’s edge beyond;
- This provides an opportunity to introduce an enhanced pedestrian pathway that connects the Weeks Footbridge to One Western Avenue, inboard of the property line and set back from the current pedestrian pathway, which is extremely close to the high-speed traffic of Soldiers Field Road; and
- This generous outdoor space provides a vegetated zone—including numerous mature trees—which softens the visual impact of the Project when viewed from the Charles River, as well as providing an attractive green space on the west side of Soldiers Field Road.
FIG. 6-9: Rendered Perspective: Through Tata Hall towards Kresge Hall
FIG. 6-11: Massing: Model Photo from East (River)
FIG. 6-12: Massing: Model Photo from Weeks Foot Bridge
6.6 Building Roofscape

As an important part of the image of the Project, the design team is committed to minimizing the visual impact of mechanical equipment from any vantage point. In order to achieve this, the parapets at the roof line will be as high as the elevator override penthouses and other rooftop equipment, to ensure that no equipment is visible from anywhere on the ground plane, including from across the Charles River (see Figures 6-13 through Figure 6-16).

6.7 Circulation and Landscape

The landscape design for the Project seeks to improve upon the existing pedestrian flows through and around the site (see Figure 6-17). There are a number of important characteristics that serve to generate a more pleasant, clearer and safer circulation experience around the Project.

6.7.1 Executive Education

The vehicular drop-off area for participants coming to Executive Education programs is located immediately in front of Kresge Hall, at the north end of East Drive. From this drop-off location, a pathway leads between Baker, McArthur and Kresge to the new Executive Education quadrangle, with direct access to the front doors of the Project. From this single path, access to each of the five Executive Education buildings (Kresge, Baker, McCollum, McArthur and Tata) is clearly articulated.

6.7.2 Weeks Footbridge Threshold

The curve of the building form for the Project creates a generous threshold space between McArthur Hall and the Project. It is at this threshold (see Figure 6-18) that two new pathways are created: one pathway that runs to the east side of the Project, connecting the Weeks Footbridge to One Western Avenue, and a second pathway that leads directly through the new Executive Education Quad to East Drive and Soldiers Field Park. By expanding this entry area and providing two clear paths to and through the HBS campus, the landscape design facilitates a smooth flow of pedestrian traffic through the site.

6.7.3 Riverside Walk

Currently, a sidewalk runs along the edge of Soldiers Field Road between the Weeks Footbridge and One Western Avenue. Because the walk is quite close to the road, and because the traffic moves very quickly along Soldiers Field Road, this walk is under-utilized. The landscape design for the Project introduces a new pathway connecting the footbridge to One Western Avenue, well inboard of the stand of existing trees along the roadway (see Figure 6-19). This pathway will be raised slightly above grade, and will provide a shaded, pleasant and well-lit and safe means of circulating along the river on the west side of Soldiers Field Road. Low shrub plantings along the edge of the path will define a grassy lawn area between the path and the Project; this lawn area will allow for unobstructed views through the building towards Kresge Hall beyond, and from the building to the path and the trees along the edge of Soldiers Field Road.
FIG. 6-13: Massing: Model Photo from West
FIG. 6-14: Proposed Site Plan
FIG. 6-16: North/South Site Section Elevation
FIG. 6-17: Proposed Circulation

Security booth
FIG. 6-18: Weeks Bridge Entry

- Path to Weeks Bridge
- Sinclair Weeks Bridge
- Landing terrace
- Entry fence and piers
- New perimeter path to One Western Ave
- Existing Soldiers Field Road Path
- Existing Soldiers Field Road tree planting
FIG. 6-19: Riverside Walk Enlargement

- Existing trees
- Terrace
- Existing Soldiers Field Path
- Perimeter path to One Western Ave - asphalt path elevated +/- 4' above Soldiers Field Road
- Shrub Planting along path
6.7.4 Executive Education Quadrangle

The Project will define the south and east edges of a new Executive Education Quadrangle, with Kresge Hall (west) and McArthur Hall (north) defining the other two sides (see Figure 6-20). The buildings will provide a sense of enclosure and intimacy to this space, while still remaining open at the corners to allow for easy circulation into and from the space to the HBS campus, the Weeks Footbridge, and Soldiers Field Park housing. A terrace will be located immediately outside the main entrance to the Project, across the Quad from the dining terrace adjacent to Kresge Hall. These two outdoor seating areas will provide opportunities for programmed activities to enliven this space during pleasant weather. Additionally, a clearly-defined pathway extends from the northeast corner of the Quad to the southwest corner of the Quad, directly connecting the Weeks Footbridge to East Drive and to Soldiers Field Park (see Figures 6-21 through Figure 6-23). This well-lit pathway provides an easily-identifiable access route to and through the Quad and on to the adjacent housing, the HBS and Allston beyond.

6.8 Materials

In addition to the extensive glazing at the lower floors, the upper floors will feature large windows within each bedroom and living group, set within a light-colored limestone façade. A particular stone has not been selected, but the design team is exploring options with a warm tone and natural variation. There will be a level of detail at each of the windows (projecting sills, reveals or returns at the head and jambs, etc) to provide visual interest to the window design, to introduce some shadow variation during different times of day, and to give a fine-grain level of detail consistent with the HBS campus.

6.9 Views of the Project

Parts of the Project are visible from a number of locations along the Charles River between the Anderson Bridge and the Western Avenue Bridge (see Figure 6-24). Figures 6-25 through Figure 6-32 show an outline of the building as seen from a number of different vantage points on the bridges and from across the river.

6.10 Floor Plans

See Appendix D for floor plans.
FIG. 6-20: Quadrangle Enlargement

- Shrub & groundcover plantings
- Tata Hall arrival & gathering terrace
- Understory tree planting
- Canopy tree planting over lawn
- Lawn
- Campus standard bituminous path with brick edging
- Kresge dining terrace
FIG. 6-21: Perspective View
FIG. 6-23: Perspective View
FIG. 6-25: Neighborhood View 1
Across River from North
FIG. 6-27: Neighborhood View 3
Across River, Right of Weeks Bridge (B)
FIG. 6-29: Neighborhood View 5
Across River, Left of Weeks Bridge
FIG. 6-30: Neighborhood View 6
Across River from West
FIG. 6-31: Neighborhood View 7
Across River from West
FIG. 6-32: Neighborhood View 8
Panorama from Western Avenue Bridge
6.11 Design Goals

The following is a summary of the urban and architectural design goals of the Project:

1. Significant Transparency: Open to the River
   ♦ The building will be located on a prominent riverfront location. A primary design goal is to maintain a powerful sense of transparency to facilitate a visual connection between the HBS campus and both the immediate context of the Charles River and the broader context of the Boston and Cambridge skyline beyond.

   ♦ The lower two floors of the building will be wrapped on both sides with highly transparent glass curtain wall. The central gathering space of the building is a double-height area aligned with the primary east-west axis of the HBS campus. This will open views into and through the building from both the campus side (towards the river) and from the Soldiers Field Road side of the building (through the building towards the rest of campus).

2. Shaping: Welcoming the River
   ♦ The building has a concave curve towards the river. In doing so, it draws the building mass back from the river’s edge.

   ♦ The inward curve presents an embracing, welcoming architectural gesture towards the river.

   ♦ The curve of the building also reduces the apparent mass of the building towards the river, particularly for drivers and pedestrians traveling along Soldiers Field Road.

3. Open Space: Facing the River
   ♦ Another effect of the convex curve of the building form is the creation of a large open area on the river side of the building.

   ♦ The generous lawn provides a visual buffer between the roadway and the HBS campus.

   ♦ Additionally, it provides an attractive outdoor space on the west side of Soldiers Field Road, similar to the open space areas on the east side of the road adjacent to the river.

4. Threshold: Connecting Campus and River
   ♦ The north end of the building curves away from McArthur Hall to create a widened open space between the two buildings. This open space is located directly at the Allston terminus of the Weeks Footbridge crossing the Charles River.

   ♦ This space serves as a threshold to the HBS campus and Allston beyond, presenting a clear and welcoming entry to and through the campus between Cambridge and Allston.
5. Respect Scale: Fitting In

- Tata Hall will maintain a height similar to the surrounding buildings, respecting the adjacent campus fabric.

- Additionally, by maintaining the height datum established by the surrounding buildings, Tata Hall will reinforce a consistency of building form along the riverfront edge of the HBS campus.

6. Views: Boston Skyline

- Tata Hall will host a diverse population of participants, many of whom will travel from all over the world to attend programs at Harvard. The bedrooms have been located on the upper floors of the building to take advantage of dramatic skyline views of Boston.

- The shape of the building to provide maximum views across and downriver presents a beautiful, positive image of Boston for participants.
7.0 HISTORIC AND ARCHAEOLOGICAL RESOURCES

7.1 Historic and Archaeological Resources

The following section describes historic resources within and in the vicinity of the Project site and generally discusses potential impacts on historic resources from the proposed Project.

7.1.1 Historic Resources

The proposed Project site is located within and in the vicinity of several properties listed in the State and National Registers of Historic Places and/or included in the Inventory of Historic and Archaeological Assets of the Commonwealth (“Inventory”). The Project site is located within the Harvard Business School – Athletic Facilities Area, an area included in the Inventory. The Project site is also located immediately adjacent to the Charles River Reservation – Soldier’s Field Road Area and the Charles River Basin Historic Districts, districts listed in the State and National Registers of Historic Places.

The name and address of properties listed in the State and National Registers of Historic Places and properties included in the Inventory within one-quarter mile of the Project site are listed below in Table 7-1. Figure 7-1 depicts the locations of these properties.

<table>
<thead>
<tr>
<th>Map No.</th>
<th>Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Properties Listed in the State and National Registers of Historic Places</strong></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Charles River Reservation – Soldiers Field Road, Boston</td>
<td>Soldiers Field Road</td>
</tr>
<tr>
<td>B</td>
<td>Charles River Basin Historic District, Boston and Cambridge</td>
<td>Eliot Bridge to Charles River Dam including parkland and parkways in Boston and Cambridge</td>
</tr>
<tr>
<td>C</td>
<td>Harvard Houses District, Cambridge</td>
<td>Mt. Auburn, Grant, Cowperthwaite, Banks, Putnam, JFK Sts and Memorial Drive</td>
</tr>
<tr>
<td></td>
<td><strong>Properties Included in the Inventory of Historic and Archaeological Assets of the Commonwealth</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Harvard Business School – Athletic Facilities Area</td>
<td>Soldiers Field Road, North Harvard Street</td>
</tr>
</tbody>
</table>

7.1.2 Archaeological Resources

The proposed Project site is located on previously disturbed and filled land. No previously identified archaeological resources are located within the Project site. No impacts to archaeological resources are anticipated.

7.2 Impacts to Historic Resources

The proposed Project may affect visual, shadow and wind conditions in the vicinity of the Project site where historic resources are present.
FIG. 7-1: Historic Resources

LEGEND

Site Location

Properties Listed in the State and National Registers

Properties Included in the Inventory

Scale 1:4,800
1 inch = 400 feet

Basemap: 2008 Orthophotography, MassGIS
7.2.1 Visual Impacts

The new building has been designed to maintain a large area of greenspace within the HBS campus that serves as a buffer between the new construction and Soldiers Field Road and the Charles River Basin historic districts. The retention of greenspace and mature trees around the perimeter of the campus will maintain the park-like feeling of the campus and lessen the visibility of the new construction from within the adjacent historic districts and preserve their park and parkway settings. Additional plantings will be located within the site and along the periphery of the property to improve the landscaped buffer between the business school and the roadway.

The new construction will include six full stories and a seventh level on one side of the structure. The height of the new construction is similar to that of the surrounding buildings to maintain a consistency in building form along the riverfront of the campus. The lower floors will include a large component of glass to create a transparency between the greenspace within the campus and along Soldiers Field Road and the remainder of the HBS campus. The upper floors will contain punched openings and larger rectangular expanses of glazing within limestone clad elevations that produce a light and airy structure that minimizes the feeling of the overall massing. The new construction, where visible from the surrounding historic districts, has a low and long profile that maintains the horizontal feeling of the riverfront and HBS campus. The overall siting, massing and choice of materials has been designed to be compatible with the architecture of the Harvard Business School area and blend seamlessly into the landscape in a way that minimizes the visibility of the new construction from within the adjacent historic districts and retains considerable greenspace along the Charles River frontage. The date of construction will be identified on a building cornerstone.

7.2.2 Shadow Impacts

As depicted in the shadow studies (see Figures 5.2-1 through 5.2-8), the proposed Project will have limited shadow impacts of adjacent historic districts. The Project will cast new shadow primarily on adjacent buildings within the Harvard Business School Area, specifically the McArthur (2000) and Kresge (1953) Buildings, structures constructed after the primary period of development of the McKim, Mead and White campus. Fleeting shadow will fall on Soldiers Field Road at 6:00 p.m. during the Summer Solstice (June 21) and again at 3:00 p.m. during the Autumnal Equinox (September 21). Shadow will also fall across Soldiers Field Road and onto the Charles River shoreline and watersheet, resources listed in the Charles River Basin Historic District, at 6:00 p.m. on September 21; however, during this period, much of the area will already be in shadow. Minor new shadow will fall on Soldiers Field Road at 9:00 a.m. and 12:00 p.m. at the Winter Solstice (December 21) and will lengthen at 3:00 p.m. during the same period; however, late in the day, much of the area will already be in shadow.
7.2.3 **Wind Impacts**

Impacts from wind created by the new building are anticipated to be minimal. No significant wind impacts are anticipated to be created, and where wind levels will be increased, these areas are limited to the immediate vicinity of the new structure. No significant changes to existing wind levels within Harvard Business School Area or the adjacent National Register districts are anticipated.

7.2.4 **Groundwater Impacts**

Geotechnical impacts to adjacent historic buildings and districts are not anticipated. As described fully in Section 5.10, the proposed building will be set on a structural slab supported by concrete caissons. The structure will not cause the long-term groundwater level to raise, pond or be lowered in the surrounding area. Temporary construction dewatering will be required inside the limits of the excavation support wall to enable foundation construction. This activity is not expected to affect nearby historic properties.

7.2.5 **Geotechnical Impacts**

No vibration impacts are anticipated for nearby historic properties. A geotechnical monitoring program will be implemented prior to and during construction and will likely consist of settlement monitoring of adjacent buildings. The Project’s geotechnical team will install settlement points on the surrounding buildings, including Kresge and McArthur Halls. The team will survey/monitor those points prior to, during, and post construction.

In addition, seismographs will record vibrations during sheetpile wall installation (excavation support wall) to monitor vibrations. An engineer’s representative will be on site full time during foundation installation to monitor these activities in accordance with the Building Code requirements.

7.3 **Coordination with Other Cultural Resources Reviews**

7.3.1 **State Register Review**

The Project is subject to review by the Massachusetts Historical Commission (“MHC”) in compliance with Massachusetts General Laws Chapter 9, subsections 26-27C as amended by Chapter 254 of the Acts of 1988 as it may require a minor modification to the Chapter 91 License from MassDEP for below-grade utility work and construction staging related to the Project. An MHC Project Notification Form will be submitted to initiate review with the MHC.

7.3.2 **Massachusetts Environmental Policy Act**

As described in Section 3.10, the Project does not meet any requirements which would trigger a MEPA filing. However, consistent with the special review procedures for the 20-year Master Plan, Harvard will seek guidance from Secretary of Environmental Affairs to determine if MEPA review is required.
Chapter 8.0

Infrastructure Systems
8.0 INFRASTRUCTURE SYSTEMS

8.1 Introduction

This section describes the infrastructure systems that will support the Project. Based on initial investigations, the existing infrastructure systems in the area were contemplated in previous campus utility master planning efforts and appear to be able to accept the incremental increase in demand associated with the development and operation of the Project.

The subsequent design processes for the Project will include the required engineering analyses and will adhere to applicable protocols and design standards, ensuring that the Project is properly supported by, and in turn, properly uses Harvard’s and the City’s infrastructure. Detailed design of Harvard’s utility systems will proceed in conjunction with the design of the Project and interior mechanical systems.

The systems discussed below include those owned or managed by the Boston Water and Sewer Commission (“BWSC”), private utility companies, and on-site infrastructure systems. There will be close coordination among these entities and with the Project team during subsequent reviews and the design process.

Energy conservation measures will be an integral part of the Project’s infrastructure design. The buildings will employ energy-efficient and water-conservation features for mechanical, electrical, architectural, and structural systems, assemblies, and materials where possible. A preliminary LEED checklist is included as Appendix C.

8.2 Wastewater

8.2.1 Existing Wastewater

Local sanitary sewer service in the City of Boston is provided by BWSC. Sewage generated in the Project area is conveyed to the Massachusetts Water Resources Authority (“MWRA”) facility on Deer Island via the MWRA South Charles Relief Sewer and the Boston Main Drainage Tunnel.

8.2.2 Demand/Use

The Project will generate approximately 36,000 gallons per day (“gpd”) of sewage for the building program. Generation rates from the Massachusetts State Environmental Code (Title 5) were used to support the development of these preliminary sewage generation estimates. The building’s mechanical system is not expected to produce “blow-down” type discharges since the Project is obtaining hot water/steam and chilled water from Harvard’s central plant.
8.2.3 Proposed Connection

The sewer service for the Project will tie into HBS’s sanitary sewer system which discharges to BWSC mains located in Harvard Way, North Harvard Street and Western Avenue. Harvard will coordinate with BWSC on the design and capacity of the proposed connection to the sewer system. In addition, the Proponent will submit a General Service Application and site plan for review as the Project progresses.

The Project is expected to generate new wastewater flows exceeding 15,000 gallons per day; therefore, a Sewer Connection Permit (self-certification) from the Massachusetts Department of Environmental Protection (“MassDEP”) is required in connection with this Project.

8.3 Domestic Water and Fire Protection

8.3.1 Existing Water Supply System

The Project is located in the Northern Low service area of the BWSC public water supply service areas. The three streets abutting the HBS campus—Soldiers Field Road, North Harvard Street and Western Avenue—are served by 12-inch northern low service mains. The Project is expected to be fed by either a connection to HBS’s internal water system or the 12-inch BWSC main along Soldiers Field Road.

Domestic water demand is based on estimated sewage generation with an added factor of 10 percent for consumption, system losses, and other use. Based upon sewage generation rates calculated previously, the Project will require approximately 39,300 gallons of water per day. No mechanical system demand will be required at the Project site since the Project will be fed steam/hot water and chilled water from Harvard’s central plant.

Harvard is exploring the use of numerous water conservation measures to reduce domestic water demand. These water conservation measures are further described in Section 5.12.

8.3.2 Proposed Connection

To maintain uninterrupted water services, separate domestic and fire protection services will be provided from either a connection to HBS’s internal water system or the 12-inch BWSC main along Soldiers Field Road.

Domestic water service connections required by the Project will meet the applicable city and state codes and standards, including cross-connection backflow prevention.

Compliance with the standards for the domestic water system service connections will be reviewed as part of BWSC’s Site Plan Review Process. The review includes, but is not limited to, sizing of domestic water and fire protection services, calculation of meter sizing, backflow prevention design, and location of hydrants and siamese connections to conform to BWSC and Boston Fire Department requirements.
8.4 Stormwater Management

The stormwater management controls will be established in compliance with BWSC standards and MassDEP’s Stormwater Management Policy. The Project is not expected to introduce peak flows, pollutants, or sediments that would potentially impact the receiving waters of the local stormwater drainage system. Among the stormwater management controls considered for implementation will be deep sumped and hooded catch basins, sump cleaning, and oil/gas separators. In addition, as part of the ongoing design and engineering processes, the design team is investigating various mitigation options for stormwater that includes retention and reuse. The mitigation measures may include directing stormwater to the landscape for natural mitigation, treatment through biological processes such as treatment swales and/or water features, and infiltration back to the natural soils.

As part of the permitting process, the Project will submit stormwater management plans for the Project to the BWSC. Surface drain structures required by the Project will be developed to meet the latest city and state codes and standards. Compliance with the standards for the final site design will be reviewed as part of BWSC’s Site Plan Review Process.

As a commitment to both the goal of improving the water quality of local bodies of water and public education, the Proponents will install plaques that bear the warning “Don’t Dump – Drains to Charles River” at any new and existing site catch basins as suggested in the comments provided by the Boston Environment Department.

The Project is expected to improve runoff water quality through treatment and infiltration. The existing drainage pattern, which consists of closed pipe drainage discharging to the Charles River, will be mimicked in the future condition. It is important to note that no new surface parking is associated with the Project.

The Project team has begun project coordination with BWSC and has met with the Charles River Watershed Association (“CRWA”). During these discussions, both BWSC and CRWA have introduced the idea of evaluating stormwater management options at a campus-scale or larger-scale. While such larger scale suggestions cannot be implemented on a Project-scale basis, as a clearer path is developed for Harvard’s master planning work and continued development in Allston, Harvard will be working with both BWSC and CRWA to further understand the large-scale infrastructure concerns and work towards mutually agreeable and beneficial solutions. As part of the BWSC Site Plan Review process, the Project design team will be working with BWSC to develop a TMDL compliant stormwater management strategy for Nutrients for the Project.

8.4.1 Existing Conditions

The Project site is serviced by on-campus drain lines. According to BWSC record information, this existing system includes connections to a 36-inch Department of Conservation and Recreation (“DCR”) drain which flow easterly to the Charles River.

The Project site currently consists of paved walkways and lawn area.
8.4.2 Proposed Conditions

Following treatment to remove sediments, stormwater from the site will be routed predominantly through infiltration systems with overflow relief to the existing on-site storm drain system. It is expected that the runoff from the building roofs will be directed to an infiltration system capable of infiltrating one-inch of runoff. Roof runoff from rainfall events exceeding one-inch would be directed to the existing on-site storm drain system.

Stormwater management controls will be established in compliance with BWSC standards, and the Project will not introduce any increased peak flows, pollutants, or sediments that would potentially impact the Charles River. In conjunction with the site plan and the General Service Application, the Proponent will submit a stormwater management plan to BWSC. Compliance with the standards for the final site design will be reviewed as part of the BWSC Site Plan Review Process.

Overall, water quality will be improved through the introduction of system pre-treatment prior to infiltration and/or discharge to the existing closed pipe drainage system. Peak rates and volumes are expected to be substantially reduced through the introduction of over-sized infiltration capacities. Further, Harvard’s continued explorations of beneficial stormwater reuse and careful selection of site materials could increase the positive impact of the Project on the improvement of water quality and the reduction in runoff rates and volumes.

8.4.3 MassDEP Stormwater Management Standards

This section discusses the Project’s compliance with each of MassDEP’s Stormwater Management Policy Standards.

8.4.3.1 Standard #1: Untreated Stormwater

Untreated stormwater will not be introduced from the Project. It is currently anticipated that walkway and hardscape drainage will be either directed to landscaped areas for treatment and infiltration and/or, where not possible to direct to landscaped areas, runoff will be directed to catch basins with hoods and sumps to collect sediments and help control floatables.

Roof runoff will be directed through pre-treatment prior to discharge to infiltration galleys below landscaped areas adjacent to the building. As noted previously, the equivalent of one-inch of infiltration volume is expected to be provided. An overflow to the storm drainage system will be provided for the infiltration system.

Beneficial reuse of harvested stormwater is still under consideration. Harvard acknowledges BWSC’s requirement for separate metering of harvested stormwater.

The final configuration of all stormwater systems will be reviewed by BWSC under the BWSC Site Plan Approval process. The location, sizing and configuration of these systems is contingent upon the approval of the individual building configurations and massing by the BRA.
8.4.3.2 Standard #2: Post-Development Peak Discharge Rates

The Project, through its conceptual stormwater management plan (maximizing landscaped areas and providing the equivalent of one-inch of infiltration or more), is expected to reduce peak discharge rates. Upon approval by the BRA, the Project will prepare stormwater calculations for review and approval by BWSC demonstrating the reduction in peak discharge rates. The Project is studying LEED certification credits for the reduction in peak runoff rates and volumes (see Appendix C and Section 5.12 for further information).

8.4.3.3 Standard #3: Recharge to Groundwater

As noted previously, the Project is providing infiltration for one-inch of runoff, either through infiltration chambers or equivalent stormwater best management practices ("BMPs"). The targeted infiltration well exceeds MassDEP’s minimum requirements for recharge to groundwater.

8.4.3.4 Standard #4: 80 Percent Total Suspended Solids Removal

The overall Project is targeting the removal of 80% of total suspended solids ("TSS") through the use of a long term pollution prevention plan, as well as the use of BMPs and Low Impact Design ("LID") design features including street sweeping, deep sump hooded catch basins, water quality units (hydrodynamic separators), grass channels, dry wells, infiltration basins, and possibly green roofs.

8.4.3.5 Standard #5: Higher Potential Pollutant Loads

The Project site does not contain land uses with higher potential pollutant loads.

8.4.3.6 Standard #6: Protection of Critical Areas

The Project site does not contain any critical areas.

8.4.3.7 Standard #7: Redevelopment Projects

The Project is a redevelopment and intends to meet the Stormwater Management Standards to the maximum extent practicable.

8.4.3.8 Standard #8: Erosion/Sediment Controls

The Project’s construction documents will include measures and specifications regarding erosion and sediment controls and barriers (e.g., silt fence, catch basin sacks). Construction dewatering discharges will be appropriately controlled and discharged in accordance with National Pollutant Discharge Elimination System ("NPDES") and state dewatering standards.
8.4.3.9 Standard #9: Operation/Maintenance Plan

An Operation and Maintenance plan will be developed for both construction and post-development, which will include system ownership information, parties responsible for operation and maintenance, and inspection and maintenance schedules. Routine maintenance includes catch basin cleaning, stormwater control cleaning, and removal of debris from outlets. It is also expected that pedestrian and vehicular access ways will be swept appropriately to control sand applied during winter months.

Measures aimed at minimizing the disposition of site soils to off-site areas, primarily the surrounding streets and existing drainage collection systems, will be a part of the City’s required Construction Management Plan. In addition, the Proponent will be applying for all appropriate permits for construction activity and dewatering. All efforts will be made to contain sediment, pollutants, and other construction-related materials within the site. Stabilized construction exits will be installed at each access point of the work areas to minimize off-site transport of soil by construction vehicles. These exits will remain in place until site areas have been stabilized. The Proponent will use BMPs during construction, including installing silt sacks on catch basins.

8.4.3.10 Standard #10: Illicit Discharges

The Project site is not known to contain any illicit discharges.

8.5 Heating and Cooling

As currently planned heating and cooling for the Project will be provided from an existing utility infrastructure system. Chilled water will be obtained from an extension of the existing HBS central chilled water plant located on the campus. Steam will be obtained from an extension of the existing underground high pressure steam main and condensate return system currently serving the campus. It has been determined that there is adequate existing capacity to serve the new building from the existing infrastructure systems on campus. This Project will not require additional steam or chilled water generation equipment.

8.6 Electrical Service Normal Power

Two 15kv primary feeders routed through the existing campus tunnel system from the central utility plant building switchgear will provide normal power to the building. The primary feeders will be connected to a double ended unit substation with a 1000-1500 kVA transformer feeding an integral switchboard to serve the lighting, power and mechanical equipment throughout the building.

The main switchgear will be rated 480/277 volt, 3-phase, 4-wire, 2500A. The switchgear will be service entrance rated with copper bussing and TVSS. The main circuit breaker will be a draw-out power breaker, 100% rated with field adjustable LSIG settings. All feeder breakers will be draw-out power breaker, with field adjustable LSIG settings.
A separate fire pump “tap” will be provided at the unit substation transformer with a separate feeder to a stand-alone circuit breaker enclosure to serve the fire pump.

Interior floor distribution will consist of 480/277 volt distribution panels and panelboards to serve lighting and mechanical equipment. 208/120 volt distribution panels and panelboards via energy efficient self-cooling dry-type step down transformers will be provided to serve receptacle loads. All distribution equipment will be provided by one manufacturer.

8.7 Emergency Power Distribution Systems

A 500-750 kW emergency generator will be located in the building. Three separate automatic transfer switches and distribution panels will be required for emergency, legally required, and optional stand-by branches. Each system will be located in separate rooms from the normal distribution systems. All emergency system wiring will be on conduit and physically separated from the normal systems. A separate circuit breaker and feeder is required to serve the fire pump.

As discussed in the comments provided by the Boston Environment Department, at this time, it is anticipated that comfort air conditioning systems will not be connected to the emergency generator power system. In the event of a heat wave and loss of electrical power, windows may be opened manually to allow for air circulation.

8.8 Fire Alarm System

The fire alarm system for the building will be a new multiplex addressable, microprocessor based, voice evacuation system including all required power supplies, peripheral devices, atrium smoke control panel, elevator status panel, generator annunciator, and fire pump annunciator panel for a complete system in compliance with all applicable codes and standards. The system will be programmed, tested, and be in fully operational condition including all required hardware, software, raceways and interconnecting wiring. All fire alarm wiring will be class “A” in conduit.
Appendix A

BRA Scoping Determination and Comment Letters on the IMPNF/PNF
Appendix A

An annotated copy of the Scoping Determination is included in Appendix A. The major topics and concerns mentioned in the Scoping Determination and comment letters have been addressed throughout the document. In addition, the annotations on the Scoping Determination reference the section or chapter of the IMP Amendment/DPIR that the response to the comment can be found.
June 30, 2011

Ms. Angela Crispi
Associate Dean for Administration and Senior Executive Officer
Harvard Business School
Morgan Hall 115
15 Harvard Way
Boston, MA 02163

Dear Ms. Crispi:

Re: Fourth Amendment to the Harvard University Allston Campus Institutional Master Plan and Tata Hall Institutional Project (Large Project Review) Scoping Determination

Please find enclosed the combined Scoping Determination for the proposed Fourth Amendment to the Harvard University Institutional Master Plan for the Allston campus and the proposed Tata Hall institutional project. The Scoping Determination describes information required by the Boston Redevelopment Authority ("BRA") in response to the Institutional Master Plan Notification Form/Project Notification Form ("IMPNF/PNF") submitted by Harvard University on May 20, 2011 for the purposes of amending the current institutional master plan and to initiate Large Project Review under Section 80 D-5 and Section 80B-2 of the Boston Zoning Code, respectively. Additional information may be required during the course of the review of the proposals.

If you have any questions regarding this Scoping Determination or the review process in general, please contact me at (617) 918-4211.

Sincerely,

Michael F. Glavin
Deputy Director for Institutional Development
Boston Redevelopment Authority

cc: Mark R. Johnson, Vice President for Capital Planning and Project Management, Harvard University
    Peter Meade, Director - Boston Redevelopment Authority
BOSTON REDEVELOPMENT AUTHORITY

SCOPING DETERMINATION

FOR THE

FOURTH AMENDMENT

TO THE

HARVARD UNIVERSITY ALLSTON CAMPUS

INSTITUTIONAL MASTER PLAN

AND

TATA HALL PROJECT (HARVARD BUSINESS SCHOOL)

PREAMBLE

This Scoping Determination is being issued by the Boston Redevelopment Authority (the BRA”) for both the proposed Fourth Amendment to the Harvard University Allston Campus Institutional Master Plan (the “IMP”) and the Harvard Business School Tata Hall Project (the “Proposed Project”). On May 20, 2011 the President and Fellows of Harvard College (“Harvard” or “Harvard University, or “the university”) submitted an Institutional Master Plan Notification Form/Project Notification Form (“IMPNF/PNF”) on behalf of the Harvard Business School (“HBS”) in accordance with Section 80D-5 of the Boston Zoning Code (the “Zoning Code”) for purposes of amending the current Institutional Master Plan for Harvard’s Allston Campus and Section 80B-2 of the Zoning Code to initiate Large Project Review.

Based on the review of the IMPNF/PNF and comments from public agencies, elected officials, the Harvard-Allston Task Force, and the public, the BRA hereby issues its written Scoping Determination (“Scope”) pursuant to Section 80D and Section 80B of the Code. Harvard is requested to respond to the specific elements outlined in this Scope. Comments from public agencies and elected officials, found in Appendix 1, and from the public, found in Appendix 2, are incorporated as a part of this Scope and should be responded to in the IMP Amendment/DPIR.

This Scoping Determination addresses one project: The construction of Tata Hall, a proposed Executive Education building of approximately 150,000 gross square feet with approximately 180 beds. No land was proposed to be added to the existing IMP area as part of the IMPNF/PNF since the site of the Proposed Project is already a part of the Harvard IMP area. However, the proposed institutional use requires approval under the requirements of Section 80-D of the Zoning Code. The Tata Hall project was presented and discussed at two meetings of the Harvard-Allston Task Force held on May 16, 2011 and June 1, 2011 and the project was the subject of a public agency scoping session held by the BRA on June 2, 2011.
The BRA is requiring that the proponent prepare and submit a combined IMP Amendment and Draft Project Impact Report (“DPIR”) that is responsive to the requirements of this Scoping Determination and that describes the impacts of the IMP Amendment and the Project and the proposed measures to mitigate, limit or minimize such impacts. The DPIR shall contain the information necessary to meet the specifications outlined in Section 80B-3 (Scope of Large Project Review; Content of Reports) and Section 80B-4 (Standards for Large Project Review Approval).

The submission of the DPIR shall be followed by a sixty (60) day public comment period, following which the BRA will issue a Preliminary Adequacy Determination (“PAD”) that indicates the additional steps that may be necessary for the Proponent to satisfy the requirements of this Scoping Determination.

Copies of the combined IMP Amendment and DPIR should be provided to the Harvard-Allston Community Task Force and to the Honan-Allston Branch of the Boston Public Library. Additional copies should be provided to the Executive Secretary of the BRA.

**STATUS OF THE HARVARD ALLSTON INSTITUTIONAL MASTER PLAN**

The currently approved Harvard Allston Institutional Master Plan dates to 1997 and includes several projects that have been completed by the Harvard Business School since the plan’s approval including McArthur Hall, Spangler Center, Hawes Hall along with the university’s construction of graduate student housing at One Western Avenue. The 1997 IMP also includes a specific mention of a proposed Executive Education housing project in the approximate location of the proposed Tata Hall project, the subject of this scoping determination.

In May 2002, the university amended the 1997 IMP to add two existing facilities to its IMP area: 1230 Soldiers Field Road and 25 Travis Street.

In October of 2002, the university renewed the amended 1997 IMP without further changes.

In 2007, the university amended the 1997 IMP to add the site of the proposed Science Complex on Western Avenue and gained approval of the amendment by the BRA in October of 2007 and by the Boston Zoning Commission in December of that same year. The 2007 IMP Amendment extended the term of the renewed IMP for five years.

In January of 2007, the university filed an IMPNF to begin the process of filing a new IMP to provide a planning framework to support Harvard’s development goals in Allston for the next 50 years. The IMPNF presented a context for the long-range planning goals for the existing IMP area and approximately 70 acres of additional Harvard owned land that was proposed to be added to the IMP area. After long and careful review, the BRA issued a Scoping Determination in July of 2008 in response to the IMPNF. However, the university has not filed an IMP due, as stated by the university, to the severe impacts of the global financial circumstances of the past several years.

With respect to the future planning for the areas identified in the 2007 IMPNF, the university has recently released the recommendations of an internal review committee named the Allston
Work Team, a group comprised of University deans, faculty members and alumni. Earlier this month, the Work Team’s recommendations were submitted to the President of Harvard simultaneously with their release to the general public for comment and input.

In January 2011, the university filed a third amendment to the 1997 IMP to add the uses included in the Harvard Innovation Lab at 125 Western Avenue. The 2011 IMP amendment was approved by the BRA on March 10, 2011. The Innovation lab is currently under construction and expected to open in the Fall of this year.

The university’s request for a fourth amendment to the 1997 IMP, also a focus of this scoping determination, relates specifically to the Tata Hall Proposed Project and does not propose a time extension or any addition of land to the boundaries of the current IMP.
SUBMISSION REQUIREMENTS

FOR THE

FOURTH AMENDMENT
TO THE
HARVARD UNIVERSITY ALLSTON CAMPUS
INSTITUTIONAL MASTER PLAN

AND

TATA HALL PROJECT (HARVARD BUSINESS SCHOOL)

This Scoping Determination requests information required by the BRA for its simultaneous review of the Proposed IMP Amendment and Proposed Project in connection with the following:

1. Certification of Compliance and approval of the Proposed Amendment pursuant to Article 80, Section 80D of the Code, and

2. Certification of Compliance and approval of the Proposed Project pursuant to Article 80, Section 80B of the Code.

Subsequent to the end of the sixty (60) day public comment period on the DPIR, the BRA will issue a Preliminary Adequacy Determination (“PAD”) that indicates the additional steps necessary for Harvard to satisfy the requirements of the Scoping Determination and all applicable sections of Article 80 of the Code. If the BRA finds that the DPIR adequately describes the Proposed Amendment’s and Proposed Project’s impacts and, if appropriate, proposes satisfactory measures to mitigate, limit or minimize such impacts, the PAD will announce such a determination and that the requirements for the filing and review of a Final Project Impact Report (“FPIR”) are waived pursuant to Section 80B-5.4(c)(iv) of the Code. Before reaching said findings, the BRA shall hold a public hearing pursuant to Article 80 of the Code. Sections 80B-6 and 80D-10 require the Director of the BRA to issue a Certification of Compliance and a Certification of Consistency, respectively, before the Commissioner of Inspectional Services can issue any building permit for the Proposed Project.

In addition to full-size scale drawings, thirty-five (35) hard copies of the full bound report should be submitted to the BRA, in addition to an electronic version in .pdf format. An additional thirty-five (35) hard copies of the document should be made available for distribution to the Harvard-Allston Task Force, community groups, and other interested parties in support of the public review process. The report should contain all submission materials reduced to size 8-1/2”x11”, except where otherwise specified, and should be printed on both sides of the page. A copy of this Scoping Determination must be included in the report submitted for review.

The DPIR should include the following elements.
1. GENERAL INFORMATION

- **Applicant/Proponent Information.** Pursuant to Article 80B, the DPIR should provide the following information:
  
  - **Development Team**
    - Names of developer(s), including description of development entity(ies), attorney, project consultants and architects.
    - Business address, telephone number, fax number and e-mail, where available, for each.
    - Designated contact for each.
  
  - **Legal Information**
    - Legal judgments or actions pending concerning the Proposed Project
    - History of tax arrears on property owned in Boston by Applicant.
    - Evidence of site control over Proposed Project site, including current ownership and purchase options of all parcels in the Proposed Project, all restrictive covenants and contractual restrictions affecting the Proponent's right or ability to accomplish the Proposed Project, and the nature of the agreements for securing parcels not owned by the Applicant.
    - Nature and extent of any and all public easements into, through, or surrounding the site.

- **Disclosure of Beneficial Interests.** Disclosure of Beneficial Interests in the Proposed Project must be provided pursuant to Section 80B-8 of the Boston Zoning Code.

- **Regulatory Controls and Permits.** The DPIR shall include an up-to-date listing of all anticipated permits or approvals required from other municipal, state or federal agencies, including a proposed application schedule. A statement on the applicability of the Massachusetts Environmental Policy Act ("MEPA") should be provided. If the Proposed Amendment and/or Proposed Project is subject to MEPA, all required documentation should be provided to the BRA, including but not limited to, copies of the Environmental Notification Form, decisions of the Secretary of Environmental Affairs, and the proposed schedule for coordination with BRA procedure.

2. PROJECT DESCRIPTION

- **Project Site.** The DPIR shall include a complete description of the Project Site including, at minimum, square footage of the site, a map indicating the boundaries, a legal description including metes and bounds or site survey acceptable to the BRA, existing site conditions, and the surrounding development context, i.e. a description of the surrounding environment including the height, other dimensions, use, and other relevant characteristics of existing nearby buildings, as well as an inventory of surrounding proposed projects. Only projects that are currently undergoing or have recently completed Article 80 review should be included as proposed in their filings at the Boston Redevelopment Authority. The Project Site, as defined in the DPIR, must be utilized for each Project Description and for any calculations or comparisons.
• **Project Description.** The DPIR shall contain a full description of the Proposed Project and any alternative(s) and their elements, including size, physical characteristics, FAR (utilizing the definition for calculation as provided for in the Boston Zoning Code), and proposed uses.

• **Public Access.** The DPIR should clarify the degree and conditions of public access (i.e. to non-Harvard affiliates) to the building and site program elements, including: the courtyards, surrounding walkways, pedestrian bridges, and landscaped areas; building entrance(s), and ancillary interior spaces; parking.

• **Public Safety and Security.** The DPIR shall discuss the security provisions for the site and building, including any provisions for security guards, security cameras and emergency call boxes.

### 3. RELATIONSHIP TO HARVARD ALLSTON CAMPUS MASTER PLAN

The DPIR should describe how the Proposed Project differs from the Executive Education housing project that was mentioned in the approved 1997 Harvard Allston Institutional Master Plan and should identify the characteristics of the Proposed Project that are specific to the current request for a fourth amendment to the IMP. In addition, the proponent should describe how the Proposed Amendment and Proposed Project support the overall goals and objectives of the currently approved IMP. In the DPIR, the Proponent should refer to information provided in response to the Urban Design Component section below pertaining to the design character of the Project, improvements to the circulation patterns with the surrounding campus, the relationship of the proposed Project to the riverfront, and the relationship of the Proposed Project to the recommendations of the university’s Allston Work Team for the development of the campus and other properties that had been previously projected for campus development in the IMPNF of January, 2007.

### 4. PROJECT ALTERNATIVES

The analyses as provided for in the Transportation Component, Environmental Protection Component, and Urban Design Component sections of this Scoping Determination, as well as any additional analysis specified by the BRA, shall be required for the following alternatives:

- **Alternative 1.** No build as a means of measuring the baseline.
- **Alternative 2.** The Proposed Project.
- **Alternative 3.** Any additional alternative or alternatives defined by the BRA. As of the date of issuance of this Scope, the BRA does not intend to require analysis of any alternative but the two described above; however, the BRA reserves the right to extend the requirement of any and all elements of the analysis described herein to an additional alternative.

### 5. TRANSPORTATION COMPONENT

As described in the IMPNF/PNF, the Proposed Project does not require any proposed changes or improvements to the adjacent public street system. In addition, the proponent states that no additional parking spaces are being created on campus to serve the Project because the
Executive Education participants rarely arrive by private automobile and rarely leave the HBS campus while participating in the Executive Education program.

Nonetheless, the DPIR shall include a detailed discussion of traffic and transportation conditions that describes the Proposed Project's impact on the transportation network, if any, and proposes measures intended to mitigate, limit, or minimize any such adverse impacts reasonably attributable to the Proposed Project. In preparing the DPIR and throughout the subsequent review period, Harvard is to coordinate its discussion of traffic and transportation conditions in consideration of any input or comments offered by the Boston Transportation Department ("BTD"), and the Boston Environmental Department ("BED"). In addition, the written comments of the BED and the City of Boston’s Commission For Persons With Disabilities ("CPD") are included in Appendix 1 and are incorporated herein by reference and made a part hereof. Responses to the BED and CPD comments shall be included in the DPIR.

The scope of the discussion must utilize as its general framework the Transportation Access Plan guidelines described in Section 80B-3.1 of the Boston Zoning Code, to be further defined in consultation with the Boston Transportation Department ("BTD"). Section 80B-3.1 forms the basis of the sections below, and any terms in those sections not defined herein are defined in the Boston Zoning Code or otherwise defined by the Boston Transportation Department for the purposes of Large Project Review. Also, comments by the Boston Environment Department are included in Appendix 1 and are incorporated herein by reference and made a part hereof.

- **Traffic Management Element.** Harvard shall work with BTD to:
  - Identify the Proposed Project's vehicle trip generation including mode share, and describe the potential impacts, if any, to the adjacent roadway network.
  - Describe the loading demand and facilities that will be used to service the Proposed Project and describe in detail any special loading policies and procedures to be implemented.
  - The DPIR shall describe Transportation Demand Management ("TDM") measures that are being considered for the Proposed Project.
  - Review provisions for service and emergency vehicle access to the Proposed Project.

- **Parking Management Element.** Harvard shall work with BTD to:
  - Identify the location of proposed drop-off/pick-up, short-term parking, loading, and queuing for both autos, including taxis, and trucks.
  - Describe the parking demand associated with participants of the Executive Education program and staff.
  - Identify the demand, if any, created by the Proposed Project for tenant, commuter, and short- and long-term visitor parking; non-tenant and other parking needs within the Impact Area; and evening and weekend parking needs.
  - Describe the University's parking management plan or approach and its relationship to the Proposed Project.
  - Provide a campus-wide inventory of institutional parking by location, volume, and categories of current and proposed use.

- **Article 80 Construction Management Element.**
As part of the response to the Construction Impacts component described in more detail in Section 6, the DPIR should include a discussion of construction-period impacts and mitigation, including:

- A description of the location of construction staging areas;
- A description of the location and management of construction worker parking;
- The proposed access and egress routes for construction trucks;
- The anticipated volume of construction truck traffic;
- The identification of any necessary construction period traffic mitigation;
- The designation of a liaison between the Proposed Project, public agencies, and the surrounding residential and business community.

- **Pedestrian Analysis.** The DPIR should describe the pedestrian infrastructure in the area of the Proposed Project and any proposed improvements to facilitate pedestrian circulation to and around the Proposed Project and ways that the development can improve the overall pedestrian circulation system, safety, and accessibility for individuals with disabilities including, access to the Charles River and the Cambridge campus.

- **Bicycle Facilities.** The DPIR should describe the location, quantity, and type (i.e. sheltered vs. unsheltered/convenience) of bicycle parking in the vicinity of the Proposed Project, as well as the relationship of the Proposed Project to the overall campus and neighborhood bicycle transportation network.

- **Shuttle and Bus Service.** The DPIR should describe the relationship between the Proposed Project and the University's shuttle bus system, and assess whether additional service or infrastructure (e.g., shelters) is needed to support the Proposed Project.

- **Mitigation.** Identify measures to mitigate any transportation impacts identified as a result of the analysis requested in this section.

### 6. ENVIRONMENTAL PROTECTION COMPONENT

The DPIR shall contain an Environmental Protection Component as outlined below. In preparing the DPIR and throughout the subsequent review period, Harvard is to coordinate its planning for opportunities for sustainable design in consideration of any input or comments offered by the BRA and other public agencies. The analyses as provided for in the Environmental Protection Component section of this Scoping Determination shall be required for each of the alternatives.

- **Wind.** In consideration of the relatively low density of the surrounding area and the modest overall height of the Proposed Project as described in the IMPNF/PNF, the DPIR should include a qualitative discussion of wind impacts that describes the projected wind conditions in the no-build and build conditions. Particular attention should be given to areas of pedestrian use, including, but not limited to, the entrances to the Proposed Project, as well as the walkways and open spaces adjacent to the Proposed Project.

If the results of the qualitative wind discussion show the potential for adverse wind conditions, the BRA withholds the right to request a quantitative wind analysis conducted in accordance with accepted BRA guidelines and criteria.
• **Shadow.** A shadow analysis shall be required for existing and build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice and for 6:00 p.m. during the summer and autumn. It should be noted that due to time differences (daylight savings vs. standard), the autumnal equinox shadows would not be the same as the vernal equinox shadows and therefore separate shadow studies are required for the vernal and autumnal equinoxes. Shadows shall be determined using the Boston Altitude and Azimuth data (Sun Altitude/Azimuth Table, Boston, Massachusetts).

The shadow impact analysis must include net new shadow as well as existing shadow. Diagrams must clearly show the incremental impact of the proposed new buildings. For purposes of clarity, new shadow should be shown in a dark, contrasting tone distinguishable from existing shadow. The shadow impact study area shall include, at a minimum, the entire area to be encompassed by the maximum shadow expected to be produced by the Proposed Project (i.e., at the winter solstice). The build condition shall include all buildings under construction and any proposed buildings anticipated to be completed prior to completion of the Proposed Project. Shadow from all existing buildings within the shadow impact study area shall be shown. A North arrow shall be provided on all figures and street names, doorways, bus stops, open space and areas where pedestrians are likely to congregate (in front of historic resources or other tourist destinations, for example) should be identified.

Particular attention shall be given to areas of pedestrian use, including, but not limited to, the entrances to the Proposed Project buildings and existing buildings in the vicinity of the Proposed Project, as well as the sidewalks and walkways within and adjacent to the Proposed Project development and in the vicinity of the proposed development.

The DPIR should propose mitigation measures to minimize or avoid any adverse shadow impact. Special attention should be given to minimize or avoid any adverse shadow impact on the Charles River waterway and riverside parkway and landscaped areas.

• **Daylight.** A daylight analysis for both build and no-build conditions shall be conducted by measuring the percentage of skydome that is obstructed by the Proposed Project and evaluating the net change in obstruction. The study should treat two elements as controls for data comparisons: existing conditions and context examples. The publicly defined areas of interest include the sidewalk along Soldiers Field Road and the middle of the newly defined courtyard between Tata Hall and Kresge Hall. Daylight analyses should be taken for each major building façade fronting these essentially public ways or open spaces. The midpoint of each public accessway or roadway should be taken as the study point. This data should be compared to those same points in a no-build condition and similar points along the Harvard Business School frontage to the Charles River and similar quasi-public open spaces on the campus today. The BRADA program should be used for the analysis.

• **Solar Glare.** The DPIR should discuss the potential for solar glare and, if necessary, proposed measures to study the impact in more detail. The solar glare discussion should include information with regard to the potential impact of solar glare on driver safety for
traffic on Soldiers Field Road and the impact on persons boating, biking, or running or otherwise present in the recreational areas adjoining the Charles River.

- **Air Quality.** Based on the information contained in the IMPNF/PNF, specifically that the Proposed Project has limited traffic impacts, is not providing any new parking spaces and does not include a loading dock, the BRA is not requiring an air quality analysis as part of the DPIR.

However, as part of the Infrastructure Systems Component below, the DPIR should include a description of the Proposed Project’s heating and ventilation systems, including the location and specifications of intake and exhaust vents, and include a description of the potential for impact on pedestrian level air quality and on any sensitive receptors from operation of the heating and exhaust systems. Measures to avoid any violation of air quality standards shall be described.

- **Solid and Hazardous Wastes.** The presence of any contaminated soil or groundwater and any underground storage tanks at the Proposed Project site shall be evaluated and remediation measures to ensure their safe removal and disposal shall be described. Any assessment of site conditions pursuant to the requirements of M.G.L. Chapter 21E that has been or will be prepared for the Proposed Project site shall be included in the DPIR (reports may be included in an appendix but shall be summarized in detail, with appropriate tables and figures, within the main text). If any building demolition is required for the Project, the materials in the building or structure to be demolished should be characterized and measures to mitigate impacts during demolition should be identified.

The DPIR shall describe the generation, storage, and disposal of all solid wastes from the construction and operation of the Proposed Project. The DPIR shall identify the specific nature of any hazardous wastes that may be generated and their quantities and shall describe the management and disposal of these wastes. In addition, measures to promote the reduction of waste generation and recycling, particularly for paper, glass, plastics, metals, and other recyclable products, and compliance with the City’s recycling program, shall be described in the DPIR.

- **Noise.** As part of the Infrastructure Systems Component discussed below, the DPIR should include a description of the Proposed Project’s mechanical and exhaust systems and their location, as well as the potential for noise impacts from the equipment. In addition, the DPIR should describe measures to minimize and eliminate adverse noise impacts on the nearby sensitive receptors, including the Proposed Project itself, from mechanical systems. This discussion should indicate how any exterior equipment will be housed and whether any acoustical buffering will be included.

- **Nighttime Lighting.** The impact of both interior and exterior lighting on the residents of nearby buildings is a concern. The DPIR should explain, in text or graphics as appropriate:

  - The type of exterior lighting to be used on each façade or other portion of the building and the elements of the design that mitigate nighttime lighting impacts of the building on surrounding areas.
• Measures being taken to minimize any negative impacts of interior lighting on the surrounding areas.

• **Stormwater Management/Water Quality.** Stormwater management requirements and suggestions are included in the section on environmental sustainability below.

• **Flood Hazards/Wetlands.** Describe any affected flood hazard zones or wetlands and proposed actions.

• **Geotechnical Impact/Groundwater.** A description and evaluation analysis of existing sub-soil conditions at the Proposed Project site, groundwater levels, potential for ground movement and settlement during excavation and foundation construction, and potential impact on adjacent buildings, utility lines, and the roadways shall be required. This analysis shall also include a description of the foundation construction methodology, the amount and method of excavation, and measures to prevent any adverse effects on adjacent buildings, utility lines, and roadways. Measures to ensure that groundwater levels will be maintained and will not be lowered during or after construction also shall be described. In addition, the DPIR should describe the earthquake potential in the Proposed Project area and any measures being implemented to mitigate any adverse impacts from an earthquake event.

• **Construction Impacts.** A construction impact analysis shall include a description and evaluation of the following:
  
  • Measures to protect the public safety including the limit of construction fencing, location of access gates, and methods by which the gates will be secured. Particular emphasis should be placed on describing the area to the south of Tata Hall adjacent to the existing Soldier’s Field Park housing and outdoor children’s play area.
  • Potential dust and pollutant emissions and mitigation measures to control these emissions.
  • Potential noise generation and mitigation measures to minimize increase in noise levels.
  • Location of construction staging areas and construction worker parking: measures to encourage carpooling and/or public transportation use by construction workers.
  • Any impacts of intended drilling, digging, or blasting.
  • Construction schedule, including hours of construction activity.
  • Access routes for construction trucks and anticipated volume of construction truck traffic.
  • Construction methodology (including foundation construction), amount and method of excavation required, storage and disposal of the excavated material, description of foundation support, maintenance of groundwater levels, and measures to prevent any adverse effects or damage to adjacent structures and infrastructure.
  • Schedule and method of demolition of the existing buildings, if any, on the Proposed Project site and intended method of disposal of the demolition debris.
  • Potential for the recycling of construction and demolition debris, including any asphalt that is being removed.
  • Measures to make construction fencing as attractive as possible to ensure the visual character of the streetscape.
Identification of best management practices to control erosion and to prevent the discharge of sediments and contaminated groundwater or stormwater runoff into the City's drainage system during the construction period.

Impact of Proposed Project construction on rodent populations and description of the proposed rodent control program, including frequency of application and compliance with applicable City and State regulatory requirements.

Harvard’s plan for handling demolition debris and construction waste. The DPIR should discuss how recycling, reuse and reprocessing will be conducted. Any required building demolition may offer an opportunity for recycling, reprocessing or donation of construction and building materials (e.g., glass, brick, stone, interior furnishing) to the Building Materials Resource Center (“BMRC”). Harvard is encouraged to contact the BMRC at the following address regarding disposal and/or acquisition of materials that may be appropriate for use:

Building Materials Resource Center
100 Terrace Street
Roxbury, MA 02120
617-442-8917

For the recycling, reuse and reprocessing of demolition waste and construction debris not suitable for use by the BMRC, we recommend speaking with Mark Lennon of The Institution Recycling Network (IRN) at 1-866-229-1962. IRN can divert up to 95 percent of waste from a job site. End markets have been identified for a wide variety of materials.

7. URBAN DESIGN COMPONENT

URBAN DESIGN COMPONENT

General Context

The development of the new Executive Education building for the School of Business, Tata Hall, should be reviewed in the broader context of Harvard’s other long-term development concepts. The site occupies a prominent site, acting as the link between the core of the Cambridge campus, the current and future Harvard Business School facilities, and the many new projects envisioned along Western Avenue. The building’s high visibility and the outdoor spaces created by the massing strategy should have an impact on the architectural solution for the project.

Harvard has initiated the design review of the Proposed Project in accordance with BRA procedure. Further, the Boston Civic Design Commission commenced its review of the project on June 7, 2011 and viewed an introductory presentation by the proponent. The proponent is requested to respond to comments made by the Commissioners. An excerpt from the BCDC minutes of June 7, 2011 will be forwarded when they are available. Additionally,

Public Realm
The location and shape of the building’s massing creates a series of new open spaces and pedestrian pathways which need to be evaluated in detail. The largest and most visible of these spaces, Tata Lawn, lies between the proposed building and Soldier’s Field Road and is created by the large curve of the tallest portions of the project. This space has great potential to be a welcoming place along an enhanced pedestrian route along the river to the Western Avenue corridor, the “Enterprise Research Campus”, and the Science Center complex. Illustrated site plans should describe in detail the pathways and landscape elements in order to provide a sense of what activities will occur in this space, how the space is accessed, and what relationship the open space has to the building, the Business School campus, and the larger Charles River open space. Particular emphasis should be given to the pedestrian connection along Soldiers Field Road and coordination with appropriate agencies and land owners should begin immediately.

Similarly, the Executive Education Quad, which lies between the proposed Tata Hall and the existing Kresge Hall and McArthur Hall, should be developed in order to provide clear and legible access between the Weeks Footbridge and East Drive. The pathways which lead to the heart of the Business School campus and, more importantly, the future Harvard campus, should be well defined. This space is challenging due to the awkward shapes and arrangement of existing buildings and the demands of existing loading and servicing needs for the adjacent campus buildings. Developed landscape plans and building elevations should demonstrate how these deficiencies will be overcome to produce a successful Quad, as well as to the rest of the Business School campus. Perspective views should be provided which describe how pedestrians are oriented to and from the Weeks Footbridge as they enter the quad and how the large 2-sided glass walls of the proposed building will enable views to Tata Lawn and the Charles River beyond to the east.

The third open space shaped by the proposed project lies at the threshold moment at the base of the Weeks Footbridge staircase. Whether a pedestrian is arriving at the Charles River having just exited the Executive Education Quad, or is arriving at the Business School after crossing the river, this area should be designed to create the “clear and welcoming entry” as mentioned in the PNF. Details regarding the configuration, material, and lighting will be needed to evaluate its success. In addition, opportunities to improve accessibility to both the Weeks Footbridge and the pathway along the Charles River should be investigated.

Due to the prominent location along a major urban boulevard, ground level perspectives will also be necessary to describe the ways in which the proposed building acts as an identifiable beacon from a distance. Special emphasis should be placed on describing the northern end of the curved portion of the building which has the greatest height and is closest to Soldiers Field Road at the bend in the Charles River. Views may include, but not be limited to, the mid-point of the Weeks Footbridge, points along Memorial Drive, the mid-point of the Western Avenue Bridge, and points along Soldier’s Field Road. In addition, a view from Harvard Way near Hawes Hall will help describe the visibility of the project from within the heart of the Business School campus.

Architectural Design

The project described in the Project Notification Form and subsequent meetings outlined a massing strategy for the building which varied from seven to five stories, requiring three
independent elevator and stair cores (and their associated overrides on the roof) to service the 
building. Elevations, three-dimensional views, and models should all depict the extent of these 
elements on the exterior and describe design solutions which minimize their impact. In 
addition, an alternative massing strategy should investigate maintaining a more simple and 
consistent height for the curved portion of the project which could allow for removal of one set 
of elevators and an approach more related to the surrounding Business School context. More 
detail is also necessary to describe the trellis structure which is located in the gap between the 
two portions of the curved massing and what activities are anticipated for the rooftop area.

Additional detail is also needed to address the awkward relationship of the five-story south wing 
of the building with the main curved massing. The intersection of these two volumes creates 
challenges for both the inside and outside corners, particularly given the program elements 
currently shown in these locations. Given their complex geometries, these areas will need to be 
studied in detail in three-dimensional model form. Massing, materials, and fenestration should 
work together to address this issue.

Development of the primary facades which are integral to the public face or image of the 
building should respond to the previously discussed landscape, public realm, and view corridor 
issues. Particular emphasis should be placed on the north elevation facing back toward the 
main campus and Weeks Footbridge, the east elevation facing Tata Lawn, and the west 
elevation facing the Executive Education Quad. These elevations will need to find creative 
solutions to balance the horizontal organization of the design to date which emphasizes the 
transparency of the lower two floors, with a larger recognition of the overall elevation when 
seen from a distance.

Schematic Design

For the proposed Project, we suggest submitting the following urban design materials for their 
schematic design. These are for the most part standard requirements for a DPIR stage. 
Certain of these requirements are also appropriate more broadly to the IMP Amendment.

1. Written description of program elements and space allocation (in square feet) for each 
element, as well as Project totals.
2. Neighborhood plan, elevations and sections at an appropriate scale (1"=100' or larger as 
determined by the BRA) showing relationships of the proposed project to the 
neighborhood context:
   a. massing
   b. building height
   c. scaling elements
   d. open space
   e. major topographic features
   f. pedestrian and vehicular circulation
   g. land use
3. Color, or Black and white photographs of the site and neighborhood.
4. Sketches and diagrams to clarify design issues and massing options.
5. Eye-level perspective (reproducible line or other approved drawings) showing the 
proposals (including main entries and public passages/areas) in the context of the 
surrounding area. Views should display a particular emphasis on important viewing
areas such as key intersections, accessways, or public parks/attractions. Long-ranged (distanced) views of the proposed project must also be studied to assess the impact on the skyline or other view lines. At least one bird's-eye perspective should also be included. All perspectives should show (in separate comparative sketches) both the build and no-build conditions. The BRA should approve the view locations before analysis is begun. View studies should be cognizant of light and shadow, massing and bulk.

6. Additional aerial or skyline views of the project, if and as requested.
7. Site sections at 1\"=20' or larger (or other scale approved by the BRA) showing relationships to adjacent buildings and spaces.
8. Site plan(s) at an appropriate scale (1\"=20' or larger, or as approved by the BRA) showing:
   a. general relationships of proposed and existing adjacent buildings and open spaces
   b. open spaces defined by buildings on adjacent parcels and across streets
   c. general location of pedestrian ways, driveways, parking, service areas, streets, and major landscape features
   d. pedestrian, handicapped, vehicular and service access and flow through the parcel and to adjacent areas
   e. survey information, such as existing elevations, benchmarks, and utilities
   f. phasing possibilities
7) construction limits
9. Massing model (ultimately in basswood) at 1\":40'0" for use in the Authority’s downtown model (at least for the Crossroads proposal)
10. Study model at 1" = 16’ or 1" = 20’ showing preliminary concept of setbacks, cornice lines, fenestration, facade composition, etc.
11. Drawings at an appropriate scale (e.g., 1\":16'0", or as determined by BRA) describing architectural massing, facade design and proposed materials including:
   a. building and site improvement plans
   b. neighborhood elevations, sections, and/or plans showing the development in the context of the surrounding area
   c. sections showing organization of functions and spaces, and relationships to adjacent spaces and structures
   d. preliminary building plans showing ground floor and typical upper floor(s).
   e. phasing, if any, of the Proposed Projects
12. A written and/or graphic description of the building materials and its texture, color, and general fenestration patterns is required for the proposed development.
13. Electronic files describing the site and Proposed Project at Representation Levels one and two ("Streetscape" and "Massing") as described in the document "Boston "Smart Model": CAD & 3D Model Standard Guidelines.
14. Full responses, which may be in the formats listed above, to any urban design-related issues raised in preliminary reviews or specifically included in the BRA scoping determination, preliminary adequacy determination, or other document requesting additional information leading up to BRA Board action, inclusive of material required for Boston Civic Design Commission review.
15. Proposed schedule for submission of all design or development-related materials.
16. Diagrammatic sections through the neighborhood (to the extent not covered in item #2
above) cutting north-south and east-west at the scale and distance indicated above.

17. True-scale three-dimensional graphic representations of the area indicated above either as aerial perspective or isometric views showing all buildings, streets, parks, and natural features.

8. ENVIRONMENTAL SUSTAINABILITY

In addition to the overall campus-wide approach to sustainability discussion in the IMP Amendment, new development of the size and complexity of the Proposed Project presents opportunities for sustainable design and construction to prevent damage to the environment, consistent with the goals of Executive Order 385 and recent initiatives of the Mayor and the BRA. Opportunities for sustainable design are described below. In preparing the DPIR and throughout the subsequent review period, Harvard is to coordinate its sustainable design and construction planning efforts in consideration of any input or comments offered by the City of Boston Environment Department (“BED”). The written comments of the City of Boston Environment Department are included in Appendix 1 and are incorporated herein by reference and made a part hereof. Responses to the BED written comments shall be included in the DPIR. Not all the topics below need be addressed in the DPIR; rather, some of them constitute suggestions that can be discussed through the design process in conjunction with the BRA, the Green Roundtable, and the Boston Environment Department.

- **Building Orientation, Envelope, and Façade Design.** Reduce thermal loads entering the building as much as possible. Consider the building orientation, envelope, and design carefully, including glazing selection, window and door shading, wall construction, roof color, and building shape. Make use of thermal mass to absorb heat and shift peak heating to off-peak hours. Building massing and façade treatment should respond to microclimate conditions and enhance appropriate solar control. The DPIR should describe any simulation designed to quantify the effects of these design choices.

- **Energy.** Energy conservation strategies should be explored at an early stage in the design and should include such approaches as taking advantage of natural day lighting, passive solar gain, passive cooling and ventilation which tie into HVAC systems, use of alternative energy strategies (including making the building design adaptable for the future inclusion of innovative energy and environmental technologies as they develop over time), in addition to properly sized efficient heating and ventilating systems, with heat recovery and other conservation strategies. Siting, orientation and massing of building should optimize passive strategies for light and energy management and design for natural and displacement ventilation. Building design should specify energy efficient HVAC and lighting systems, appliances, and other equipment, and solar preheating of makeup air. Early quantification and cost-benefit analysis through iterative energy simulation is helpful and would provide feedback on size of systems and envelope design early enough to impact those decisions.

- **Water Management.** The DPIR should provide more detail on the approach to stormwater management, and to water management more generally. Of particular interest is the extent to which the Proposed Project takes an integrated approach to
stormwater retention, treatment, and reuse on the one hand, and building and landscape water needs on the other. To the extent feasible, the systems put in place should strive to work with the natural hydrology of the North Allston area, and the building should incorporate additional opportunities to conserve water beyond water-saving technologies required by law.

Harvard’s development should go beyond the minimum requirements related to stormwater runoff. In particular, the Proposed Project should set a goal of reducing stormwater discharge from the Proposed Project site into the storm sewers. This goal should be considered in conjunction with strategies for reuse of retained stormwater and strategies for groundwater recharge if necessary. Harvard should continue to work with the Boston Water and Sewer Commission and the Boston Environment Department as it develops its approach.

Possibilities for using graywater for functions that are conventionally served by potable water should be explored. Stormwater captured from impervious areas or from roofs and hardscapes can be used for non-potable water uses.

The DPIR shall contain an evaluation of the Proposed Project site's existing and future stormwater drainage and stormwater management practices. The DPIR shall illustrate existing and future drainage patterns from the Proposed Project site and shall describe and quantify existing and future stormwater runoff from the site and the Proposed Project's impacts on site drainage. The Proposed Project's stormwater management system, including best management practices to be implemented, measures proposed to control and treat stormwater runoff and to maximize on-site retention of stormwater, measures to prevent groundwater contamination, and compliance with the Commonwealth's Stormwater Management Policies, also shall be described. The DPIR shall describe the stormwater drainage system to which the Proposed Project will connect, including the location of stormwater drainage facilities and ultimate points of discharge.

In preparing the DPIR and throughout the subsequent review period, Harvard is to coordinate its sustainable design and construction planning efforts in consideration of any input or comments offered by the Boston Environment Department and the Boston Water and Sewer Commission.

- **Heat Island Effect.** New construction should take an active role in reducing the urban heat island effect. The design should incorporate plant materials and light colored (high reflectance and thermal emittance) products on the building and site to reduce the urban heat island effect.
- **Performance Monitoring.** The DPIR should lay out a strategy for conducting annual audits of energy consumption, waste streams, and the use of renewable technologies.
- **Sustainable Materials.** Favor building materials and purchases of supplies that are non-toxic, made from recycled materials, and made with low embodied energy.
- **Management and Maintenance Plan.** Harvard should prepare an environmentally sound building/site management and maintenance plan, including building an easily accessible recycling system infrastructure into the Proposed Project's design and training.
faculty, staff, and students to observe standards of care for the building/site to maximize efficient use.

9. **HISTORIC RESOURCES COMPONENT**

The DPIR should summarize any historic resources that will be affected by the Proposed Project, the position of public agencies on those resources (including any necessary regulatory process), and present a plan to minimize the adverse impact of the Proposed Project.

10. **INFRASTRUCTURE SYSTEMS COMPONENT**

The DPIR must include an infrastructure impact analysis. In preparing the DPIR and throughout the subsequent review period, Harvard is to coordinate its infrastructure design and construction planning efforts in consideration of any input or comments offered by the Boston Water and Sewer Commission (BWSC) and the Boston Public Works Department (PWD).

The discussion of Proposed Project impacts on infrastructure systems should be organized system-by-system as suggested below. The DPIR must include an evaluation of the Proposed Project's impact on the capacity and adequacy of existing water, sewerage, energy (including gas and steam), and electrical communications (including telephone, fire alarm, computer, cable, etc.) utility systems, and the need reasonably attributable to the Proposed Project for additional systems or facilities. Thorough consultation with the planners and engineers of the utilities will be required, and should be referenced in the Infrastructure Component section.

Any system upgrading or connection requiring a significant public or utility investment, creating a significant disruption in vehicular or pedestrian circulation, or affecting any public or neighborhood park or streetscape improvements, constitutes an impact which must be mitigated.

- **Water and Sewer.** Provide the following information on the Proposed Project’s impact on water and sewer infrastructure and on water quality. As appropriate, this information can be integrated with the sustainability section of the DPIR.

  - Estimated water consumption and sewage generation from the Proposed Project and the basis for each estimate. Include separate calculations for air conditioning system make-up water.
  - Description of the capacity and adequacy of water, sewer, and storm drain systems and an evaluation of the impacts of the Proposed Project on those systems.
  - Description of the Proposed Project's impacts on the water quality of Boston Harbor or other water bodies that could be affected by the Proposed Project, if applicable.
  - Description of mitigation measures to reduce or eliminate impacts on water quality.
  - Description of impact of on-site storm drainage on water quality; if this is described more fully in another section, reference that analysis here.
  - Detail methods of protection proposed for infrastructure conduits and other artifacts, including BSWC sewer lines and water mains, during construction.
  - Detail the energy source of the interior space heating; how obtained, and, if applicable, plans for reuse of condensate.
  - Identification of measures to conserve resources, including any provisions for water recycling.
• **Energy Systems.** The DPIR should discuss the Proposed Project’s approach to energy systems and conservation. As appropriate, this information can be integrated with the sustainability sections of the DPIR. The discussion should include at a minimum the following:

  - Description of all energy (heat, electrical, cooling, etc.) requirements of the Proposed Project and evaluation of the Proposed Project’s impacts on resources and supply.
  - Description of measures to conserve energy usage and consideration of the feasibility of including solar energy provisions or other on-site energy provisions.

• **Other Systems.** The DPIR should also discuss emergency systems, gas, steam, optic fiber, cable, and any other systems impacted by the Proposed Project. The location of transformer and other vaults required for electrical distribution or ventilation must be chosen to minimize disruption to pedestrian paths and public improvements both when operating normally and when being serviced, and must be described.

11. **MITIGATION/PUBLIC BENEFITS**

**Existing Community Benefits.** The DPIR should discuss the status of the community benefits currently provided by Harvard that are related to the development of its Allston Campus and include updates on any activities that have occurred since the university’s last periodic reporting of community benefits to the BRA.

The DPIR should also address the following:

a. Anticipated Development Impact Project Contribution and Jobs Contribution Grant, specifying amount of estimated housing linkage and jobs linkage contributions and proposed method of housing linkage contribution (housing payment or housing creation).

b. Anticipated employment levels, including new permanent jobs and estimate of construction jobs created.

c. Submission of Boston Residents Construction Plan in accordance with the Boston Jobs Policy.

d. Submission of First Source Agreement and MOU regarding good faith efforts to employ Boston residents in permanent positions.

e. Other public benefits, including, but not limited to, any proposed off-site improvements, community services or programs, training and workshops, infrastructure improvements and capacity upgrades, community access to meeting space, etc.

12. Other
PILOT Payments and Property Taxes. The proponent should initiate a meeting with the City of Boston Assessing Department on the subject of payments in lieu of taxes with regard to the Proposed Project.

North Allston Planning. The DPIR should describe the university’s current and projected planning efforts for its owned properties in the North Allston community.

Template. The proponent should complete the BRA’s Institutional Partnership template to facilitate the collection of standardized data by the BRA. The template is available electronically upon request.

Response to comment letters. The proponent should provide responses to the major topics and concerns raised in the attached comment letters.

Public Notice. The proponent shall be responsible for preparing and publishing in one or more newspapers of general circulation in the City of Boston a Public Notice of the submission of the IMP Amendment/Large Project DPIR, in accordance with the provisions of Article 80.
APPENDIX 1
COMMENTS FROM PUBLIC AGENCIES AND ELECTED OFFICIALS
June 20th, 2011

Michael Glavin
Deputy Director for Institutional Development
Boston Redevelopment Authority
One City Hall Plaza, 9th Floor
Boston, MA 02201

RE: Tata Hall Proposal

Dear Mr. Glavin,

As the delegation of local elected officials representing Allston-Brighton, we wish to provide our comments regarding the Tata Hall proposal.

Harvard has proposed a 150,000 square foot, 78 foot tall building to be used primarily as residences and limited classroom space to benefit Harvard’s Business School campus in Allston. At two public meetings, concerns were raised about the orientation of the proposed building – whether an orientation convex to the river would be more appropriate. As with any $100 million dollar development proposal, we look forward to the local economy benefitting from spending and new construction jobs. We would ask that Harvard give hiring preference to local tradesmen and woman, and that the project achieve LEED-Gold status. Moving forward with the Tata Hall proposal, we look forward to working with Harvard to establish a community benefits package appropriately in-line with a $100 million development. As the BRA develops a scoping determination for the Tata Hall proposal, we should set a concrete timeline for community benefits discussions associated with Tata Hall.

When considering the merits of the Tata Hall project in a vacuum, the proposal represents a fundamentally sound plan to enrich and expand the Executive Education program at Harvard Business School. The Tata Hall proposal is located within the boundaries of Harvard’s existing Business School campus, and is substantially separated from area residences and businesses. As with past proposals, we feel strongly that Harvard must give appropriate attention to construction mitigation, including predicting and addressing any impacts to the surrounding area from traffic, noise and construction personnel over the full duration of the build out.

And yet, as the delegation of the local elected officials representing Allston-Brighton, it is both impossible and inappropriate to offer substantive commentary on the Tata Hall proposal without considering the greater state of affairs between Harvard University and the surrounding community. Tata Hall will significantly improve and enrich the Executive Education program.
experience at Harvard Business School. In response to our continued concerns about Harvard's landbanking in North Allston-Brighton, and in light of Harvard’s $100 million dollar Tata Hall proposal to improve their own campus, we continue to feel strongly that Harvard University must take steps in the short term to make infrastructure improvements in North Allston-Brighton’s Holton Street corridor.

Our calls for improvements to the Holton Street corridor are well documented in previous BRA comment letters. In the October 13th, 2009 letter from Allston-Brighton elected officials to the BRA supporting the Charlesview Proposal, we wrote:

"New development of Harvard owned property should not be considered until significant development of the Holton Street Corridor is realized. This is a priority for our neighborhood and must also be a priority for Harvard. For too long, North Allston and North Brighton residents have endured vacant buildings and barren lots, waiting to implement the recommendations of the Community Wide Plan. Any future development proposed for the Harvard campus must be preceded by development of the Holton Street Corridor."

The BRA struck a similar tone in their December 17th, 2009 letter to Harvard’s Allston Development Group. “...The BRA will insist upon planning and development activity relating to the Holton Street corridor in advance of or simultaneous with Harvard’s campus development efforts”. We expect Harvard to meet these stipulations as the process to approve Tata Hall moves forward. In the short term, development activity in the Holton Street corridor is necessary in order to move forward with the Tata Hall proposal. As the BRA aptly stated in their December, 2009 letter, ‘being a good neighbor requires nothing less’.

Sincerely,

Mark Ciommo
Boston City Councilor
District 9

Kevin Honan
State Representative
17th Suffolk District

Michael Moran
State Representative
18th Suffolk District

Steven Tolman
State Senator
2nd Suffolk and Middlesex District
June 23, 2011

Peter Meade, Director
Boston Redevelopment Authority
Boston City Hall, Room 925
Boston, MA  02201
Attention:  Michael Glavin, Deputy Director for Institutional Development

Re:  Tata Hall – Project Notification Form
     Fourth Amendment to the Harvard University Allston Campus Institutional Master Plan -
     Institutional Master Plan Notification Form

Dear Director Meade:

The City of Boston Environment Department has reviewed the Project Notification Form (PNF) for Tata
Hall at the Harvard Business School (HBS) and the Institutional Master Plan Notification Form (IMPNF)
for the Fourth Amendment to the Harvard University Allston Campus Institutional Master Plan (IMP) and
offers the following comments.

The Proponent, Harvard University (Harvard) on behalf of the HBS, proposes to construct a 150,000
gross square foot Executive Education Building, Tata Hall, for use by the HBS Executive Education
program.  The 95 programs offered in 2010 were attended by a total of 8,700 participants.  The HBS
offered 75 Open Enrollment Programs and 20 Custom Programs designed to meet the needs of
individual companies.  Program lengths were from two days to 53 days.  The programs employed 200
faculty.

The project site is in an area of high groundwater in the northeast corner of the HBS campus in Allston
along Soldiers Field Road and the Charles River.  The uses necessary for the programs are divided
amongst seven buildings in and around that area.  The proposed project, a six or seven story structure
(~78 feet high per zoning), is to be used for 180 bedrooms clustered in groups of eight with a central
living group room, informal gathering space, classrooms and academic and office space.  The building
will be connected to Baker Hall by a tunnel serving as a utility and material handling corridor and
pedestrian connection.  Outdoor landscaping will include a patio with tables and chairs.

Some work such as excavation, installation of utilities, staging, laydown and temporary materials and
equipment storage will take place on filled tidelands.  A minor modification will be required under MGL c.
91.

More than 90 percent of participants are from outside of New England and fly to Logan; most are
expected to take taxis to Harvard with some using intercity rail.  Many of the services/amenities that
participants will need are within walking distance on or around the campus.  Taxis, transit and Harvard
University shuttles will also be available as will bicycle rental at a new Hubway station at Soldiers Field
Park.  The PNF notes that taxicab demand/trips will increase as a result of the project.  Operational
improvements will be made to the main taxi stand on East Drive near Soldiers Field Park Garage which is at or above capacity at mid-day. We note that there are two Zipcars located at Spangler Center and one at Soldiers Field Park. These may be useful for participants whose companies are Zipcar members. We suggest that participants be sent with registration/pre-program materials information on all available transportation options.

The Boston Landmarks Commission (BLC) has reviewed the PNF and IMPNF and looks forward to reviewing the Draft Project Impact Report (DPIR) descriptions of the potential impacts of the project on nearby historic resources within the Harvard Business School Area, the Charles River Reservation/Soldiers Field Road Historic District and the Charles River Basin Historic District as indicated in Section 5.16, Historic Resources. Additional massing drawings and elevations should take visual impacts on historic resources into consideration. Elevations and renderings should show the heights and massing of the seven buildings that presently constitute the Executive Education campus; similar elevations and renderings including the proposed project should also be provided. Potential impacts to historic resources such as groundwater disturbance, vibration and the potential for archaeological sensitivity should be evaluated and discussed in the DPIR, in addition to wind and shadow. The discussion should address both construction and operating periods.

The BLC requests that dated cornerstones be incorporated into all new construction. This element will allow those who are attentive to and value the architecture of the City to appreciate the historical context in which structures were conceived.


The five overarching recommendations of the Leadership Committee are:

- reduce Boston’s GHG emissions 25% by 2020;
- immediately start incorporating projected effects of climate change — particularly sea-level rise, heat waves, and more intense storms — in all planning and review for municipal and private projects;
- develop a comprehensive public engagement effort, including a public commission and strong partnerships with community organizations;
- use climate action opportunities to advance Boston’s green economy and jobs goals; and
- ensure that climate action has clear public and private leadership and sufficient public and private resources.

Climate change is likely to increase average summer temperatures, the number of days over 90 or 100 degrees, and the number of consecutive high-heat days leading to increased stress on the electrical grid. We ask that Harvard assess, and describe in the DPIR, the sufficiency of project systems and green infrastructure (e.g., a green roof) to keep the project and its occupants safe during heat waves without the use of life-safety/emergency systems (e.g., generators) that may add to ozone pollution levels and increase the heat island effect. Natural ventilation can play a role in risk management if the ventilation and passive cooling elements are sufficient in combination to result in the necessary level of benefit. A vegetated roof as described in LEED Green Building Design and Construction (GBDC) New Construction...
(NC) Sustainable Sites (SS) Credit 7.2, Heat Island Effect: Roof, along with non-roof measures (SS 7.1, Heat Island Effect: Non-Roof) and innovative design elements that provide passive cooling are some of the options that should be assessed to address the well-being of occupants. If glazing is considered in design, it would be worthwhile to consider double- or triple-skinned curtainwalls with deep sunshades and adjustable ventilation. They would provide a thermal flue for ventilation necessary to keep solar gain out of buildings in the summer while creating a thermal insulation layer to retain heat in the winter.

As a result of the potential for flooding from more intense storms, stormwater management systems may need to be sized for higher precipitation levels than the current design standards. Even when buildings are not compromised during a storm, roadways may flood, making them impassable. So, the potential effects on transportation accessibility must also be assessed. These two aspects of stormwater management speak to the benefits of a broad response and the importance of SS 6.1, Stormwater Design: Quantity Control, and SS 6.2, Stormwater Design: Quality Control. We urge Harvard to seek these credits.

Appendix A: Floor Plans: Roof Plan shows the shape of the building from above and outlines or what are likely mechanicals and headhouses. Appendix A: Floor Plans: Basement Plan similarly lacks detail. We look forward to plans in the DPIR that identify the locations of recycling storage, materials storage for maintenance functions, mechanicals and any mechanical enclosures or parapets.

The PNF and IMPNF indicate that the project will generate lower GHG emissions than a conventional building built to current (non-Stretch) code. It cites material selection, construction techniques, commitments to purchasing Green-e certified electricity and other measures as the means to obtaining a LEED Gold rating, Harvard’s campus standard for new construction. LEED Gold requires between 60-79 points. The current LEED checklist shows the following:

- 59 credits in the high achievability category;
- 15 in the medium achievability category;
- 19 in the low achievability category; and
- 17 in the not achievable category.

This department applauds Harvard for the Indoor Environmental Quality (IEQ) and Energy and Atmosphere (EA) credits it has selected. EA 1, Optimize Energy Performance, a reduction in building energy costs by 30 percent, EA 3, Enhanced Commissioning, EA 4, Enhanced Refrigeration Management and EA 6, Green Power are well-chosen. As they are two of the most effective measures for reducing GHG and, consequently, meeting Mayor Menino’s goals for Boston, we encourage re-evaluation of: EA Credit 5, Measurement and Verification as a means to ensure that energy-conserving investments are providing the expected benefits in the short and long term and EA 2; On-Site Renewable Energy, which works hand-in-hand with green power to reduce acid rain, smog and climate change.

We look forward to the next iteration of the checklist and to the description of the ways in which credits will be achieved.

Although no regulatory limits have yet been set on Ultra Fine Particulates (UFP), their effect on human health is not at issue. The project systems should be designed to allow for minimum pathways to exposure for this building and those within its sphere. Some effective measures are the installation of state-of-the art air conditioning and filtration systems effective in trapping UFP (along with measures to maintain these systems), locating air intakes as far as possible from sources of pollutants and vents in areas that will not affect pedestrians and are far from other buildings' intakes.

It is difficult to determine the location of existing pedestrian pathways and those planned for the project. We ask that the DPIR include photographs of existing conditions in the Executive Education area.
(landscape and view corridors), an aerial rendering that shows existing pedestrian paths, an aerial rendering of pathways at project completion and a landscape plan.

We note that Grow Boston Greener (GBG), a collaborative effort of the City of Boston and its partners in Boston’s Urban Forest Coalition (BUFC), is working to increase the urban tree canopy cover in the city by planting 100,000 trees by 2020. The planting of these trees will increase Boston’s tree canopy cover from 29% to 35% by 2030 as the planted trees mature and will help to mitigate the urban heat island effect, reduce energy consumption through the appropriate placement of trees, improve air quality and improve storm water management through strategic planting. This department strongly supports tree planting, to the greatest extent possible, as part of all projects. Please evaluate species with consideration of the Asian Longhorned Beetle situation. The following resources are useful:

- ALB Information from the MA Department of Conservation and Recreation  
  http://www.mass.gov/dcr/
- ALB Information from the MA Department of Agricultural Resources  
  http://www.mass.gov/agr/alb.htm
- ALB Information from USDA’s Animal and Plant Health Inspection Service  
- ALB Information from U.S. Forest Service  
  http://na.fs.fed.us/fhp/alb/

We ask that Harvard help to educate the public and further improve the water quality of local water bodies by agreeing to the permanent installation of plaques that bear the warning “Don’t Dump - Drains to Charles River.” The plaques are best installed adjacent to all existing, modified and new catch basins. Information on the casting can be obtained from the Operations Division of the BWSC (617-989-7000).

As part of Mayor Menino’s multi-faceted plan, Boston has been exploring the use of Light Emitting Diodes (LED) lighting for public spaces, sidewalks and roadways through the installation of demonstration projects and is beginning to install LED streetlights in several neighborhoods. Some benefits of LED lighting are:

- LED street lights cost significantly less to operate and cut energy use and carbon emissions. (The high efficiency has the potential to offer 50 to 80 percent energy savings.)
- LED fixtures can be "aimed" to minimize light trespass and light pollution.
- LEDs can produce enhanced visibility with better color rending (colors seem more natural). They offer whiter light in a range of color temperatures with a higher color rendering index for enhanced visibility.
- There are a growing number of vendors of quality LED street and general lighting which is helping to drive costs down and is addressing the full range of applications.
- LEDs offer long life and high reliability. Quality street lights can last 10 years or more depending upon usage and can therefore offer significant reduction in maintenance costs compared with traditional lights sources that require replacement every 2-3 years.
- Light from each LED can be guided with secondary optics to provide far more even illumination using lower light levels than traditional lighting sources. Traditional light sources typically over light the area directly under the pole to ensure that the outer areas surrounding the pole are well lit
- LED fixtures are designed to spread the light more evenly eliminating the need for overlighting.

We request that Harvard evaluate the use of LEDs for exterior and appropriate interior uses at the project.
Regular vacuum sweeper cleaning of streets and sidewalks in the project area should be employed to ensure that they remain free of dust and debris. The use of a vacuum cleaner is an important measure for preventing construction-related dust and debris from being transported by air or deposited in storm drains. Other measures to minimize the spread of dust and debris should include one to two inches of gravel no less than ten (10) feet in length at truck entrances and egresses and a wheel wash, with proper provisions for runoff.

According to the Massachusetts Department of Environmental Protection (DEP), about 33 percent of mobile source particulate matter (PM) and ten percent of all nitrogen oxide (NO\textsubscript{x}) pollution in the northeast is caused by construction vehicles. More than 90 percent of diesel engine particulate emissions are highly respirable and carry toxins deep into the lung, exacerbating human respiratory ailments. The U. S. Environmental Protection Agency (EPA) has proposed classification of diesel exhaust as "highly likely to be carcinogenic in humans." It estimates that diesel engines currently on the road can run for 1,000,000 miles and remain in operation for as long as 20 to 30 years. This amounts to 160 to 240 tons of pollution over the life of each engine.

Beginning with model year 2007, on-road diesel vehicles are required to comply with strict EPA emissions requirements. Standards for new engines in non-road equipment will be phased in starting with the smallest engines in 2008 until all but the very largest diesel engines meet both NOx and PM standards in 2014. Some of the largest engines, 750+ horsepower, will have one additional year to meet the emissions standards.

The use of flow-through filters and diesel particulate filters on pre-2007 diesel vehicles can reduce air quality degradation caused by emissions of carbon monoxide (CO), volatile organic compounds (VOC), NO\textsubscript{x} and air toxins generated by heavy-duty equipment. Oxidation catalysts and catalyzed particulate filters reduce toxic emissions of formaldehyde, benzene, acrolein and 1-3 butadiene by as much as 70 percent, decrease localized adverse impacts and reduce dust and odor complaints from project abutters and regulatory agencies. We ask that all pre-2007 diesel construction vehicles working on the project be retrofitted using retrofit technologies approved by the United States Environmental Protection Agency (EPA) and that contractors be required to use ultra low-sulfur diesel (ULSD) fuel (15 ppm), in all off-road construction equipment.

Some excess building materials may be suitable for donation to the Building Materials Resource Center (100 Terrace Street, Roxbury, 02120, 617-442-8917). This non-profit center offers new and used materials for low and middle income homeowners. We request that Harvard consider donations to the BMRC.

Thank you for the opportunity to offer comment. We look forward to the DPIR.

Sincerely,

Bryan Glascock
Commissioner

cc: Ellen Lipsey, Executive Director, Boston Landmarks Commission
DATE:       June 27, 2011

RE:         Harvard University, Tata Hall
            IMPNF / PNF
            BRA

As Disability Commissioner for the City of Boston, I would like to offer my comments on potential accessibility issues in the project referenced above.

I found the IMPNF / PNF report very disappointing, as the topic of “Transportation and Access” did not include any details about access and inclusion for people with disabilities – it focused solely on modes of transportation. In fact, there is absolutely no mention of inclusion of people with disabilities or accessibility features in this report at all.

In order for my Commission to give its full support to this project, I would ask that the following accessibility issues be explained in detail with narrative and data:

- Inclusion of people with disabilities as a general priority of this project
- Number and location of accessible units – including details about varying numbers of bedrooms
- Common space access, including conference rooms and classrooms with fixed seating
- Accessible entries
- Outdoor access, including the proposed tunnel
- HP Parking spaces, if any – number and location
- Sidewalk and curb cut details
- Slopes and surface materials

I understand if you haven’t reached this level of detail for some of these issues yet, but the majority of them should have been thought out by this point. Accessibility features need to be thought through at the beginning of these projects rather than in the middle or at the end. We need to strive to make access more than just “meeting the requirements” of code; it should be a major highlight of this project.
General Statement on Access:

The Boston Commission for Persons with Disabilities (the Commission) supports barrier-free design and construction in all projects that are located within the city of Boston, including building renovations as well as new structures. Inclusive access is a priority of the Commission in all places that are open to the public, including: municipal buildings, multi-unit housing developments, parks, open spaces, public rights of way, sidewalks, restaurants, museums, businesses, and other places of public accommodation.

The Commission works with City of Boston departments, private developers, civil engineers, architects and building contractors to ensure compliance with local, state, and federal regulations, including the Boston Zoning Codes, Massachusetts Architectural Access Board Regulations (MAAB, 521 CMR) and the Americans with Disabilities Act Accessibility Guidelines (ADAAG, 28 CFR Parts 35, 36, 37). It is a violation of these regulations to design or construct projects that are non-compliant with accessibility and usability requirements unless it can be conclusively demonstrated that it is structurally impractical to meet these requirements.

Priorities for inclusive access other than design and construction include barrier removal that is readily achievable in existing buildings, maintenance of accessible features, way-finding and signage. The Commission supports the use of poured concrete over brick and other paving materials in all new sidewalks and pedestrian ramps (curb cuts) along the accessible route of travel, and expects that the accessible route of travel will be maintained throughout construction utilizing compliant barricades.

The Commission is available to assist with training, technical assistance, and design review to help achieve accessibility compliance, and to ensure that all buildings, sidewalks, parks, and open spaces are usable and welcoming to all of Boston's diverse residents, including those with physical, sensory, intellectual, and communication disabilities.

For further comments or discussion, please contact me directly.

Thank You.

Kristen McCosh

Kristen McCosh, Commissioner
Boston Commission for Persons with Disabilities
kristen.mccosh@cityofboston.gov
617-635-2522
APPENDIX 2
COMMENTS FROM THE PUBLIC
Mr. Glavin,

On behalf of the residents I represent from Allston/Brighton, we fully endorse the Fourth Amendment to the Harvard University Allston Campus Institutional Master Plan to construct TaTa Hall.

The construction of TaTa Hall will generate good jobs for local people and opportunities for apprenticeship applicants as well.

I urge the Boston Redevelopment Authority to approve the Amendment so we can get back to work and provide for our families as soon as possible.

Sincerely,
Tom Puglia
Business Representative
Carpenters Local 40
Mr. Michael Glavin  
Boston Redevelopment Authority  
City Hall, Boston, MA  

RE: Harvard University Tata Hall  

Mr. Glavin,

We are writing to provide comments on the Project Notification Form and Institutional Master Plan Amendment for Harvard University’s Proposed Tata Hall.

The project is a great opportunity for Harvard University and the City of Boston to continue their leadership in promoting transportation by foot and bicycle. Recent improvements to North Harvard Street and Western Ave have been of great benefit to local residents and regional commuters.

Tata Hall will be built only yards away from the Charles River, and the current infrastructure unfortunately prevents bicyclists and people with disabilities from accessing the river. We hope you will join us in supporting improvements to improve this access as part of the "community benefits" component of your giving approval for Tata Hall.

Specifically, we would like to suggest renovations to or, if necessary, reconstruction of the pedestrian overpass that crosses Soldiers Field Road from the Tata Hall site. Adding ADA-compliant ramps to this structure would be a great improvement to the public realm, improve access, and be consistent with the transportation goals of the City and University.

In addition, while we understand that making the Weeks Bridge fully ADA compliant is a complicated task it should still be possible – without triggering the need for a complete reconstruction – to add metal ramps on the side of the steps, similar to those used in many European cities, that would allow helpers to push up wheelchairs and cyclists to roll up their bikes.

Sincerely,

Steven E. Miller          Harry Mittison          Renata von Tscharner  
LivableStreets Alliance   AB North Neighborhood Forum  Charles River Conservancy  

Wendy Landman  
WalkBoston
June 16, 2011

Michael F. Glavin
Deputy Director for Institutional Development
Boston Redevelopment Authority
Boston City Hall
Boston, MA 02201

Re: Comments on Harvard University’s Tata Hall

I am concerned that the process for BRA approval and the pressure on the city to create jobs is favoring Harvard University at the expense the community. The Allston community was assured that a discussion of community benefits would be associated with, proportional and directly related to every new construction proposal. It appears that many of the hearings and approval steps are completed prior to negotiations over benefits. This strongly tilts the negotiation process to the advantage of the developer who, in the case of Harvard, has been less than willing or forthcoming in discussing community benefits. I am hopeful that a reasonable package of benefits is taken into consideration prior to the approval of the project and that it be sustainable and long term, like Library Park, as opposed to short term financial payments that are here and gone. Tata Hall’s use is measured in decades while short term financial packages are valueless within a couple of years.

Harvard’s proposed building is structured such that its largest and most imposing face is towards the river while it declines as it transitions back towards the campus. It continues the walled in feel of one of our city’s most valued resources, the Charles River. It benefits no one except those wealthy executives who will be living in this hall for short periods of time and would like accommodations with a lovely river view. One assumes the charges for those accommodations will be quite steep. This is, however, counter to all esthetic considerations normally imposed by setbacks and design which encourage a less imposing feel to the areas used by residents, visitors and tourists who unquestionably would prefer a less fortress like feel. It would sound only reasonable in the interests of the great plurality of people that Harvard be asked to scale down the building facing the river and scale up the rear. They would not sacrifice any square footage.
Both the photographs and the scale models of this development present a far different feel than the reality of today. If one looks closely at these there is a remarkably divergent visual appeal to these models and photographs in which all of the walls and fences have disappeared. Some of those walls stand almost eight feet tall. In fact, Harvard's campus when viewed from Storrow Drive presents an imposing, unwelcoming, closed off, walled in face to the river. Rather than the welcoming open vision in their presentation it is more akin to a walled off community in Florida. In fact, over the last few years, new walls have been constructed. Through their presentations of openness and staggered plantings, Harvard acknowledges the current ugliness of their actual face to the community. As part of the Tata Hall approval it should be required that Harvard remove these impediments. As Ronald Reagan said to Gorbochev in Berlin, "Mr. Gorbochev, tear down these walls," so should Boston, its residents and its visitors say to Harvard "Tear down your walls." Harvard themselves acknowledged they're ugly through their presentations.

Sincerely,

Bruce E. Houghton
President
June 20, 2011

Mr. Michael Glavin
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

RE: Harvard University Tata Hall

Dear Mr. Glavin,

The Charles River Conservancy (CRC) appreciates the opportunity to provide comments on the Project Notification Form and Institutional Master Plan Amendment for Harvard University’s Proposed Tata Hall. We are happy to see a new building near the Charles River and more students, faculty and staff benefiting from this great asset.

The CRC cosigned a previously submitted letter with Livable Streets Alliance, AB North Neighborhood Forum and WalkBoston regarding the two Weeks Bridges and corresponding community benefits for non-motorized access across and along the Charles.

Tata Hall’s students, faculty and staff will be frequent users of the bridges up and down the Charles from the Weeks Bridge. The CRC has installed architectural lighting to the Anderson, Weeks, Western Avenue and River Street bridges. The maintenance and upgrade of the architectural façade and under arch lights should be the responsibility of Harvard University. Those lights add beauty, drama, and a romantic air to the bridges at night.

Harvard Business School’s students, faculty and staff will also be major beneficiaries of the underpasses that the CRC is advocating for as part of MassDOT’s plans to renovate the Anderson, Western Avenue and River Street bridges. The maintenance of these underpasses should be the responsibility of Harvard University, just as Harvard maintains the John F. Kennedy Park.
Tata Hall is an exciting undertaking for Harvard, and presents a great opportunity for the university to help enhance accessibility along the Charles for affiliates of the university, and for the greater public.

Sincerely,

Renata von Tscharner
Founder and President
Charles River Conservancy

Cc
Senator Sal Di Domenico
Senator Steven Tolman
Representative Kevin Honan
Representative Michael Moran
Boston City Councilor Mark Ciommo
Secretary Jeffrey Mullan, MassDOT
Gabriel Handel, Harvard Business School
Harry Mattison, AB North Neighborhood Forum
Paul Berkeley, Allston Brighton Civic Association
Charles Vasiliades, Boston Landmarks Commission
Re: Tata Hall

Dear Mr. Galvin:

Charles River Watershed Association (CRWA) has reviewed the Institutional Master Plan Notification Form / Project Notification Form (IMPNF / IMP) for the Fourth Amendment to the Harvard University Allston Campus IMP for the above mentioned project submitted by Harvard University (Harvard) and offers the following comments to assist the Boston Redevelopment Authority (BRA) with the project review.

The fact that this project is being proposed under an amendment to the IMP submitted by Harvard in 1997 is problematic to start with. Not only has Harvard’s vision for its IMP evolved considerably from what it was in 1997, the City and the neighborhood residents, amongst other stakeholders, have also since undertaken several years of comprehensive planning that has embraced more system-wide thinking for the development of North Allston. We therefore urge Harvard and the BRA to ensure that this project encompasses the overarching goals for public access and environmental sustainability established by the larger planning framework and goes beyond the site specific scope for its infrastructure design.

As shown in Fig.1, a concept sketch developed by CRWA in 2007 as part of its master plan recommendations to Harvard (http://www.crwa.org/projects/ESUD/AllstonScienceHandout.pdf), the site for Tata Hall, by virtue of its location, is critical not only for providing improved public access through the campus to the River but also for improving the health of the River itself. Given the exacerbated flooding occurring in the neighborhood, following even minor rain events and poor water quality in the River in close proximity to the outfall draining the site, the design of the site should take into consideration the entire engineered sub-watershed. In addition to exploring opportunities for off-line stormwater treatment and storage via a constructed wetland system, as part of the site landscape design and engineering, a variety of green infrastructure retrofits need to be incorporated in the design of the Project to address stormwater runoff quality, quantity and peak flow attenuation. At a minimum the project should comply with the Total Maximum Daily Load (TMDL) for Nutrients in the Lower Charles River Basin and Pathogen TMDL for the Charles River Watershed. It is therefore critical that stormwater management design for the project be undertaken at the sub-watershed level and the calculations...
accompanying the design be documented explicitly in the Draft Project Impact Report (DPIR).

As part of making a successful greenway connection from the neighborhood to the Charles River and its parklands, such as that shown in Fig. 1, Harvard should improve access to and the condition of the parkland adjoining the River and the existing River crossings at the Weeks footbridge and Western Avenue. River and park access has been consistently identified as a high priority for the neighborhood, and has appeared as a regional need in various park and regional Master Plans. These improvements should be a part of mitigating the impacts of building on this last remaining piece of open space on this section of the River. In addition to the above, the height and the massing of Tata Hall need to be articulated so as to prevent the gradual “canyonization” of the River occurring with buildings like One Western Ave.

Finally, given the renewed activity in both development and planning underway, the Chair and the Co-Chairs of the Harvard Allston Citizens Advisory Committee (CAC) have requested that Secretary Sullivan re-convene the CAC. A copy of their letter is attached. CRWA hopes that the BRA will coordinate closely with the MEPA office as it scopes the DPIR for Tata Hall.
We appreciate the opportunity to comment on this Project through the Article 80 review process and look forward to working with the BRA and Harvard as the planning and design evolve. Please feel free to contact me if you have any questions.

Sincerely,

Pallavi Kalia Mande
Urban Restoration Specialist

Encl.

cc: Will Donham, Harvard University
Edward M. Lambert Jr., Department of Conservation and Recreation
Harvard Allston Task Force
June 17, 2011

Richard K. Sullivan, Jr., Secretary  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston MA 02114

Dear Secretary Sullivan,

As the Chair and Co-Chairs of the Harvard Allston Citizens Advisory Committee (CAC), established in September, 2007, under the Special Review Procedure (SRP) for Harvard University's Allston Campus 20-Year Master Plan, we are writing to ask that the CAC be convened for a meeting.

After Harvard University’s abrupt halt of development and planning in North Allston in 2009, the CAC took a voluntary hiatus, and agreed not to meet until there was more information available about Harvard’s plans and process. We have not met again since that time. In the interim, Harvard has undertaken some modest work and planning in Allston, and continues to meet with the Harvard Allston Task Force appointed by Mayor Menino to assist the City in review and planning for campus projects.

Because there is now renewed activity in both development and planning underway for Harvard’s Allston campus, we believe it is appropriate for the CAC to reconvene. Harvard has stated its intention to file an updated Institutional Master Plan (IMP) in 2012, and it is proposing at least one new building in Allston, the Tata Building. In addition, the Harvard Study Group is due to release its Report on the Allston Campus this week, which will provide a guide for Harvard’s planning and development in North Allston.

As stated in the Certificate Establishing a Special Review Procedure, dated September 14, 2007, the Secretary’s expectation was that Harvard’s IMP would include “all projects proposed over the next twenty years.” In addition, Harvard was to file Interim Updates every three years, the first of which would have been due in December, 2010. Additionally, the Certificate specified that the CAC was to meet at least three times per year.

We appreciate that Harvard’s timeline and redevelopment plans have changed significantly, but given the amount of time that has passed since our last CAC meeting, and the new planning and development underway by Harvard, we feel it is time for the CAC to reconvene. Among other things, this will enable us to ascertain that individual members are still able to participate in the review process moving forward, and to receive an update from Harvard that will help us understand and prepare for upcoming development activity and long term master planning.
Thank you for your support of the Harvard Allston CAC, and we look forward to hearing from you. Please do not hesitate to contact us if you have questions.

Sincerely,

[Signature]

Cathi Campbell, Harvard Allston Task Force, Chair

[Signature]

Marc Draisen, Metropolitan Area Planning Council, Co-Chair

[Signature]

Kate Bowditch, Charles River Watershed Association, Co-Chair

cc: Alicia McDevitt, Deputy Commissioner, Massachusetts DEP
    Maeve Valley-Bartlett, Interim Director, MEPA
    Holly Johnson, MEPA Analyst
## LEED 2009 for New Construction
### Harvard Business School Tata Hall

**Achievability** 70 19 16 5

### Projected Points: 76

#### Prerequisites

<table>
<thead>
<tr>
<th>Prerequisite</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS Prereq 1</td>
<td>Construction Activity Pollution Prevention</td>
</tr>
<tr>
<td>WE Prereq 1</td>
<td>Water Use Reduction: 20%</td>
</tr>
<tr>
<td>EA Prereq 1</td>
<td>Fundamental Commissioning of Building Energy Systems</td>
</tr>
<tr>
<td></td>
<td>Minimum Performance</td>
</tr>
<tr>
<td>EA Prereq 4</td>
<td>Alternative Transportation: Public Transportation Access</td>
</tr>
<tr>
<td>IEQ Prereq 1</td>
<td>Environmental Tobacco Smoke (ETS) Control</td>
</tr>
<tr>
<td>IEQ Prereq 2</td>
<td>Minimum IAQ Performance</td>
</tr>
<tr>
<td>IEQ Prereq 3</td>
<td>Fundamental Refrergiant Management</td>
</tr>
<tr>
<td>IEQ Prereq 4</td>
<td>Storage &amp; Collection of Recyclables</td>
</tr>
</tbody>
</table>

**Achievability rating:** High = 90%, Med = 50%, Low = 10%, NP = not possible.

#### Sustainable Sites

<table>
<thead>
<tr>
<th>Credit</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS Credit 1</td>
<td>Site Selection</td>
</tr>
<tr>
<td>SS Credit 2</td>
<td>Development Density and Community Connectivity</td>
</tr>
<tr>
<td>SS Credit 3</td>
<td>Brownfield Redevelopment</td>
</tr>
<tr>
<td>SS Credit 4</td>
<td>Alternative Transportation: Bicycle Storage &amp; Changing Rooms</td>
</tr>
<tr>
<td>SS Credit 5</td>
<td>Minimum IAQ Performance</td>
</tr>
<tr>
<td>SS Credit 6</td>
<td>Site Development: Low-Emitting and Fuel-Efficient Vehicles</td>
</tr>
<tr>
<td>SS Credit 7</td>
<td>Site Development: Parking Capacity</td>
</tr>
<tr>
<td>SS Credit 8</td>
<td>Site Development: Protect or Restore Habitat</td>
</tr>
<tr>
<td>SS Credit 9</td>
<td>Site Development: Maximize Open Space</td>
</tr>
<tr>
<td>SS Credit 10</td>
<td>Stormwater Design: Quantity Control</td>
</tr>
<tr>
<td>SS Credit 11</td>
<td>Stormwater Design: Quality Control</td>
</tr>
<tr>
<td>SS Credit 12</td>
<td>Stormwater Design: Quantity Control</td>
</tr>
<tr>
<td>SS Credit 13</td>
<td>Stormwater Design: Quantity Control</td>
</tr>
<tr>
<td>SS Credit 14</td>
<td>Light Pollution Reduction</td>
</tr>
</tbody>
</table>

#### Water Efficiency

<table>
<thead>
<tr>
<th>Credit</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE Credit 1</td>
<td>Water Efficient Landscaping: 50% Reduction</td>
</tr>
<tr>
<td>WE Credit 2</td>
<td>Water Efficient Landscaping: No Potable Water</td>
</tr>
<tr>
<td>WE Credit 3</td>
<td>Innovative Wastewater Technologies</td>
</tr>
<tr>
<td>WE Credit 4</td>
<td>Water Use Reduction: 30% / 35% / 40%</td>
</tr>
</tbody>
</table>

#### Energy & Atmosphere

<table>
<thead>
<tr>
<th>Credit</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA Credit 1</td>
<td>Optimize Energy Performance: 12% / 14% / 16%</td>
</tr>
<tr>
<td>EA Credit 2</td>
<td>Optimize Energy Performance: 18% / 20% / 22%</td>
</tr>
<tr>
<td>EA Credit 3</td>
<td>Optimize Energy Performance: 24% / 26% / 28%</td>
</tr>
<tr>
<td>EA Credit 4</td>
<td>Optimize Energy Performance: 30% / 32% / 34%</td>
</tr>
<tr>
<td>EA Credit 5</td>
<td>Optimize Energy Performance: 36% / 38% / 40%</td>
</tr>
<tr>
<td>EA Credit 6</td>
<td>Optimize Energy Performance: 42% / 44% / 46% / 48%</td>
</tr>
<tr>
<td>EA Credit 7</td>
<td>Optimize Energy Performance: 5% / 7% / 9% / 11% / 13%</td>
</tr>
<tr>
<td>EA Credit 8</td>
<td>Enhanced Commissioning</td>
</tr>
<tr>
<td>EA Credit 9</td>
<td>Measurement &amp; Verification</td>
</tr>
</tbody>
</table>

**Achievability rating:** Gold = 80 to 89 points, Silver = 60 to 79 points, Certified = 40 to 59 points.
## LEED 2009 for New Construction

Harvard Business School Tata Hall

### Achievability

<table>
<thead>
<tr>
<th>Hi</th>
<th>Med</th>
<th>Low</th>
<th>NP</th>
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</thead>
<tbody>
<tr>
<td>70</td>
<td>19</td>
<td>5</td>
<td>76</td>
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</tbody>
</table>

### Materials & Resources

<table>
<thead>
<tr>
<th>5</th>
<th>3</th>
<th>1</th>
<th>0</th>
<th>76</th>
<th>Projected Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR Credit 1.1 Building Reuse: Maintain Existing Walls, Floors, &amp; Roof, 55% / 75% / 95%</td>
<td>Maintain existing structure and envelope for 55% / 75% / 95% of the existing building.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>MR Credit 1.2 Building Reuse: Maintain Existing Interior Nonstructural Elements, 50%</td>
<td>Use existing interior nonstructural elements in at least 50% of the completed building.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MR Credit 2 Construction Waste Management: 50% / 75%</td>
<td>Creates a construction waste management plan and recycle and/or salvage construction waste.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>MR Credit 3 Materials Reuse: 5% / 10%</td>
<td>Use salvaged, refurbished, or reused materials for 5% / 10% of construction materials, calculated by cost.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>MR Credit 4 Recycled Content: 10% / 20% (post-consumer + 1/2 pre-consumer)</td>
<td>Use materials or products with recycled content for 10% / 20% of construction materials, calculated by cost.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MR Credit 5 Regional Materials: 10% / 20%</td>
<td>Use materials extracted and manufactured within 500 miles for 10% / 20% of construction materials, calculated by cost.</td>
<td></td>
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</tr>
<tr>
<td>MR Credit 6 Rapidly Renewable Materials</td>
<td>Use rapidly renewable materials for 2.5% of construction materials, calculated by cost.</td>
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</tr>
<tr>
<td>MR Credit 7 Certified Wood</td>
<td>Use FSC-certified wood for 5% of wood-based materials, calculated by cost.</td>
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</tr>
</tbody>
</table>

### Indoor Environmental Quality

<table>
<thead>
<tr>
<th>12</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>12</th>
<th>Projected Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEQ Credit 1 Outdoor Air Delivery Monitoring</td>
<td>Install monitoring of outdoor air on ventilation systems and monitor CO2 concentrations.</td>
<td></td>
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</tr>
<tr>
<td>IEQ Credit 2 Increased Ventilation</td>
<td>Increase ventilation rates by 30% above ASHRAE 62.1-2007.</td>
<td></td>
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</tr>
<tr>
<td>IEQ Credit 3.1 Construction IAQ Management Plan: During Construction</td>
<td>Develop an IAQ plan that meets SMACNA IAQ Guidelines for Occupied Buildings Under Construction.</td>
<td></td>
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</tr>
<tr>
<td>IEQ Credit 3.2 Construction IAQ Management Plan: Before Occupancy</td>
<td>Provide air quality testing or building flush-out prior to occupancy.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>IEQ Credit 4.1 Low-Emitting Materials: Adhesives &amp; Sealants</td>
<td>Use adhesives and sealants that comply with the SCAQMD Rule #1168.</td>
<td></td>
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<tr>
<td>IEQ Credit 4.2 Low-Emitting Materials: Paints &amp; Coatings</td>
<td>Use products with VOC levels specified in Green Seal Standard GS-11 and GC-03, and SCAQMD Rule 1113.</td>
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<tr>
<td>IEQ Credit 4.3 Low-Emitting Materials: Flooring Systems</td>
<td>Use carpet that meets the CRI Green Label requirements and FloorScore compliant hard surface flooring.</td>
<td></td>
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</tr>
<tr>
<td>IEQ Credit 4.4 Low-Emitting Materials: Composite Wood &amp; Agrifiber Products</td>
<td>Use materials with no added urea-formaldehyde resins or adhesives.</td>
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</tr>
<tr>
<td>IEQ Credit 5 Indoor Chemical &amp; Pollutant Source Control</td>
<td>Floor grates at doors, MERV 13 filters, and exhausts and hazardous liquid container in chemical use areas.</td>
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</tr>
<tr>
<td>IEQ Credit 6.1 Controllability of Systems: Lighting</td>
<td>Provide lighting controls for 90% of individuals AND 100% of group lighting controls.</td>
<td></td>
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</tr>
<tr>
<td>IEQ Credit 6.2 Controllability of Systems: Thermal Comfort</td>
<td>Provide comfort controls or operable windows for 50% of individuals AND 100% of group spaces. Meet ASHRAE 55-2004, Thermal Comfort Conditions for Human Occupancy. Meet IEQc7.1, provide permanent monitoring system, and perform a thermal comfort survey after occupancy.</td>
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</tr>
<tr>
<td>IEQ Credit 7.1 Thermal Comfort: Design</td>
<td>Meet prescriptive requirements, or achieve 25 footcandles, in 75% of regularly occupied spaces.</td>
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</tr>
<tr>
<td>IEQ Credit 7.2 Thermal Comfort: Verification</td>
<td>Meet prescriptive requirements, or achieve 25 footcandles, in 75% of regularly occupied spaces.</td>
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</tr>
<tr>
<td>IEQ Credit 8.1 Daylight &amp; Views: Daylight</td>
<td>Provide direct views to the outside in 90% of regularly occupied spaces.</td>
<td></td>
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</tr>
<tr>
<td>IEQ Credit 8.2 Daylight &amp; Views: Views</td>
<td>Provide direct views to the outside in 90% of regularly occupied spaces.</td>
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<td></td>
</tr>
</tbody>
</table>

### Innovation in Design

<table>
<thead>
<tr>
<th>6</th>
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<th>0</th>
<th>0</th>
<th>6</th>
<th>Projected Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID Credit 1.1 Innovation in Design, Green Housekeeping</td>
<td>Pending USGBC judgment.</td>
<td></td>
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</tr>
<tr>
<td>ID Credit 1.2 Innovation in Design, Green Building Education</td>
<td>Pending USGBC judgment.</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>ID Credit 1.3 Innovation in Design, Exceed MRC 5 with 30% regional materials</td>
<td>Pending USGBC judgment.</td>
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</tr>
<tr>
<td>ID Credit 1.4 Innovation in Design, Exceed SS&amp;4-1 Public Transportation</td>
<td>Pending USGBC judgment.</td>
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</tr>
<tr>
<td>ID Credit 1.5 Innovation in Design, LEED Pilot Credit?</td>
<td>Pending USGBC judgment.</td>
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</tr>
<tr>
<td>ID Credit 2 LEED™ Accredited Professional</td>
<td>LEED accredited professional on design team.</td>
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</tbody>
</table>

### Regional Priority

<table>
<thead>
<tr>
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<th>2</th>
<th>0</th>
<th>1</th>
<th>Regional Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP Credit 1.1 On-Site Renewable Energy: 1%</td>
<td>Pending USGBC judgment.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>RP Credit 1.2 Stormwater Design: Quantity Control</td>
<td>Pending USGBC judgment.</td>
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<td></td>
</tr>
<tr>
<td>RP Credit 2 Heat Island Effect: Non-Roof</td>
<td>Pending USGBC judgment.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>RP Credit 2 Heat Island Effect: Roof</td>
<td>Pending USGBC judgment.</td>
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</tr>
</tbody>
</table>
NOTE: Parapet height equal to height of elevator overrides and intakes.
The tunnel is used to transport trash and recycling out of building, as well as for public circulation between buildings.