Institutional Master Plan Notification Form
Project Notification Form

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

Tata Hall

Submitted to:
BOSTON REDEVELOPMENT AUTHORITY
One City Hall Square
Boston, MA 02210

Submitted by:
HARVARD UNIVERSITY
Holyoke Center, Suite #900
1350 Massachusetts Avenue
Cambridge, MA 02138

MAY 2011
Institutional Master Plan Notification Form/Project Notification Form

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

Tata Hall

Submitted to:
Boston Redevelopment Authority

Submitted by:
Harvard University

In conjunction with:
William Rawn Associates
and
Bond Brothers
Epsilon Associates Inc.
Goulston & Storrs
Vanasse Hangen Brustein Inc.

May 2011
# Table of Contents

1.0 Introduction ....................................................................................................................................... 1
2.0 Status of the Harvard Allston Institutional Master Plan ................................................................. 1
3.0 Harvard University Mission and Objectives ..................................................................................... 2
    3.1 Harvard College .......................................................................................................................... 2
    3.2 The Allston Campus – Summary of Existing Conditions ............................................................ 5
    3.3 Harvard Business School Mission and Objectives ...................................................................... 5
    3.4 Harvard Business School Executive Education Program .......................................................... 5
4.0 Description of the Proposed Institutional Project ............................................................................. 6
    4.1 Program Need ............................................................................................................................ 6
    4.2 Existing Project Site .................................................................................................................... 7
    4.3 Building Program ....................................................................................................................... 7
    4.3 Project Graphics ......................................................................................................................... 8
    4.4 Project Dimensions .................................................................................................................... 11
    4.5 Project Landscaping .................................................................................................................. 11
    4.6 Project Schedule ......................................................................................................................... 11
    4.7 Relationship to Existing Zoning .............................................................................................. 12
5.0 Anticipated Impacts ........................................................................................................................... 12
    5.1 Transportation and Access ......................................................................................................... 12
    5.2 Wind .......................................................................................................................................... 13
    5.3 Shadow .................................................................................................................................... 13
    5.4 Daylight .................................................................................................................................... 13
    5.5 Solar Glare ................................................................................................................................ 13
    5.6 Air Quality ................................................................................................................................ 13
    5.7 Flood Hazards and Wetlands ...................................................................................................... 14
    5.8 Groundwater and Geotechnical Impacts .................................................................................... 14
    5.9 Solid and Hazardous Waste ....................................................................................................... 14
    5.10 Noise Impacts .......................................................................................................................... 14
    5.11 Construction Logistics ............................................................................................................. 15
    5.12 Rodent Control .......................................................................................................................... 15
    5.13 Wildlife Habitat ........................................................................................................................ 15
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.14 Project Sustainability</td>
<td>16</td>
</tr>
<tr>
<td>5.15 Urban Design</td>
<td>16</td>
</tr>
<tr>
<td>5.16 Historic Resources</td>
<td>21</td>
</tr>
<tr>
<td>5.17 Infrastructure (Water, Sewer, Stormwater)</td>
<td>22</td>
</tr>
<tr>
<td>5.17.1 Wastewater</td>
<td>22</td>
</tr>
<tr>
<td>5.17.2 Domestic Water and Fire Protection</td>
<td>23</td>
</tr>
<tr>
<td>5.17.3 Stormwater Management</td>
<td>23</td>
</tr>
<tr>
<td>5.17.4 Heating and Cooling</td>
<td>24</td>
</tr>
<tr>
<td>5.17.5 Electrical Service Normal Power</td>
<td>24</td>
</tr>
<tr>
<td>5.17.6 Emergency Power Distribution Systems</td>
<td>25</td>
</tr>
<tr>
<td>5.17.7 Fire Alarm System</td>
<td>25</td>
</tr>
</tbody>
</table>

# List of Figures

- **Figure 1:** Existing IMP Area
- **Figure 2:** Figure from 1997 IMP Showing ExEd Project
- **Figure 3:** Site Plan
- **Figure 4:** Aerial Rendering
- **Figure 5:** Urban Concept: Welcoming Curve
- **Figure 6:** Urban Concept: Continuing Harvard Way Axis
- **Figure 7:** Urban Concept: New Green Spaces
- **Figure 8:** Site Section Diagram

# Appendix A: Figures

# Appendix B: Preliminary LEED Checklist
1.0 Introduction

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

This IMPNF/PNF considers one project: the construction of Tata Hall, a proposed Executive Education building (the “Project”) of approximately 150,000 gross square feet with approximately 180 beds. This IMPNF/PNF does not propose to 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 mentioned in the University’s 1997 IMP, described below.

This IMPNF/PNF filing is intended to start the formal review of the Project under Article 80. Following the public comment period, the BRA will issue a Scoping Determination outlining issues to be addressed in more detail in an IMP Amendment/Draft Project Impact Report (“DPIR”) filing.

To date, the Project has been discussed at meetings of the Harvard-Allston Task Force and City agencies. The University looks forward to continuing these discussions as the Project evolves.

2.0 Status of the Harvard Allston Institutional Master Plan

Harvard has been filing Institutional Master Plans for its Allston campus since 1989. The most recent fully approved IMP dates to 1997\(^1\) 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. As mentioned, an Executive Education housing project in the approximate location of the proposed Tata Hall was first mentioned 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.

---

\(^{1}\) 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.
The 2007 IMP Amendment also extended the term of the renewed IMP for five years, or until 2012.

In January 2007, the University filed an 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.

In response to the global financial downturn and its severely constraining effects, the University has slowed its long-term master planning process and has not yet filed a new IMP. Instead, over the last three years the University’s work in Allston has focused on property stewardship and community engagement; campus planning and greening; and leasing of its properties. In addition, the University has convened a Work Team comprised of University Deans, faculty members and alumni to consider academic priorities and planning assumptions, as well as strategies and opportunities for development in Allston. The Work Team’s deliberations are still underway.

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.

Figure 1 depicts the current IMP Area as well as the location of the proposed Tata Hall, and Figure 2 depicts a figure from the 1997 IMP showing the Executive Education building as it was proposed at that time.

3.0 Harvard University Mission and Objectives

3.1 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.”
FIG. 1: Existing IMP Area

Existing IMP Area (1997 IMP and Subsequent Amendments)

125 Western Avenue
Proposed location for Tata Hall
FIG. 2: Figure from 1997 IMP Showing ExEd Project
3.2 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 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 IMP currently in effect and the subsequently approved amendments, 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 1). The HBS campus encompasses approximately 40 acres of the total IMP area.

This IMPNF/PNF does not propose adding any new land to the IMP Area.

3.3 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. As previously described, 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. Doctoral Programs - Nine full-time programs leading to a PhD or Doctor of Business Administration (“DBA”) degree;
2. 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; and
3. Master of Business Administration (“MBA”) Program - An intensive, two-year residential program leading to an MBA degree.

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

3.4 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 developed in the field are taught to and tested by participants who come to Executive Education programs; new ideas and oftentimes new academic case studies are developed 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 programs enable new academic and curricular research efforts to be undertaken by faculty members thereby enriching the overall academic interactions of the school. These programs lead to curricular innovations in
the MBA and PhD programs, as well as the Executive Education programs, and to new approaches to, and substantive areas of, academic research.

There were approximately 8,700 participants in Executive Education programs in 2010. In addition, approximately 200 faculty members taught in the various programs. During this time, there were 95 Executive Education programs offered. Of these, 75 were Open Enrollment Programs (which are open to individuals sponsored by companies) and focused on a wide range of business topics) and 20 were Custom Programs (targeted to companies that address their specific business needs).

Programs range from two days to fifty-three days, and approximately three quarters of the participants stay for one week or less.

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.

4.0 Description of the Proposed Institutional Project

4.1 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 increase capacity (and meet demand) 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. Beginning in the mid-2000s, HBS has added resources in corporate relations, marketing, and other aspects of program delivery, significantly increasing its ability to attract outstanding participants from leading companies and non-profit organizations from around the world. Demand for HBS executive programs 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 needs 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 curriculum in 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 bring 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; 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 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.

4.2 Existing Project Site

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.

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).

4.3 Building 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 GSF with six to seven stories and roughly 180 bedrooms, the building will also include living group rooms as well as informal gathering spaces for socializing.

- **Bedrooms (approximately 100,000 GSF)** – The philosophy is that 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.
- **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 who 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. There would be 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.

As discussed in more detail in Section 5.1, there will be no new parking associated with the Project. The great majority of Executive Education participants will arrive and depart in taxis.

The building program is shown in Table 1.

<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</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>150,000</strong></td>
</tr>
</tbody>
</table>

* measured in accordance with the Boston Zoning Code

4.3 Project Graphics

The following pages include a number of figures depicting the Project, including a Site Plan (Figure 3) and an Aerial Rendering (Figure 4).

In addition, Section 5.15, Urban Design, includes additional graphics depicting the Project’s urban design goals and Appendix A includes floor plans and a building section.
4.4 Project Dimensions

The Project’s dimensions are presented below in Table 2.

<table>
<thead>
<tr>
<th>Table 2: Project Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Footprint</td>
</tr>
<tr>
<td>Use</td>
</tr>
<tr>
<td>Gross Floor Area</td>
</tr>
<tr>
<td>Square Feet of gross floor area proposed for demolition</td>
</tr>
<tr>
<td>Building Height</td>
</tr>
<tr>
<td>Parking</td>
</tr>
<tr>
<td>Applicable urban renewal plans or LDAs</td>
</tr>
<tr>
<td>Current zoning</td>
</tr>
<tr>
<td>Total Project Cost</td>
</tr>
<tr>
<td>Estimated DIP Payment</td>
</tr>
<tr>
<td>Approximate timetable</td>
</tr>
</tbody>
</table>

4.5 Project Landscaping

Like McArthur Hall, the design of the Project creates outdoor landscaping to support the participant experience, including a patio with tables and chairs for study and socializing. Additional information on the Project’s landscaping is presented in Section 5.15, Urban Design.

4.6 Project Schedule

The schedule calls for the permitting and design process to be complete by the Fall of 2011, with construction starting in the late Fall, and building occupancy in October 2013.
4.7 Relationship to Existing Zoning

As mentioned above, the Project site is located within the Harvard University Institutional Sub-district of the Allston Neighborhood District and also within Harvard’s IMP Area. “College or University” uses are allowed uses within this subdistrict.

Prior to the issuance of a building permit, the BRA must issue both a Certificate of Compliance pursuant to Section 80B-6 of the Zoning Code and a Certification of Consistency pursuant to Section 80D-10 of the Zoning Code stating that the Project is consistent with the University’s IMP.

5.0 Anticipated Impacts

Under Article 80B (Large Project Review), a Project Notification Form is required to provide an overview of the areas of potential impact of a project. The Project’s potential impacts are summarized in the following sections and will be studied in more detail in a Draft Project Impact Report (“DPIR”).

5.1 Transportation and Access

The proposed Tata Hall project is not expected to have any noticeable effects on area traffic conditions 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. However, a campus-wide inventory of institutional parking will be provided as part of the IMP Amendment/DPIR. Operational improvements will be implemented on East Drive to accommodate the anticipated increases in taxicab demand at this entrance to the Harvard Business School.

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 are likely to use taxicabs or other car services to travel on either I-90 or Soldiers Field Road/Storrow Drive to the campus. 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.

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 Project. 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.
It is anticipated that the Tata Hall project will increase demand for taxicab service to and from the HBS campus. 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. 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.

5.2 Wind

The Project is not expected to have any significant impacts on pedestrian level winds. The building will be 6 to 7 stories in height (a maximum of approximately 78 feet) and will not exceed the roof line of the adjacent MacArthur Hall. At this height, the Project is not likely to cause channelization of wind or vertical deflection of upper level winds that typically can occur with buildings greater than 150 feet high.

5.3 Shadow

While the Project will result in increased shadow in the area, it is not anticipated to result in significant new shadow on surrounding public open spaces, public ways, or building façades. The Proponent will conduct a shadow study for the Project and report the results in the DPIR.

5.4 Daylight

The purpose of a daylight analysis is to estimate the extent to which a proposed project affects the amount of daylight reaching public streets in the immediate vicinity of a project site. The only public way in the vicinity of the Project is Soldiers Field Road and the closest point of the Project is set back approximately 100 feet from the edge of Soldiers Field Road. While daylight obstruction values will increase when compared to the existing undeveloped site, the Project will not adversely impact the amount of daylight reaching public ways.

5.5 Solar Glare

The design of the Project does not include the use of reflective glass or other reflective materials on the building façades that would potentially cause adverse impacts from reflected solar glare.

5.6 Air Quality

Potential long-term air quality impacts will be limited to emissions from Project-related mechanical equipment. In addition there will be negligible pollutant emissions from vehicular traffic generated by the development of the Project.

With respect to Greenhouse Gas (“GHG”) emissions, the Project's anticipated Gold LEED rating reflects a variety of efforts that will result in lower GHG emissions than a conventional building built to current code. Further, HBS is aware of the City's adoption of the so-called "Stretch Code," which the Project will not only meet, but exceed by virtue of energy-efficiencies gained through material selection, construction techniques, and commitments to purchasing of Green-e certified electricity, among other measures.
5.7  *Flood Hazards and Wetlands*

The Federal Emergency Management Agency (“FEMA”) Flood Insurance Rate Map for this area shows that the FEMA Flood Zone Designation for the Project site is Zone C, Area of Minimal Flooding.

The Project site does not contain wetlands.

While the building itself will be located outside of areas subject to jurisdiction of the Massachusetts DEP under the Massachusetts Public Waterfront Act (MGL Chapter 91), certain work associated with the Project will occur on filled tidelands. This work includes excavation and installation of utilities, and temporary construction related activities such as staging, lay down, temporary materials and equipment storage, etc. It is anticipated that this work can be undertaken through a Minor Project Modification under Chapter 91.

5.8  *Groundwater and Geotechnical Impacts*

The Project site is located in an area of high groundwater. In addition, this area is underlain progressively by layers of fill, organic soils, clay, glacial till, and bedrock.

The DPIR will include additional information on the Project’s foundation methodology and the potential impacts to groundwater and geotechnical conditions.

5.9  *Solid and Hazardous Waste*

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.

5.10  *Noise Impacts*

The Project site is located adjacent to Soldiers Field Road and is a considerable distance from any non-Harvard residential uses. The ambient noise in the area is dominated by traffic on the adjacent roadway.

During operations, neither the Project's mechanical equipment nor traffic noise associated with the Project are expected to result in a perceptible change in noise levels. The only operational noise from the Project will be from mechanical equipment that is located outdoors, and this equipment will comply with the City of Boston Zoning District Noise Standards. If warranted, acoustical buffering will be provided to mitigate noise impacts to abutting properties.
5.11  **Construction Logistics**

The Project is projected to create approximately 210 new construction jobs during peak periods, with approximately 85 new construction jobs on average days.

A Construction Management Plan ("CMP") will be submitted to the Boston Transportation Department ("BTD") for review and approval prior to issuance of a building permit. The CMP will identify construction mitigation measures and define truck routes which will help in minimizing the impact of trucks on local streets. However, given the Project’s location and the distance from non-Harvard properties, impacts on residents and other abutters are expected to be minimal.

As currently proposed, construction trucks accessing the site will arrive via the Mass. 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.

Construction staging, material laydown, and worker parking will occur on-site.

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.

5.12  **Rodent Control**

A rodent extermination certificate will be filed with the 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 for the proposed Project, 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.

5.13  **Wildlife Habitat**

The site is within a fully developed urban area and, as such, the proposed Project will not impact wildlife habitats as shown on the National Heritage and Endangered Species Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife.
5.14 *Project Sustainability*

HBS currently has seven LEED certified buildings on campus and it has established LEED Gold as its campus standard for new construction. Working closely with the Harvard University Office of Sustainability, HBS will evaluate the latest concepts in sustainable design for this type of project with the objective of achieving a LEED Gold Certification for this building.

The Project architect, William Rawn Associates, is led by LEED Accredited Professionals and the Project team also includes a sustainability consultant, Atelier 10.

A preliminary LEED checklist is included as Appendix B.

5.15 *Urban Design*

The Project’s urban design goals are discussed in the following sections and depicted on the following figures.

Figure 5: Urban Concept: Welcoming Curve

Figure 6: Urban Concept: Continuing Harvard Way Axis

Figure 7: Urban Concept: New Green Spaces

Figure 8: Site Section Diagram

*Significant Transparency: Open to the City*

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.

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 Harvard Business school campus. This will open views *into* and *through* the building from both the campus side (towards Boston) and from the Soldiers Field Road/Charles River side of the building (through the building towards the rest of campus).

*Shaping: Welcoming the City*

The building has a concave curve towards the river. In doing so, it draws the building mass back further from the river.

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.
FIG. 6: Urban Diagram:
Continuing Harvard Way Axis
FIG. 7 Urban Diagram: New Green Spaces
zoning height: approx. 78'}

Kresge Hall                Executive Education Quad                Tata Hall            Tata Lawn                Soldiers Field Road                Charles River

McArthur Hall (behind)
Open Space: Facing the City

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 Harvard Business School campus.

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

Threshold: Connecting Campus and City

The north end of the building curves away from McArthur (the adjacent building) 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 Harvard Business School campus and Allston beyond, presenting a clear and welcoming entry to and through campus between Cambridge and Allston.

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 Harvard Business School campus.

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 will provide maximum views across and downriver, presenting a beautiful, positive image of Boston for participants.

5.16 Historic Resources

The proposed Project site is adjacent to the Charles River Reservation/Soldiers Field Road and, beyond that, the Charles River Basin Historic District, both of which are listed in the State and National Register of Historic Places. The Project site is also within the Harvard Business School Area, which is included in the Inventory of Historical and Archeological Assets of the Commonwealth. The DPIR will map these resources and describe the potential impacts (visual and shadow) of the Project.
No previously identified archaeological resources are located within the Project area. No impacts to archaeological resources are anticipated.

5.17 Infrastructure (Water, Sewer, Stormwater)

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

The DPIR and 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 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 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 B.

5.17.1 Wastewater

Existing Wastewater

Local sanitary sewer service in the City of Boston is provided by the 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.

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.

Proposed Connection

The sewer service for the Project will tie into the Harvard Business School’s sanitary sewer system which discharges to BWSC mains located in Harvard Way and North Harvard Street and Western Avenue. Harvard will coordinate with the 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 (“DEP”) is required in connection with this Project.

5.17.2 Domestic Water and Fire Protection

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 Harvard Business School campus: Soldier’s 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 Harvard Business School’s internal water system or the 12-inch BWSC main along Soldier’s 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.

Proposed Connection

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

5.17.3 Stormwater Management

The stormwater management controls will be established in compliance with BWSC standards and the DEP’s Stormwater Management Policy. 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.
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 matched in the future condition. Additional information on the methods of stormwater management will be presented in the DPIR.

**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.

**Proposed Conditions**

Following treatment to remove sediments, stormwater from the site will be routed to the existing on-site storm drain system. It is expected that the runoff from the building roof will be directed to an infiltration system capable of infiltrating 1-inch of runoff. Excess roof runoff 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 the BWSC. Compliance with the standards for the final site design will be reviewed as part of the BWSC Site Plan Review Process.

5.17.4 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 Harvard Business School 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.

Additional information on the Project’s heating and cooling systems will be included in the DPIR.

5.17.5 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 shall be a draw-out power breaker, 100% rated with field adjustable LSIG settings. All feeder breakers shall be draw-out power breaker, with field adjustable LSIG settings.

A separate fire pump “tap” shall 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 shall 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 shall be provided to serve receptacle loads. All distribution equipment shall be provided by one manufacturer.

5.17.6 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 shall be located in separate rooms from the normal distribution systems. All emergency system wiring shall be on conduit and physically separated from the normal systems. A separate circuit breaker and feeder is required to serve the fire pump.

5.17.7 Fire Alarm System

The fire alarm system for the building shall 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 shall be programmed, tested, and be in fully operational condition including all required hardware, software, raceways and interconnecting wiring. All fire alarm wiring shall be class “A” in conduit.
APPENDIX A: FIGURES
Appendix A: Floor Plans: Second Floor
Appendix A: Floor Plans; Fourth Floor

IMPNF/PNF
Residential
Academic
Building Support

KEY

0 10' 25' 50'

Circulation / Gathering
Office

Residential
Academic
Building Support
Appendix A: Floor Plans: Fifth Floor
Appendix A: Floor Plans: Sixth Floor
Appendix A: Floor Plans: Seventh Floor
Appendix A: Floor Plans: Roof Plan
APPENDIX B: PRELIMINARY LEED CHECKLIST
LEED 2009 for New Construction
Harvard Business School Tata Hall

**Sustainable Sites**

- **Site Selection**: Do not develop sites that are prime farmland, floodplains or wetlands, parkland, or key habitat.
- **Brownfield Redevelopment**: Locate project on a redeveloped brownfield site.
- **Alternative Transportation**: Public Transportation Access
  - Project within 1/2 mile of a rail station or 1/4 mile of bus stops.
- **Alternative Transportation**: Bicycle Storage & Changing Rooms
  - Provide bicycle racks for 5% of building occupants and showers for 0.5% of TFE occupants.
- **Alternative Transportation**: Low-Emitting & Fuel-Efficient Vehicles
  - Provide preferred parking for hybrid vehicles for 5% of the project's parking capacity.
- **Site Development**: parking capacity
  - No parking.
- **Site Development**: Presence of a Stormwater Management Area:
  - Restore 50% of site open space or 20% of the total site, whichever is greater, for native landscaped vegetation.
- **Site Development**: Maximum Open Space
  - Exceed zoning open space requirements by 25%.
- **Stormwater Design**: Quantity Control
  - No net increase site runoff. OR reduce over existing conditions by 25%.
- **Heat Island Effect**: Roof
  - Use open-grid-paved, light-colored paving, or provide shade on 50% of all hardscape.
- **Heat Island Effect**: Roof
  - Use light-colored membrane; for 75% of roof or vegetated roof for 50% of roof.
- **Light Pollution Reduction**: No nighttime light trespasses from building AND meet exterior lighting requirements of ASHRAE 90.1-2007.

**Energy & Atmosphere**

- **Optimize Energy Performance**: Reduce building energy cost by 12%/14%/16% compared to ASHRAE 90.1-2007.
- **Optimize Energy Performance**: Reduce building energy cost by 18% / 20% / 22% compared to ASHRAE 90.1-2007.
- **Optimize Energy Performance**: Reduce building energy cost by 24%/28%/32% compared to ASHRAE 90.1-2007.
- **Optimize Energy Performance**: Reduce building energy cost by 36%/38%/40% compared to ASHRAE 90.1-2007.
- **On-Site Renewable Energy**: Produce renewable energy on-site for 5%/7% of building energy consumption, calculated by cost.
- **On-Site Renewable Energy**: Produce renewable energy on-site for 9%/11% of building energy consumption, calculated by cost.
- **On-Site Renewable Energy**: Produce renewable energy on-site for 11%/13% of building energy consumption, calculated by cost.

**Materials & Resources**

- **Building Reuse**: Maintain Existing Walls, Floors, & Roof.
  - Maintain existing structure and envelope for 55% / 75% of the existing building.
- **Building Reuse**: Maintain Existing Nonstructural Elements.
  - Use existing interior nonstructural elements at least 50% of the completed building.
- **Construction Waste Management**: Construction Waste Management:
  - Create a construction waste management plan and recycle or salvage construction waste.
- **Materials**: Use salvaged, refurbished, or reused materials for 5% / 10% of construction materials, calculated by cost.
- **Recycled Content**: Recycled Content:
  - Use materials or products with recycled content for 10% / 20% of construction materials, calculated by cost.
- **Regional Materials**: Regional Materials:
  - Use materials extracted and manufactured within 50 miles for 10%/20% of construction materials, calculated by cost.
- **Rapidly Renewable Materials**: Rapidly Renewable Materials
  - Use rapidly renewable materials for 25% of construction materials, calculated by cost.
- **Certified Wood**: Certified Wood
  - Use FSC-certified wood of 50% of wood-based materials, calculated by cost.

**Indoor Environmental Quality**

- **Outdoor Air Delivery Monitoring**: Real-time monitoring of outdoor air on ventilation systems and monitor CO2 concentrations.
- **Construction IAQ Management Plan**: During Construction
  - Develop an IQP plan that meets LEED-NC IAQ Guidelines for Construction Occupied Under Construction.
- **Construction IAQ Management Plan**: Before Occupancy
  - Use indoor air quality in the project, and comply with the SCAGAQ Rule #198.
- **Low-Emitting Materials**: Paints & Coatings
  - Use products with VOC levels specified in Green Seal Standard GS-11 and GC-03, and SCAGAQ Rule 1113.
- **Low-Emitting Materials**: Flooring Systems
  - Use carpet that meets the CRF Green Label, and FloorScore compliant hard surface flooring.
- **Low-Emitting Materials**: Composite Wood & AgriFiber Products
  - Use materials with no added urea-formaldehyde resins or adhesives.
- **Lighting**: Daylight & Views
  - Use floor coverings for 55% of individuals AND 100% of group lighting controls.
- **Lighting**: Daylight & Views
  - Floor coverings that meet the IBR-13 Method, and are located at least 25 feet from building.

**Innovation in Design**

- **Thermal Comfort**: Control
- **Thermal Comfort**: Design
- **Thermal Comfort**: Design
- **Design Review**: Before Occupancy
  - Design review, post occupancy review, recommissioning manual.
- **Design Review**: After Occupancy
  - Enhanced Commissioning.
- **Fundamental Refrigerant Management**: Select refrigerants with low global warming potential and ozone depletion potential.

**Regional Priority**

- **On-Site Renewable Energy**: Produce renewable energy on-site for 1% of building energy consumption, calculated by cost.
- **Stormwater Design**: Quantity Control
  - No net increase site runoff. OR reduce over existing conditions by 25%.
- **Heat Island Effect**: Non-Roof
  - Use open-grid-paved, light-colored paving, or provide shade on 50% of all hardscape.
- **Heat Island Effect**: Roof
  - Use light-colored membrane; for 75% of roof or vegetated roof for 50% of roof.