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Boston University School of Law

765 Commonwealth Avenue
Boston, Massachusetts

Project Notification Form
Expanded Environmental Notification Form

June 15, 2012

submitted to:

Executive Office of Energy and Environmental Affairs
MEPA Office

Boston Redevelopment Authority

submitted by:

Trustees of Boston University

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Project Summary

1.0 PROJECT SUMMARY

1.1 PROJECT IDENTIFICATION

Project Name: Boston University School of Law
Address/Location: 765 Commonwealth Avenue, Boston, MA

1.2 PROJECT OVERVIEW

Trustees of Boston University, (the "Project Proponent") is proposing the rehabilitation of approximately 144,160 gross square feet (gsf) of the School of Law Tower and construction of an approximately 93,525 gsf addition at 765 Commonwealth Avenue (see Figure 1-1, Locus Map)[1]. The project is located on an approximately 93,150 square foot (sf) site within the Boston University Charles River Campus in Boston (see Figure 1-2, Aerial View).

The purpose of the project is to rehabilitate the historic Sert-designed School of Law Tower and construct an addition to create a suitable academic facility that supports modern teaching methods and practices. The existing facility has significant exterior building envelope shortcomings common to buildings of its era, lacks adequate classroom and seminar space, works very poorly in terms of internal circulation and has limited common space for students. The University's Law School is nationally ranked in the top tier from an academic perspective, yet suffers from a substandard physical facility. In order to create a facility suitable for the future of the Law School, the exterior of the Tower will be appropriately restored, the interior will be rehabilitated with new building systems and the Tower will be programmed primarily for faculty offices and support programs. The new addition will become the core academic facility designed and constructed to provide easily accessible classrooms and instructional space, student support spaces (lockers, lounges, and function areas), and common areas.

A key component of the project is the restoration of the exterior of the Tower, which is one of a complex of buildings that was designed by Josep Lluis Sert and was constructed in 1964. The Tower's exterior concrete cast-in-place façade, which has serious cracking and spalling, will be restored. Other elements of the Tower's envelope, specifically the windows and metal panels, are either failing or do not meet the current energy code. The project will upgrade these elements using modern materials in a manner consistent with the original design.

The addition will be designed to respect the design of the historically significant Sert Complex and will contain student classrooms, student community spaces, and study spaces.

[1] Gross square feet (gsf) is based on the City of Boston Zoning Code definition which excludes mechanical space.

It will be five stories at the south side while preserving the original entry to the Tower at the northeast (see Figure 1-3, Project Site Plan and Figure 1-4, North Elevation).

1.3 PUBLIC REVIEW PROCESS

Following submission of the Project Notification Form/Expanded Environmental Notification Form (PNF/EENF) to the Boston Redevelopment Authority (BRA) and the Massachusetts Environmental Policy Act (MEPA) offices, the Proponent will meet with the city and state agencies and present the project to the Boston University Community Task Force. The Proponent looks forward to working with the MEPA office, the Boston Redevelopment Authority (BRA), and the City of Boston on this project.

1.3.1 STATE MEPA PROCESS

This Project Notification Form/Expanded Environmental Notification Form (PNF/EENF) is a joint filing intended to satisfy both the BRA Article 80B Large Project Review and the State MEPA process. It includes a review of the potential environmental impacts of the proposed project. The MEPA office will conduct a site visit as part of the review process prior to the issuance of a Certificate by the Secretary. There will also be a 30-day comment period after the EENF is publicly noticed in the *Environmental Monitor*.

1.3.2 SINGLE EIR

The applicant is requesting a Single Environmental Impact Report (EIR) for the entire project through the MEPA Office rather than the usual two-step Draft and Final EIR process. A Single EIR may be allowed if the applicant submits an Expanded ENF and meets certain criteria. This Expanded ENF meets the MEPA requirements by describing and analyzing all aspects of the project and feasible alternatives, providing a detailed baseline to measure potential environmental impacts and mitigation measures, and providing a design that the uses all feasible means to avoid potential environmental impacts.

1.3.3 CITY OF BOSTON ARTICLE 80 REVIEW PROCESS

This document is being submitted to the BRA as part of the Article 80B, Large Project Review process. A scoping session and a community meeting are expected to occur during the public comment period and prior to the issuance of a Scoping Determination.

This project was one of several Proposed Institutional Projects that were included in the recently approved Boston University Charles River Campus Institutional Master Plan Amendment as defined in Article 80D of the Code. In the Amendment, the

University identified the need for additional space for the library and classrooms for the Law School while recognizing the importance of the existing building as part of the Josep Lluis Sert complex of historically important buildings.

1.3.4 BOSTON UNIVERSITY COMMUNITY TASK FORCE

The Boston University Community Task Force is comprised of 16 representatives from areas surrounding the Charles River Campus. For 25 years, the Task Force has reviewed all Boston University master plans and development projects. Members of the Boston University Community Task Force include:

- Pamela Beale (Chair)
- Sonia Aleman
- Paul Berkeley
- Paul Creighton
- Dan Cuddy
- James Hynes
- Yvette Lancaster
- Archie Mazmanian
- Terri North
- Richard Ong
- Prutha Patel
- Shlomo Pinkas
- Victor Themo
- Elizabeth Walsh
- Bob Webber
- Alan Weinberger

1.3.5 BOSTON CIVIC DESIGN COMMISSION

It is anticipated that the project will be subject to schematic design review by the Boston Civic Design Commission (BCDC) under Article 28. As part of this process, the University will meet with the BCDC to review and discuss the project plans. The BCDC will provide a recommendation to the BRA Board.

1.4 PUBLIC BENEFITS

From its founding in 1869, Boston University has grown into a leading academic and research institution that attracts students and faculty to Boston from around the world. As the fifth largest private university in the country and the largest university in Boston with over 33,000 graduate and undergraduate students, Boston University recognizes that its continued success has been greatly influenced by its location in the City of Boston. With

nearly 10,000 faculty and staff, the University is the third largest private employer in the City of Boston and the 12th largest in the Commonwealth.

The University has established a symbiotic relationship with the City, encouraging its students to enrich their lives and education by taking advantage of the City's resources and, in turn, by playing a vital role in the life of its neighbors by providing them with a wide range of educational, cultural, social, legal, and medical services.

The University contributes to the local and regional economy through direct employment, purchased services and student, faculty, and staff spending. In addition, the University makes financial contributions directly to the City of Boston in the form of real estate taxes, payments in lieu of taxes, and linkage payments. Indirectly, the University supports the City through the provision of scholarships, services, and programs.

In FY2010, the University, its employees and students, and their visitors in the City spent over $1.15 billion, with an impact of $3.9 billion statewide. As part of this amount, the spending by students and their out of state visitors totaled over $260 million. Boston University and its subsidiary corporations generated 43,457 direct and indirect jobs in Massachusetts, including over 15,000 in Boston alone. During FY2010, the University purchased nearly $200 million in goods and services from vendors within the City. Salaries and benefits for employees living in the City exceeded $238 million.

Boston University also contributes directly to projects that improve the University neighborhood, including more than $3.5 million contributed to Commonwealth Avenue Improvement Projects, to provide matching dollars to city, state, and federal sources.

In addition to direct and indirect economic benefits to the City's economy, Boston University actively seeks ways to reduce the demand on city services. Through its own Police Department, the University brings additional security to the entire campus area, 24 hours a day, 7 days per week, responding to calls both in and outside campus boundaries. It also oversees the daily maintenance of the local MBTA stations and city sidewalks and streets around the campus; provides snow removal during winter months; plants and repairs street trees; and conducts pest control.

The School of Law takes great pride in the level of education it provides as well as serving the surrounding community in every way it can. The School of Law's commitment to the public interest is second to none. First, they prize their dedication to encourage work in the public interest by their students while the students are here and after they graduate. Second, law students contribute many hours of free legal services to people in need and to public institutions through the School's many clinical and externship programs. Those programs allow law students to represent individual pro bono clients or work for the judiciary, in government, or for public interest organizations.

The Project will provide substantial benefits to the City and its residents including:

- The rehabilitation and the continued use of an historic building, which is part of the Charles River Campus designed by Josep Lluis Sert.
- New landscaping and site design that improves pedestrian access to and within the Charles River Campus and maintains a pedestrian connection to the pedestrian bridge that crosses over Storrow Drive to the Charles River Esplanade.
- Approximately $1.4 million in linkage payments to the City of Boston.
- Approximately 1,000 direct construction jobs; 977 indirect construction jobs[2]; and 27 permanent jobs will be created as a result of this project.

1.5 PHASE 1 WAIVER

Should the MEPA review process result in the requirement to prepare an EIR, the Proponent requests a Phase 1 Waiver for certain early-action construction measures in order to maintain the project schedule. The complex nature of this project, combined with the need to keep the Law School and proximate academic facilities operational throughout the construction period, requires close attention to construction scheduling. Certain portions of the construction process could generate noise from construction equipment that could significantly affect the ability to use the School of Theology, Mugar Memorial Library, Pappas Library, and Law School. In order to make this project work practically and economically, the noisier elements of the construction process must be conducted when the University is not in active session, either during the summer break or winter inter-session. The construction schedule calls for certain early action items to be carried out in late fall and over the intersession in order to allow steel erection to proceed during the summer of 2013. Given the need for a Chapter 91 license for a portion of this work (below grade foundations on the north side), it would not be possible to achieve this schedule without a "Phase I Waiver" to allow these limited elements to proceed to permitting, while the entire project is reviewed under the MEPA process.

The specific elements of the Phase I Waiver request are: (1) removal of the circa 1982 entry stair, ramp, and clerestory addition to the Mugar Memorial Library and appropriately restoring the area known as the "Link" to its original configuration except as needed to meet current accessibility codes, (2) installation of temporary ventilation duct risers to provide fresh air flow to the Mugar Memorial Library during the construction period, and (3) at-risk installation of below grade pressure injected footings (PIFs) to support the new addition. These early action items are shown in Figures 1-5, 1-6, 1-7, and 1-8. Only one of these elements requires a state agency permit, the installation of below grade PIFs, and then only on the north side of the Central Boiler Plant, which is within Chapter 91 jurisdiction. It is anticipated that upon granting of the waiver, a Chapter 91 license will be sought solely for

[2] Construction jobs based on the Regional Input-Output Modeling System (RIMS II), US Department of Commerce, Bureau of Economic Analysis, 2012.

these north side PIFs and that a license for the full project would be sought and obtained following the completion of the EIR.

In order to approve a Phase I waiver, the Secretary must make the following findings:

(a) the potential environmental impacts of phase one, taken alone, are insignificant;
The impacts of the "Phase I waiver" elements are in fact insignificant. The removal of the 1982 addition to the Mugar will simply enhance the integrity of the original structure and will be consistent with the design intent of Sert. The ventilation structures are temporary and will be removed at the end of the construction period. The PIFs are below grade structures, which do not create any off-site impacts.

(b) ample and unconstrained infrastructure facilities and services exist to support phase one;
The entire infrastructure necessary to support the existing operations of the complex is already in place. Construction staging and access for new elements is easily available and will be reviewed by the Boston Transportation Department through a Construction Management Plan.

(c) the Project is severable, such that phase one does not require the implementation of any other future phase of the Project or restrict the means by which potential environmental impacts from any other phase of the Project may be avoided, minimized or mitigated; and

Removal of the 1982 addition does not presuppose the completion of the larger project and would simply restore the Mugar to its original configuration. The ventilation structures are temporary and will be removed in any case upon completion. The at-risk installation of PIFs is designed to support future phases of work, but do not require the construction of future phases, nor do they constrain potential design changes to the upper elements of the new addition, which would reduce the project's impacts.

(*d) the Agency Action on phase one will contain terms such as a condition or restriction in a Permit, contract or other relevant document approving or allowing the Agency Action, or other evidence satisfactory to the Secretary, so as to ensure due compliance with MEPA and 301 CMR 11.00 prior to Commencement of any other phase of the Project.*

Construction of the elements beyond these early action items will require state agency action, specifically a Chapter 91 license for the full facility, which will ensure compliance with MEPA prior to the commencement of the full project. In fact, it is quite likely that MEPA will have been completed prior to these early action items, although the project will not be fully permitted under Chapter 91.

The balance of the project work will include construction of the new School of Law addition and then the renovation of the School of Law Tower as describe in Chapter 2 of

this document and would be carried out only after securing a Chapter 91 license for the full project within jurisdiction.

1.6 SUMMARY OF REQUIRED PERMITS AND APPROVALS

The project expects to secure many local, state, and federal permits and approvals prior to commencement of construction. The following is a list of the anticipated federal, state, and local permits/approvals:

AGENCY	PERMIT/APPROVAL
Federal	
Environmental Protection Agency	NPDES Notice of Intent for Construction Dewatering
	NPDES Stormwater Management Notice of Intent
Federal Aviation Administration	Notice of Proposed Construction – Crane
State	
MEPA Office	Environmental Impact Review
Massachusetts Historical Commission	Determination of No Adverse Effect/MOA
Department of Environmental Protection	Notification of Construction/Demolition
	Chapter 91 Waterways License (Expedited Review)
Massachusetts Water Resources Authority	8M Permit
Local	
Boston Redevelopment Authority	Article 80 Large Project Review
	Cooperation Agreement
Boston Civic Design Commission	Recommendation Pursuant to Article 80 Review
Boston Transportation Department	Transportation Access Plan Agreement
	Construction Management Plan
Boston Water & Sewer Commission	Site Plan Approval
	General Service Application
	Sewer Connection Permit
Boston Inspectional Services Department	Building Permit

1.7 PROJECT TEAM

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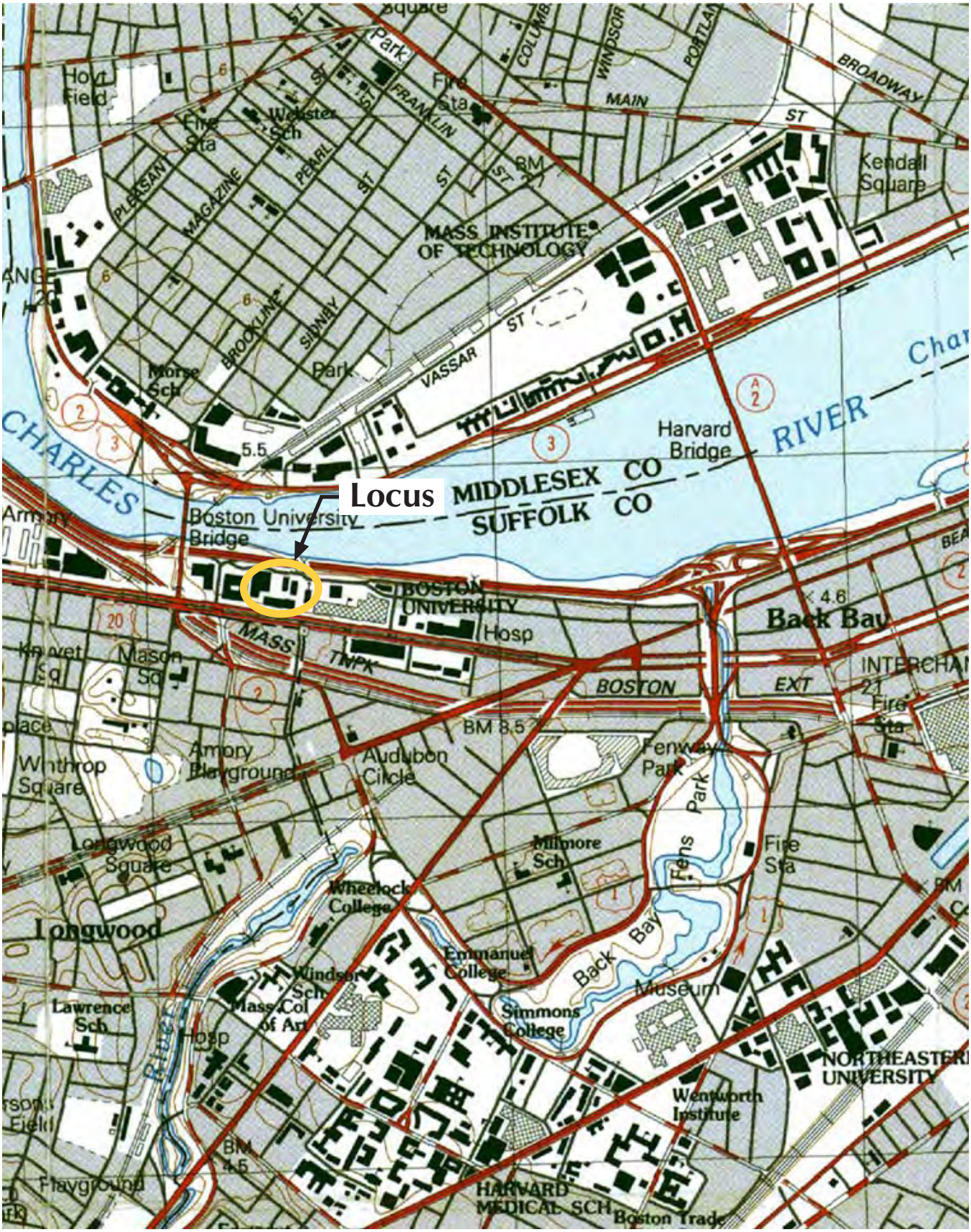
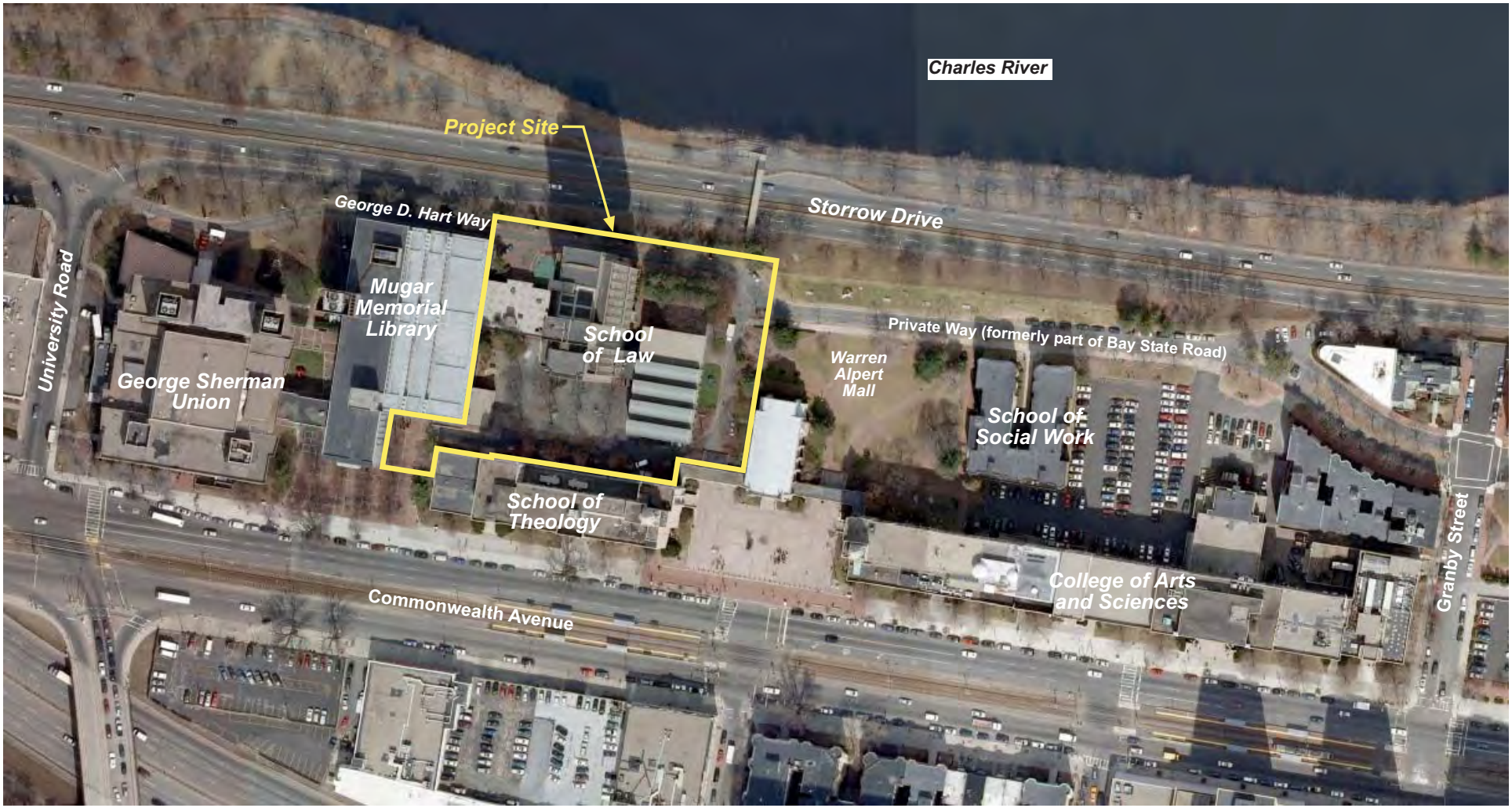


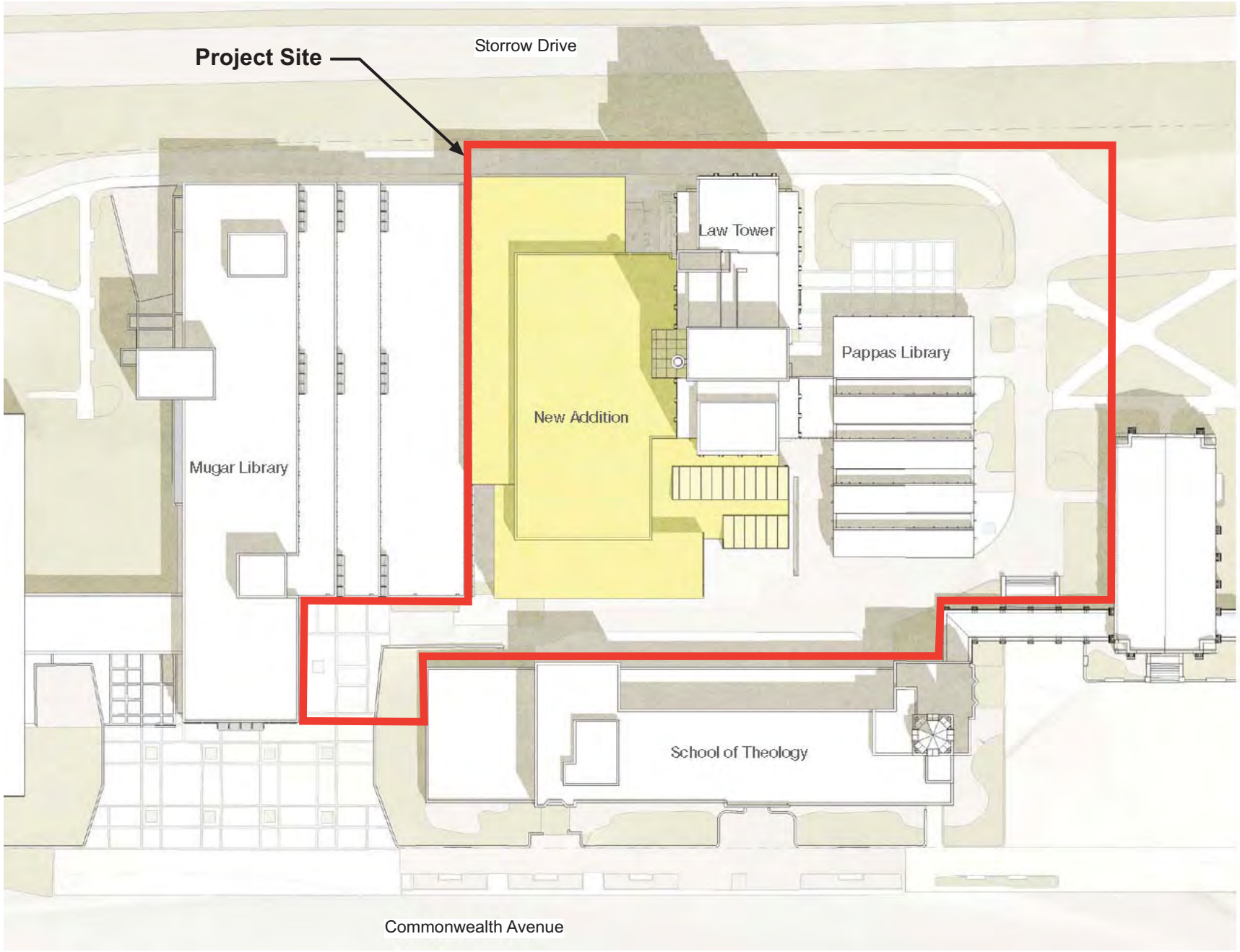
Boston University
BOSTON, MASSACHUSETTS

Figure 1-1
Locus Map
source: USGS



Boston University
BOSTON, MASSACHUSETTS

Figure 1-2
Aerial View
Source: MassGIS, 2011

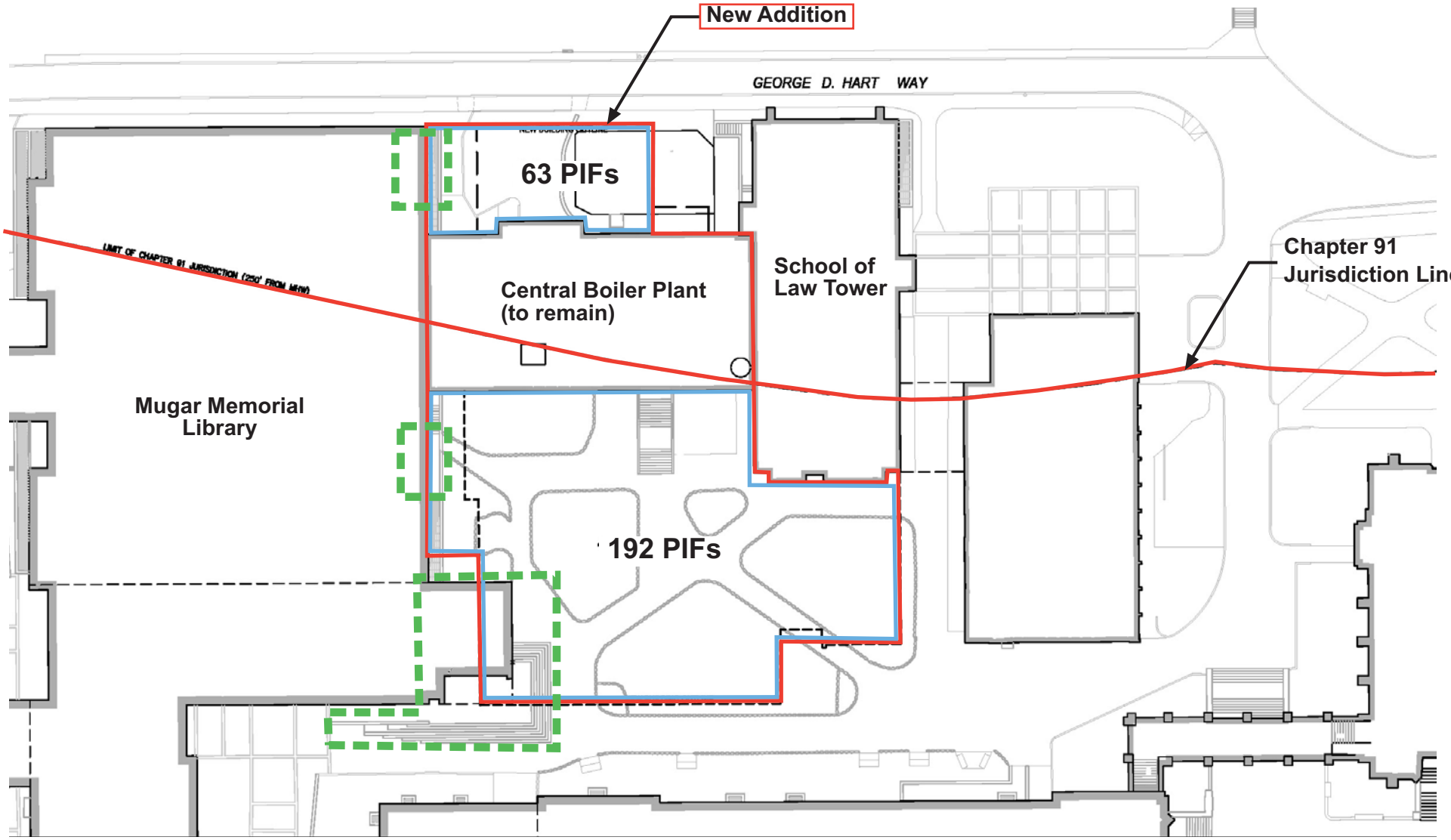


Boston University
BOSTON, MASSACHUSETTS

Figure 1-3
Project Site Plan
source: Bruner Cott & Associates, 2012

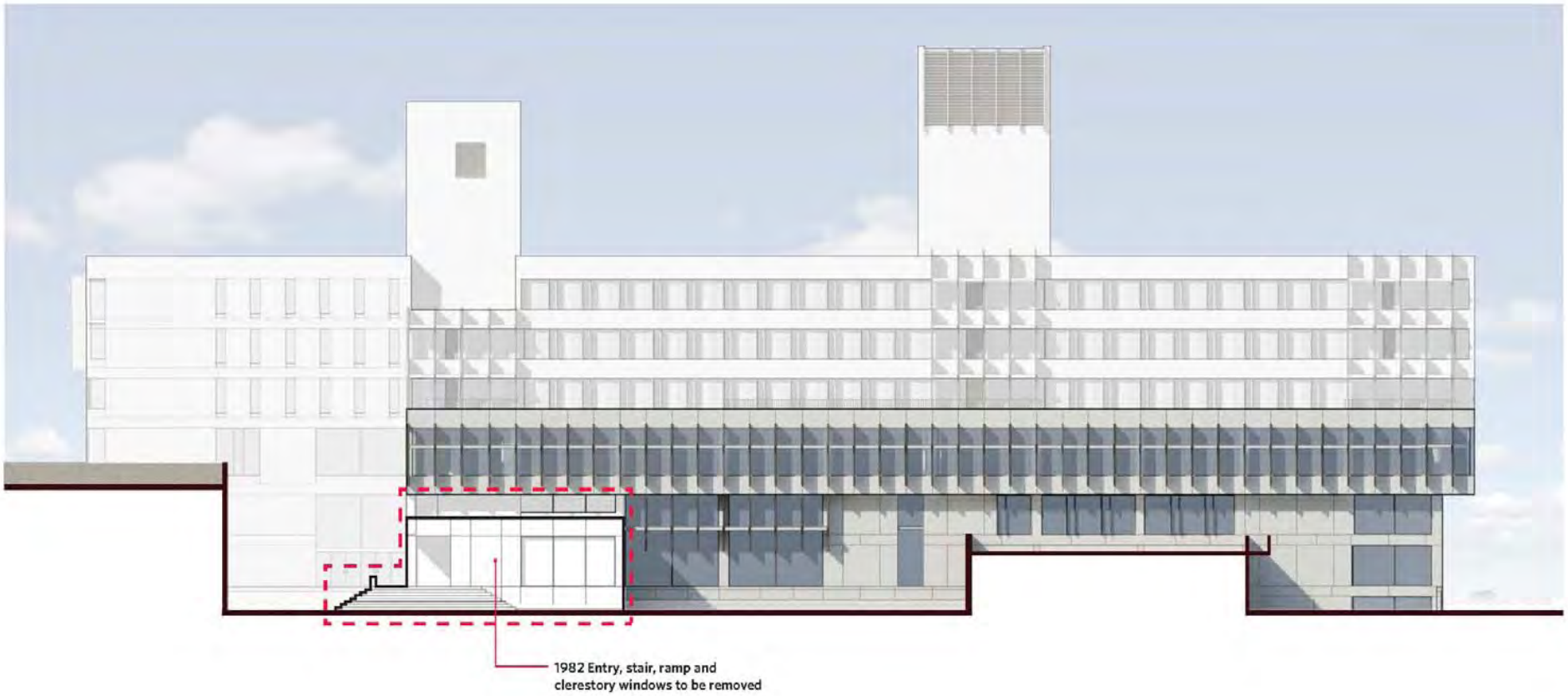
Boston University
BOSTON, MASSACHUSETTS

Figure 1-4
School of Law North Elevation
source: Bruner Cott & Assciates, 2012



Boston University
BOSTON, MASSACHUSETTS

Figure 1-5
Early Work Plan
source: Bruner Cott & Assciates, 2012



Boston University
BOSTON, MASSACHUSETTS

Figure 1-6
Mugar Library East Elevation - Current Condition and Proposed Demolition
source: Bruner Cott & Associates, Inc., 2012

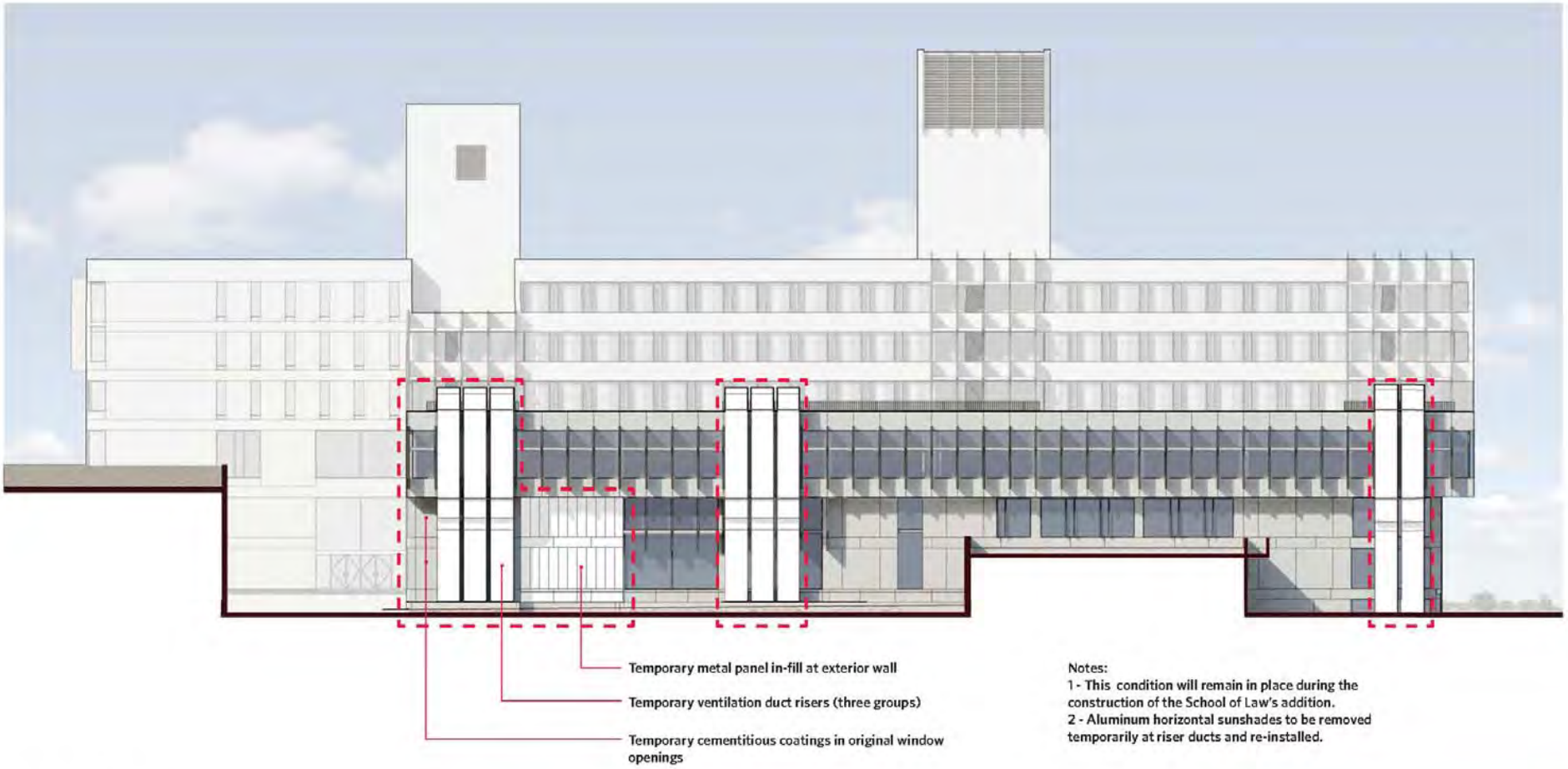
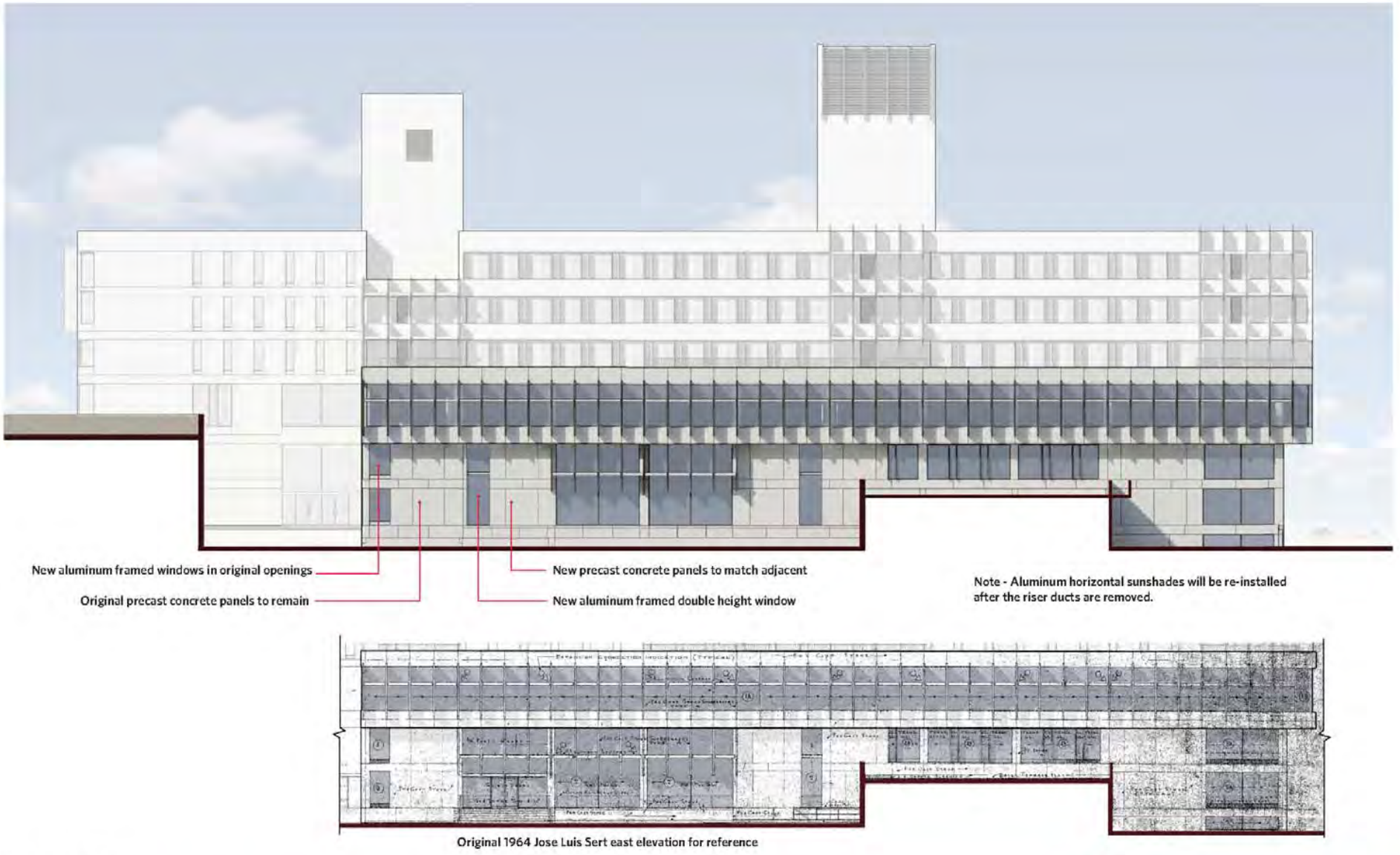


Figure 1-7

Mugar Library East Elevation - Temporary Duct Risers and Metal Panel Infill

source: Bruner Cott & Associates, Inc., 2012


New aluminum framed windows in original openings
Original precast concrete panels to remain
New precast concrete panels to match adjacent
New aluminum framed double height window
Note - Aluminum horizontal sunshades will be re-installed after the riser ducts are removed.
Original 1964 Jose Luis Sert east elevation for reference

Chapter 2

Project Description

2.0 PROJECT DESCRIPTION

2.1 PROJECT SITE AND SURROUNDINGS

The Boston University Charles River Campus consists of some 112 acres of land and 274 buildings containing approximately 11.8 million square feet (sf) of space. The campus is centered on the 1.5 mile stretch of Commonwealth Avenue running west from Kenmore Square. The academic core of the University is concentrated along both sides of Commonwealth Avenue, extending from the Metcalf Center for Science and Engineering near Kenmore Square to the Boston University Bridge.

The Boston University School of Law is located at 765 Commonwealth Avenue, a block to the east of the Boston University Bridge (see Figure 1-1, Locus Map). It is bordered by the Boston University School of Theology to the south and the Boston University Mugar Memorial Library to the west, with Storrow Drive to the north, and the Warren Alpert Mall and Marsh Chapel to the east. The University owned George D. Hart Way provides service access to the buildings between Granby Street and University Road.

A complex of three linked buildings currently occupies the approximately 2.1 acre School of Law project site: the 18-story School of Law Tower, the one-story Central Boiler Plant, and a three-story building housing the Pappas Law Library and the Law Auditorium. These three buildings, together with the Mugar Memorial Library and School of Theology, define a series of open spaces, including courtyards to the southwest and northeast of the Tower. The walkway between the Pappas Law Library and the School of Theology serves as a small loading zone and includes five parking spaces. A loading and service area is located on the north side of the Central Boiler Plant (see Figure 2-1, Oblique View of Project Site; Figure 2-2, Existing Conditions Survey; and Figure 2-3, Existing Conditions Photographs).

2.2 PROJECT OVERVIEW

2.2.1 PROJECT LOCATION AND SCOPE

The project will rehabilitate the exterior of the School of Law Tower and renovate the interior space, which will include approximately 144,160 gross square feet (gsf) of space (see Table 2-1, Building Program for the Boston University School of Law). A five-story addition of approximately 93,525 gsf will be constructed over the Central Boiler Plant and in the courtyard between the Tower and the Mugar Memorial Library (see Figure 2-4, Project Site Plan). The renovated Tower and the new addition will occupy a total of approximately 237,685 gsf of space. Furthermore, the interior of the Pappas Law Library, which has approximately 25,660 gsf of space, will also be brought up to code.

Table 2-1. Building Program for Boston University School of Law

Total Project Site	93,150 square feet (sf)
Building Footprint Area	36,496 sf
Gross Square Feet (gsf) (1) Addition Renovation to the Tower Code upgrades to Pappas **Total**	 93,525 gsf 144,160 gsf 25,660 gsf **263,345 gsf**
Floor Area Ratio	2.83
Stories	18 Stories
Height of building (1) Tower Addition	 264 feet 98 feet

Note 1 - Building areas are based on Boston Zoning Code, which defines gross square feet for calculation of Floor Area Ratio (FAR) purposes. Height is measured from grade, which is at 19 feet (Boston City Base).

2.2.2 PROJECT DEVELOPMENT STRATEGY

Since its opening in 1964, the School of Law Tower, designed by Josep Lluis Sert, has become an iconic image for Boston University and a well-recognized feature of the Boston skyline. While its narrow profile and heavily articulated façade contribute to its powerful presence along the Charles River, these same features have long posed challenges to the building's occupants and to the University.

As is the case with many buildings of the era, the cast-in-place concrete and exposed-aggregate precast panels have not weathered well. Concrete has spalled and some of the reinforcing steel is visible. Steel frame windows and panels are failing. Irrespective of condition, the original design and construction of the building does not meet today's standards for insulation and energy efficiency.

The small floor plate of the 18-story School of Law Tower requires that classrooms and offices for faculty and administration be distributed vertically throughout the building, which is served by six small elevators. Students, faculty, and administration rely on these elevators for access to classrooms and other assembly spaces. At peak times each day, it can take as long as twenty minutes to go from one class to another. The Law School needs more classrooms than it currently has, so the existing classrooms are over-utilized, and there is no space available for other types of student-oriented space.

Beyond the need for additional classrooms, the School also requires additional formal and informal student social space, including an in-school dining area, facilities for group study, and space for the expansion of the School's Professional Education programs.

Recognizing the building's importance to the campus and the challenges it presents to the School of Law's academic program, the University has developed a program to restore the existing structure and improve its ability to support the mission of the School of Law. Classrooms will be transferred to a new addition at the base of the School of Law Tower, easing the pressure on the elevators, and the Tower will be re-purposed for offices for faculty, administration, and student services. The Tower's concrete and precast exterior will be repaired and the window and metal panels will be replaced with modern, energy-efficient assemblies of similar design.

2.2.3 BUILDING PROGRAM

The goals of the proposed project are to improve the classroom experience, increase opportunities for student interaction and community-building, expand and improve the library to promote collaborative research, accommodate the School's growing Professional Practice curriculum, and improve environmental quality for students, faculty, and staff. The classroom experience will be improved by retiring the older, less efficient and less accessible classrooms in the School of Law Tower and replacing them with new classrooms on the lower floors of the addition. By moving the classrooms lower in the building and connecting them with a series of open and inviting stairways, the pressure on both the new and existing elevators will be reduced. The proposed addition will also house new student lockers, lounges, and other social spaces to improve the student experience. The existing Pappas Law Library will remain in its current location - it will expand into the proposed addition to increase the available area for the library collection and for library seating and study space. The program uses for the proposed development are shown in Table 2-2, Program Summary.

Table 2-2. Program Summary

Program Use	Assignable Square feet
Instructional, Library, Student	102,157
Faculty/Administration	52,452
Professional Practice	14,667
Total Program	169,276

Student locker facilities, lounges, a small dining facility and other student function and informal meeting spaces will be provided throughout the new addition in proximity to the relocated classrooms.

The Pappas Law Library currently occupies the upper two levels of the three-story Pappas Law Library building to the east of the School of Law Tower, along with the third level of the Tower itself. The Tower and the third level of the Pappas Law

Library Building are connected with a bridge, which will remain, and a new bridge will be constructed immediately underneath it to provide handicap access between the Tower and the Library's lower level. The remainder of the expanded Law Library program will be housed in the proposed addition.

With the majority of the classroom and assembly spaces removed from the School of Law Tower and located in the new addition, the Tower will be available to accommodate the School of Law's space requirements for faculty, administrative, and student programs. The faculty office program includes space for full-time, adjunct, and emeritus faculty and visiting scholars. All of the faculty offices and associated service spaces will be located on the upper floors of the Tower.

The School of Law Administration includes the offices of the Dean, the Associate and Assistant Deans, Admissions, Marketing, Publications, Career Development, Finance, the Registrar, Alumni Relations, and support for various graduate programs. These functions will be housed in the lower and middle floors of the Tower.

2.2.4 BUILDING DESIGN

The proposed project includes the restoration of the Boston University School of Law Tower and the construction of a new addition adjacent to the Tower. The spalled cast-in-place concrete of the existing buildings will be repaired where needed and care will be taken to match existing color and texture as much as possible. Precast fins and other precast elements on the exterior will be repaired or replaced as necessary. All exterior concrete will be cleaned. Existing windows will be replaced with new, energy-efficient units of similar appearance and profile to the original. Some of the full-story precast panels will be replaced with glass in a manner consistent with the original compositional intent of the building façade.

On the interior of the Tower, existing mechanical, electrical, and plumbing systems will be removed and replaced with modern, energy and water-efficient systems and fixtures. Restrooms will be enlarged and expanded to be accessible to more of the building's occupants. The floors of the Tower will be reorganized with new partitions to house the Law School's program of offices for School of Law faculty, administrative staff, and student organizations. Classrooms will be removed from the Tower and relocated to the new addition. In some locations, floor plates will be modified to accommodate the replacement of large tiered classrooms with office space.

The relocated classrooms, along with new student social spaces and an expansion of the Pappas Law Library, will be located in a new five-story addition to be built immediately to the west of the School of Law Tower, between the Tower and the Mugar Memorial Library. The new addition will span over the existing Central Boiler Plant and will occupy a large portion of the Law School Courtyard.

Larger classrooms will be located on the first two floors such that most classrooms for more than 100 students will be within one floor of the main entry. Smaller classrooms will be located on the upper levels, primarily the fourth floor.

A major feature of the proposed project is the relocation of the main entry from its infrequently-used current location on the northeast side of the School of Law Tower. The new entry will face an open forecourt connected to the major east-west pedestrian path south of the Law School. The entry will open into an inviting two-story glass enclosure or "winter garden," with large open public stairs leading to the classroom level above.

The second floor will have classrooms and lockers, but it will also be the primary student social space for the new Law School complex and a major intersection of all the school's activities. Student lounges, a small dining facility, a two-story high function space, and the main entry to the Law School Library will all be located on this floor.

The third floor of the addition will house the additional space for the Law School Library, and will be connected to the other library floors by an internal stair and a dedicated elevator. The fourth and fifth floor will house smaller classrooms and special purpose instructional spaces for Clinical and Transactional Law and Professional Practice education. Work within the Pappas Law Library building will concentrate on upgrading the facility to make it compliant with current egress and accessibility codes.

The exterior of the addition will be constructed of a unitized panel system, faced with limestone or some similar stone or masonry material. On the north side of the addition there will be a glazed central bay projecting from the main building mass, culminating in a glazed cantilever extending west toward the Mugar Memorial Library at the fifth floor.

2.2.5 PUBLIC OPEN SPACE/LANDSCAPE PLAN

The open space and landscape layout for the proposed Boston University School of Law was designed to meet three goals: 1) to provide a new and highly visible entrance to the Law School from a forecourt that would be clearly identified with the Law School, 2) to reinforce the existing heavily-used pedestrian path that runs between the School of Theology and the Law School, and 3) to preserve and enhance the quality of the open space to the north and east of the site.

The proposed new Law School entry will face a new paved entry forecourt off the main east-west pedestrian path (see Figure 2-5, Pedestrian Access Plan). Detailing and

paving materials will identify it as part of the Law School and help define the Law School precinct. The pedestrian path itself, which serves as an active connector between the Alpert Mall and Marsh Plaza to the east and the Mugar Memorial Library and George Sherman Union to the west, will be re-graded and paved with new trees and plantings. The courtyard in front of the Mugar Memorial Library and the open area to the north and east of the School of Law Tower on the north side of the Pappas Law Library will be restored and replanted to reinforce the existing character of the area and to connect to the Alpert Mall to the east. The space between the School of Law Tower and the Pappas Law Library Building will be redesigned to emphasize the visual connection between the original and the new entrances to the School. Plantings will be native species and select ornamental species that maintain the existing planted character of the Boston University Campus.

2.2.6 PHASING PLAN

The construction management firm, Skanska USA was hired early in schematic design phase to assist the architect and the University in establishing an efficient schedule that minimized both the overall duration and the time the occupants had to be relocated from the Tower. This was accomplished through the definition of early construction activities that will prepare the addition for steel erection in the summer of 2013 and through the exterior restoration of the Tower that starts in the summer of 2012 and continues as weather permits. The result of this approach is a project that will be done in two phases (see Figure 2-6, Project Phasing Plan).

The project is in proximity to several academic buildings, and certain stages of construction will need to occur at off-hours, perhaps on the third shift, to mitigate noise and vibrations. Because there are no private residences in proximity, disruption to the community will be minimal.

Phase 1

In Phase 1, which is mainly for the new addition, enabling activities will begin in the summer of 2012 with site clearing and removal of underground obstructions. Early mobilization in the winter of 2012 will include construction of the footings, grade beams and pile caps leading up to full mobilization starting in the summer of 2013, with completion of the addition by the summer of 2014.

Phase 2

When the addition is completed, in the summer of 2014, classes and student support functions will move into the new building. The remaining occupants of the Tower will be temporarily relocated to allow the Tower work to begin. The exterior Tower restoration will continue throughout both phases of the project. The Tower interior renovation will begin in the summer of 2014 and both interior and exterior will be completed in the fall of 2015.

2.3 COMPLIANCE WITH BOSTON ZONING CODE

The project site is located within an H-4 zoning district established by Section 3-1A.c of the Boston Zoning Code (Code). The existing and proposed "college or university use" is a conditional use within the H-4 zoning district. The proposed project Floor Area Ratio (FAR) of 2.8 is less than the existing H-4 zoning, which allows a FAR of 4.0 (see Table 2.1). The FAR was calculated by dividing the project's gross square feet (263,345 gsf) by the site area (93,150 sf).

This project was one of several Proposed Institutional Projects that were included in the Boston University Institutional Master Plan Amendment, which was approved in 2010, as defined in Article 80D of the Code. In the Amendment, the University identified the need for additional space for the library and classrooms for the Law School while recognizing the importance of the existing buildings as part of the historically-significant complex that was designed by Josep Lluis Sert.

In accordance with Article 80B of the Code, the Project is subject to the requirements of Large Project Review because it exceeds 50,000 sf. It is anticipated that the project will be subject to design review by the Boston Civic Design Commission under Article 28.

The project site is located within the Groundwater Conservation Overlay District. The project design will comply with the provisions of Article 32 of the Code to protect groundwater.

The project is also subject to Article 37 Green Buildings of the Code, which requires that the project be LEED certifiable. The project has been registered under LEED and is targeting LEED Gold Certification.

2.4 PROJECT ALTERNATIVES

The School of Law Tower and the Pappas Law Library house almost all of the Law School's program. The Tower in particular is inefficient in its use of space and cannot accommodate the School of Law's requirements. While the Tower is structurally sound, its mechanical systems are outdated, noisy, and inefficient in their energy use. The building envelope is deteriorating and in immediate need of repair. At the same time, the University recognizes that the School of Law Tower, along with the rest of the Sert Complex, is a historically significant building and that plans for the Tower's repair, renovation, and re-use must be handled with appropriate sensitivity.

Over the course of this project, a number of alternative development strategies have been tested, including the construction of an all-new School of Law on a nearby site on the Boston University campus. This option proved to be financially unfeasible in and of itself,

and would have left the University with a historically significant building empty and in need of repair and/or stabilization without any anticipated tenant to justify the work.

The current proposal recognizes the fact that, with a new addition to house the large classrooms and other assembly spaces required by today's Law School program, the School of Law Tower could, with proper restoration, accommodate all of the Law School's program requirements for faculty and administrative offices and student groups. This ultimately was determined to be the best strategy for providing the School of Law with the modern facility it needs while preserving and extending the life of an important campus resource.

Boston University
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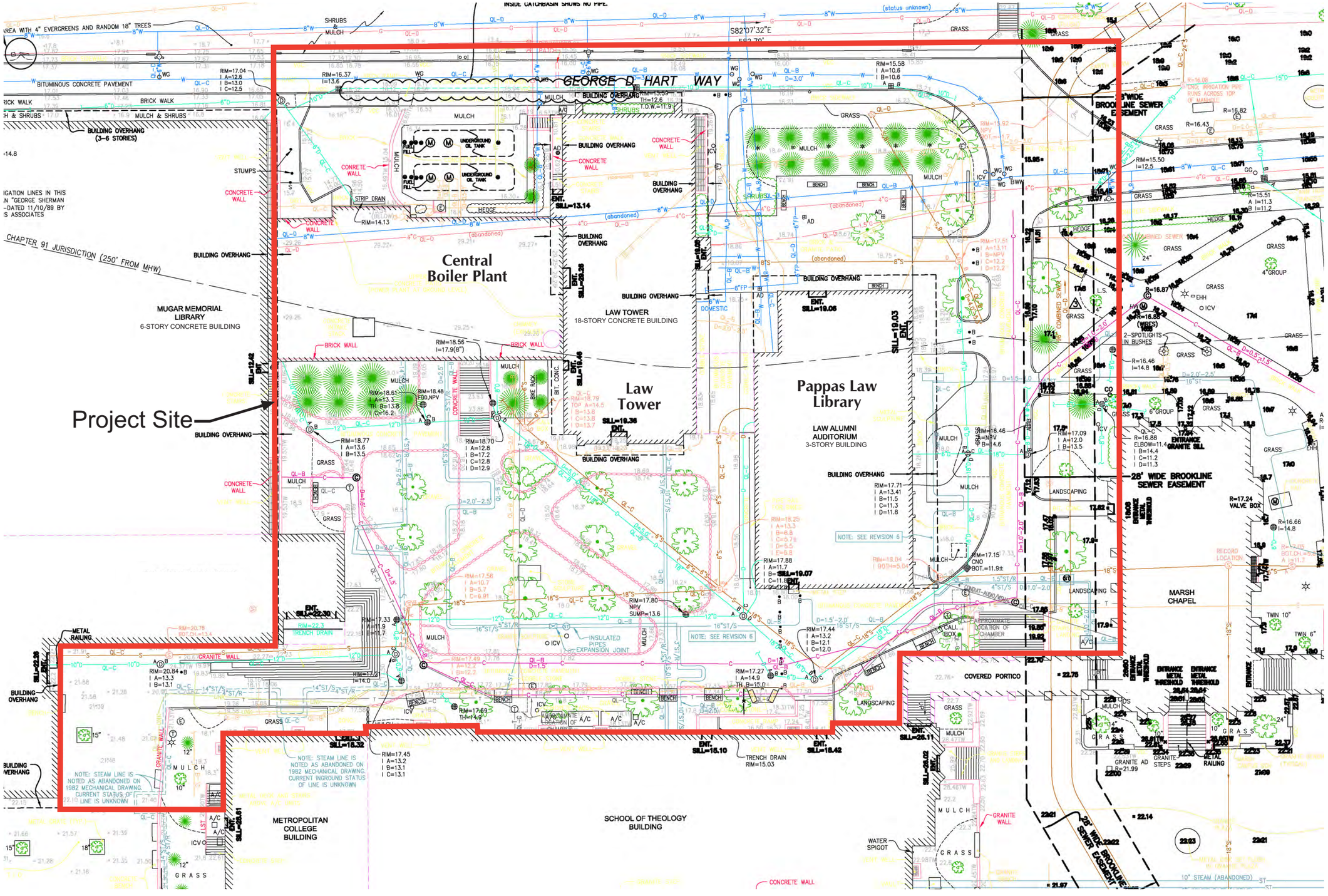
Figure 2-1
Oblique View
source: Bing Maps, 2011



Boston University
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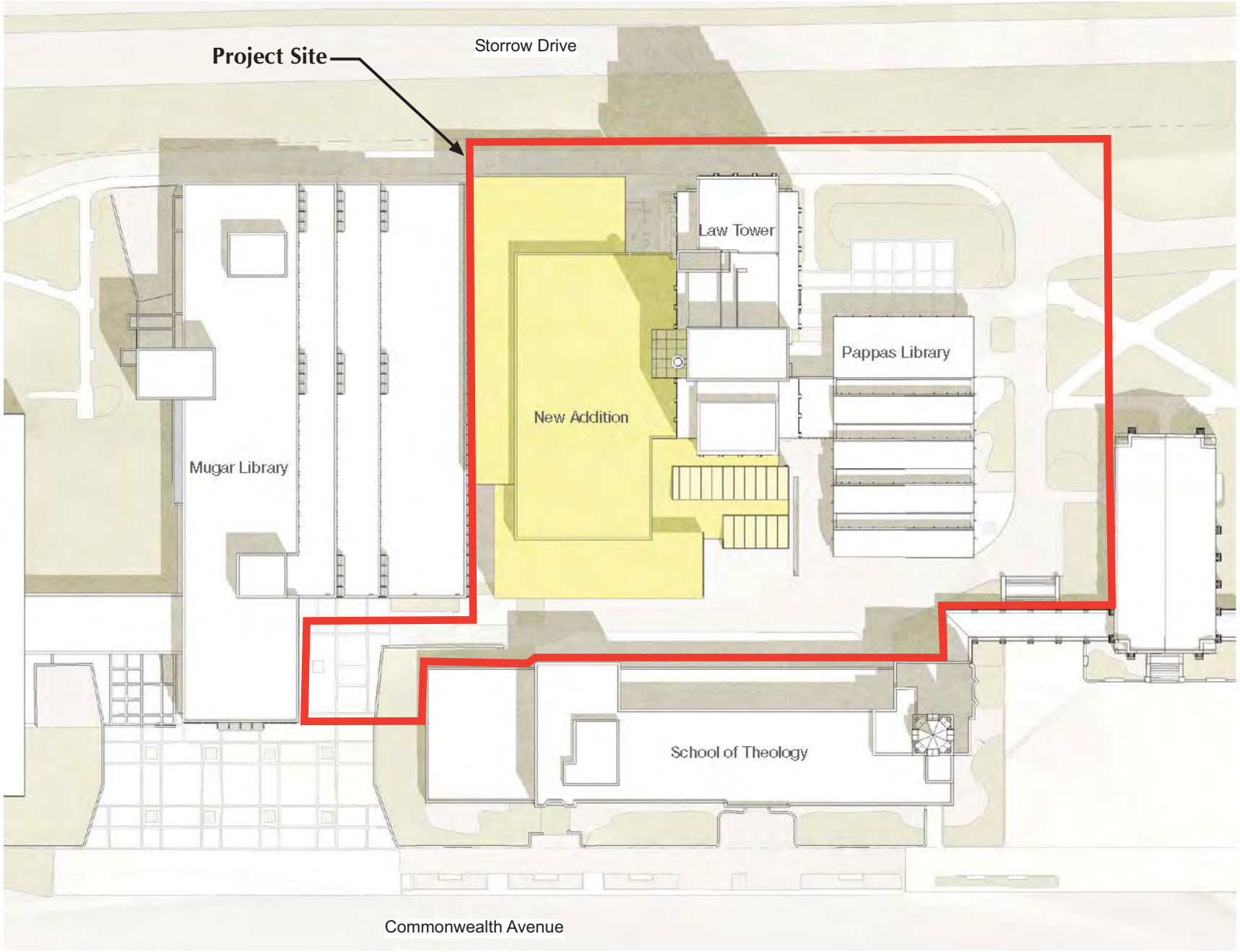
Figure 2-2
Existing Conditions Survey
source: Nitsch Engineering, February 4, 2010

View of Tower Looking Southeast from Storrow Drive

View of Tower Entrance Looking West

Typical Window Treatments on Tower

View of Pappas Library Building and Tower Looking West



Boston University
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Figure 2-4
Project Site Plan
source: Bruner Cott & Associates, Inc., 2012

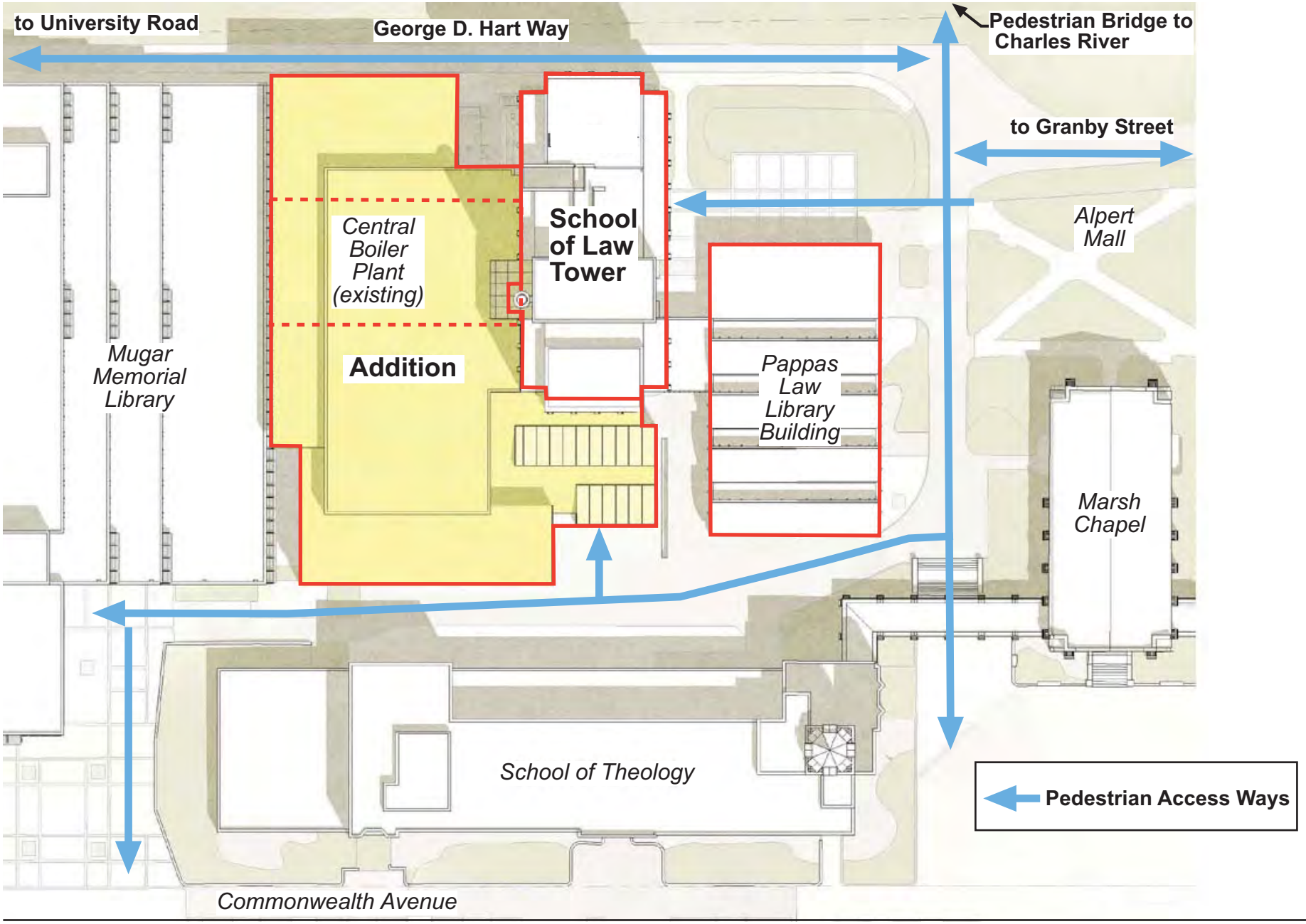
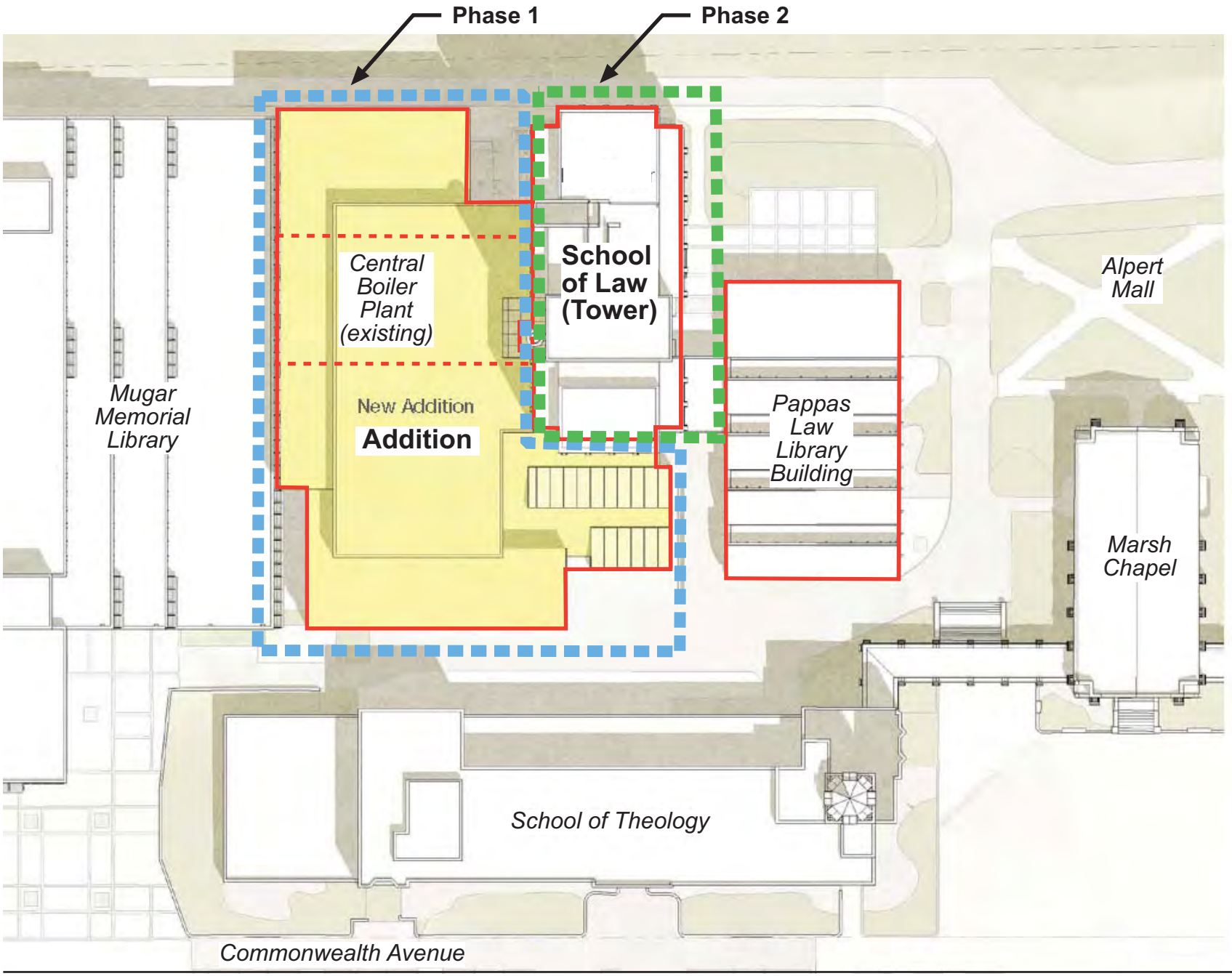


Figure 2-5
Pedestrian Access Plan
Source: Bruner/Cott & Associates, Inc., 2012



Boston University
BOSTON, MASSACHUSETTS

Figure 2-6
Project Phasing Plan
Source: Bruner/Cott & Associates, Inc., 2012

Chapter 3

Urban Design

3.0 URBAN DESIGN

3.1 INTRODUCTION

The Boston University School of Law site overlooks the Charles River and is occupied by three buildings; the School of Law Tower, the Central Boiler Plant, and the Pappas Law Library. Each building is a component of the Sert Complex, which also includes the Mugar Memorial Library and the George Sherman Union, and was constructed in the early 1960's (see Figure 3-1, Sert Complex). These buildings are well-known as an urban design assemblage with particular care given to architectural treatments at varying scales.

The University established design goals for the School of Law project: make the School of Law a viable facility that supports modern teaching practices needed to meet the University's academic program and restore the exterior of this historic structure. In order to accomplish these goals, the exterior of the buildings will be restored and the interiors will be reprogrammed and rehabilitated with new systems. An additional structure of approximately 93,525 gross square feet (gsf) will be designed and constructed to support the School's academic programs. See Figures 3-2 through 3-13 showing the floor plans, elevations, perspectives, and a section of the proposed project.

Bruner/Cott & Associates, an architectural and urban design firm based in Cambridge, MA, authored the original Boston University Josep Lluis Sert Complex Preservation and Development Plan[1] in 2008 and is now providing architectural and engineering services to design and construct the new project.

3.2 DESIGN PRINCIPLES

3.2.1 SCHOOL OF LAW TOWER

The School of Law Tower, in its entirety, is the most architecturally significant component of this outstanding building complex. The Boston University Josep Lluis Sert Complex Preservation and Development Plan notes the desirability of allowing clear and unobstructed views of the Tower, up close and at a distance. Until the construction of more recent Boston University residential high-rises, the Tower was the tallest building on the Boston University's Charles River skyline. Regardless of its shorter stature and monochromatic appearance, Sert's Tower still dominates Boston University's Central Campus skyline and serves as a reminder that the School of Law Tower is still regarded as one of Boston's outstanding structures and the most exuberant of Sert's tall buildings.

[1] Bruner/Cott & Associates, Inc., 2008

The physical relationships among the lower buildings and the tower on the two-dimensional site plan and in three dimensions are distinctive. The proposed addition will be respectful of the tower's massing as well as the three dimensional relationships already established among the distinctive grouping of the entire Sert Complex, most notably the Pappas Law Library and the Mugar Memorial Library.

3.2.2 ADDITION

The School of Law Courtyard is located at the south side of the Tower and is bordered by the Pappas Law Library building to the east, the School of Theology to the south, and the Mugar Memorial Library to the west. The Preservation and Development Plan indicates that any infill building in this courtyard will have less of an architectural impact than in other locations. The layout and materials of the interior courtyard do not support the pedestrian movement influenced by the time-distance relationships among uses in this part of the campus. Possibly due to the remote entrance locations to the Law School and the Pappas Law Library, the courtyard has never been resolved in landscape terms. Furthermore, the view to the Charles River is blocked by the Central Boiler Plant.

This location will provide the space for classrooms and entry lobbies, and will refocus the entry point into the building through a large glazed indoor winter garden that will provide unobstructed views to the base of the south side of the Tower. The new addition will span over the existing Central Boiler Plant but will not obscure the north-west corner of the Tower; thus the addition will remain visually sympathetic to the strong vertical mass of the Tower. As result of these design principles, the project will be consistent with the Preservation and Development Plan.

3.3 DESIGN RESPONSE

The architecture of the Sert Complex has been the defining visual characteristic of Boston University from the date of its completion. Sert's notion begins with a heavy central mass, visually anchoring the complex next to the School of Theology and the Marsh Chapel. The Tower's verticality remains the signature structure of the Charles River Campus. Interestingly, the Pappas and Mugar libraries are more deliberately horizontal in nature and in contrast to the Tower, appear to float above the ground on a single-story glazed window wall.

The proposed design will faithfully rehabilitate most of Sert's original tower while taking deliberate design measures within Sert's design vocabulary to make the existing buildings more acceptable to the 21st century needs of its inhabitants. The new addition will be located within the site plan, in accordance with the guidelines of the Preservation and Development Plan. The height of the new building addition, as well as the placement of its

façade elements derive from an analysis, outlined in the Preservation and Development Plan, of the unique qualities of Sert's design.

3.4 SUSTAINABLE DESIGN

3.4.1 SUSTAINABLE DESIGN PRINCIPLES

The project is pursuing LEED certification under the LEED NC 2.2 rating system with a target goal of LEED Gold certification. At a minimum, the building will achieve LEED Certification. The LEED checklist included here demonstrates the project is working toward 41 LEED points, which solidly places the building in LEED Gold range (see Figures 3-14 and 3-15, LEED Checklist).

Sustainable Sites

The building is located in a dense, urban environment, which is beneficial for attaining the majority of site related credits. Proximity to mass transportation, absence of new parking, abundant bicycle storage, and services available within walking distance serve to discourage the building users' reliance on automobile use.

Water Efficiency

Potable water conservation will be accomplished through judicious landscape design and plumbing fixture selection. The landscape design will place an emphasis on native and adapted plants that should require minimal irrigation. Where irrigation is required, a high-efficiency system will be utilized to minimize water loss to evaporation and run-off. High-efficiency and low-flow plumbing fixtures will be employed to realize a 30% savings in potable water when compared with baseline fixtures as outlined by the Energy Policy Act of 1992 Standards for Plumbing Fixture and Water Usage.

Energy and Atmosphere

The building design incorporates strategic energy conservation measures in order to achieve a targeted energy savings of 20% better than ASHRAE 90.1-2007. A particular emphasis will be placed on a tight building with a high performance envelope. This includes well-insulated walls and glazing properties exceeding ASHRAE 90.1 guidelines. Lighting contributes significantly to the overall energy consumption, and therefore Lighting Power Densities will be reduced throughout the project. Daylight controls and occupancy sensors will be used wherever applicable. Demand control ventilation will be implemented as suitable such as in high-occupancy areas, and premium-efficiency motors will be used for all electric motor driven equipment. Commissioning will be performed to verify systems are operating as designed, and no CFCs will be used in the building as it is connected to a CFC-free Central Boiler Plant.

Materials and Resources

Preference will be given to durable, sustainable materials with a minimal carbon footprint. The design team will specify rapidly renewable materials sourced locally and with recycled content wherever possible. Recycling collection has been located on each floor. A centralized storage location will be located on a lower level of the building. The University recycling program requires only paper to be separate while all other recyclables are collected co-mingled. A minimum 75% of all construction waste generated will be diverted from landfills by being recycled or salvaged.

Indoor Environmental Quality

Indoor environmental quality addresses occupant comfort and air quality as well as the sound design practices which support these goals. An Indoor Air Quality Management Plan will be implemented during construction in order to provide a clean, dry building with minimal residual particulate matter. The design team will specify low VOC materials for interior adhesives, sealants, paints, coatings, flooring systems, and wood products, which will enhance the air quality. Occupant thermal comfort will be designed as per ASHRAE 55, and individual lighting control will be included throughout the project.

3.4.2 ARTICLE 37 GREEN BUILDINGS

The City of Boston's Article 37 requires all projects over 50,000 sf to meet LEED Certified Standards by either certifying the project or demonstrating the project is "certifiable." The School of Law project will meet this requirement, and is anticipated to achieve LEED Gold Certification. A LEED-AP consultant is on the project team and is guiding the project through the LEED process.

3.5 PUBLIC REALM

The opportunity finally exists to create a true public realm at the south entry to the School of Law Tower connecting the Mugar Plaza and Marsh Chapel Plaza to east and west. The School of Law Courtyard, an original part of the Sert Master Plan, has never functioned as originally envisioned, has been extensively modified, and is mostly devoid of use by the Boston University public. The walkway along the north side of the School of Theology, while heavily utilized by students is not a designed space and lacks adequate paving, pedestrian amenities, and planting. Delivery vehicles are frequently in conflict with pedestrian uses of the walkways. A new entry to the Tower is envisioned with a glass enclosed "winter garden" to be used by the Boston University community in general and by the School of Law in particular. The connection of the Tower to the ground on the south side will remain fully visible through the three-story high glass walls, as will the highly articulated west façade of the Pappas Law Library. The new design for the public realm will visually and physically connect all five buildings in this complex in a very powerful and responsive manner.

Boston University
BOSTON, MASSACHUSETTS

Figure 3-1
Sert Complex
source: Bing, 2010

Boston University
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Figure 3-2
School of Law First Floor Plan
source: Bruner/Cott & Associates, Inc., 2012

Boston University
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Figure 3-3
School of Law Second Floor Plan
source: Bruner/Cott & Associates, Inc., 2012

Boston University
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Figure 3-4
School of Law Third Floor Plan
source: Bruner/Cott & Associates, Inc., 2012

Boston University
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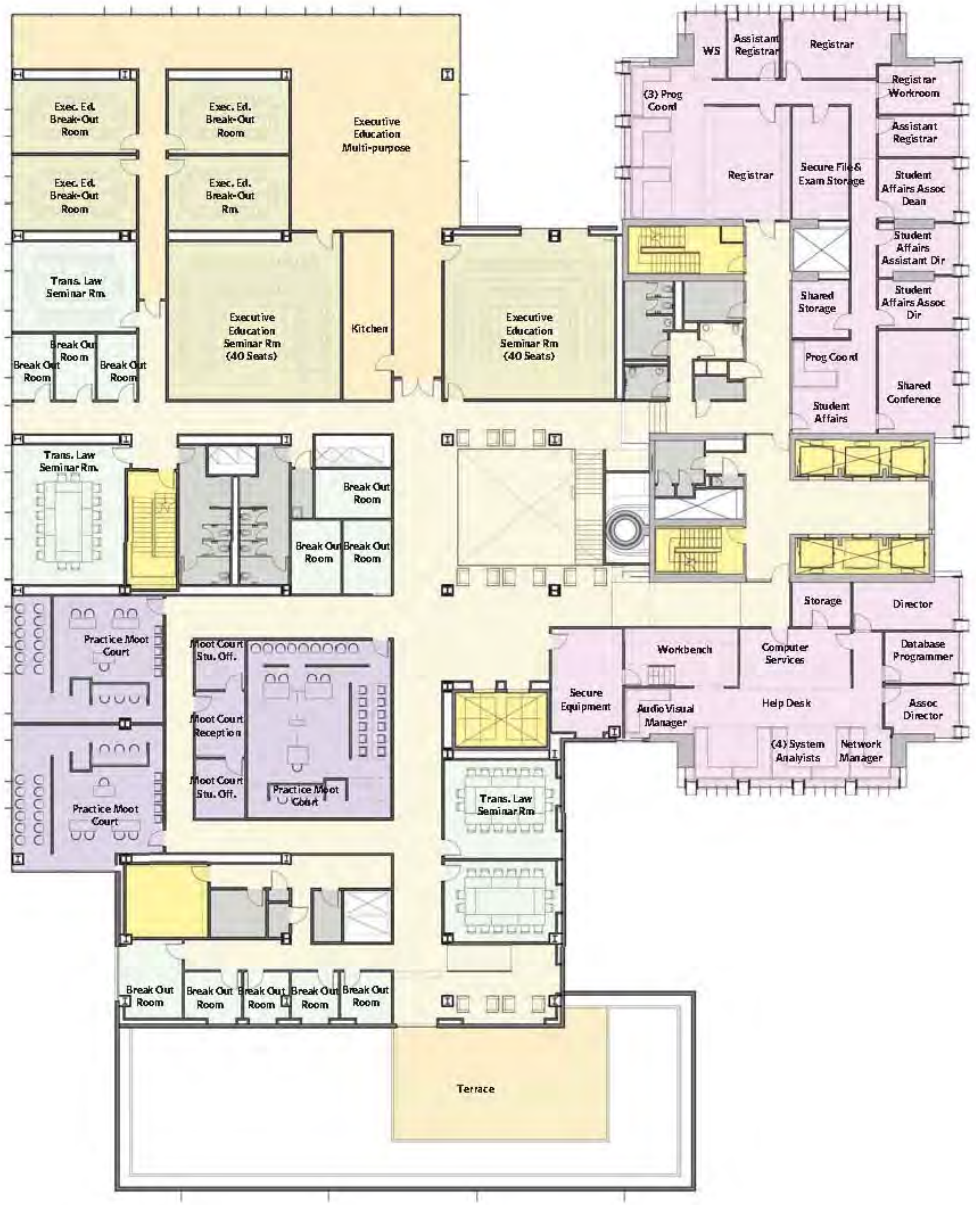
Figure 3-5
School of Law Fourth Floor Plan
source: Bruner/Cott & Associates, Inc., 2012



Boston University
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Figure 3-6
School of Law Fifth Floor Plan
source: Bruner/Cott & Associates, Inc., 2012

Level 6

Level 7

Boston University
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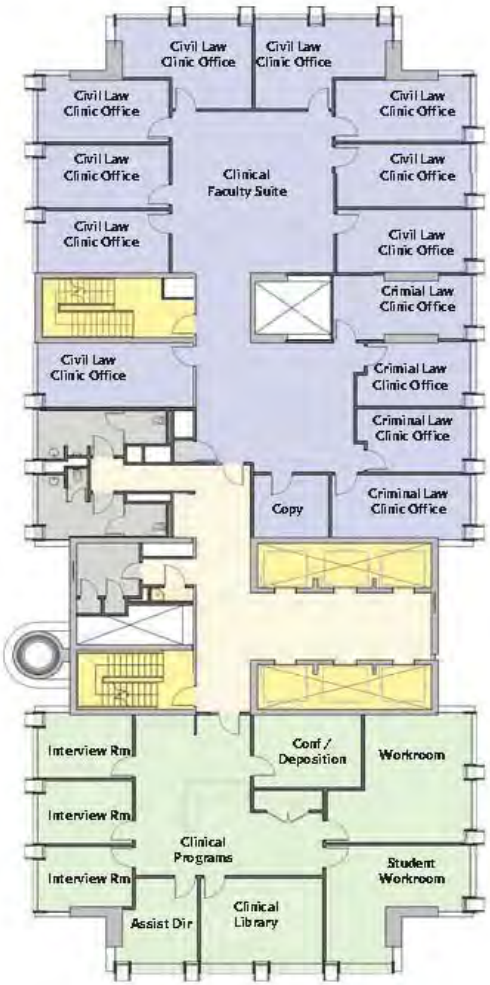
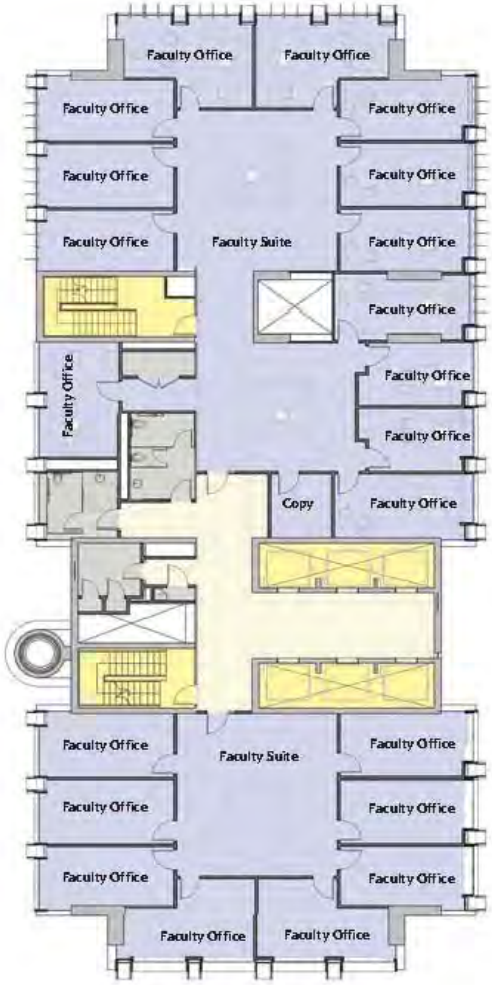
Figure 3-7
School of Law Sixth and Seventh Level Floor Plans
source: Bruner/Cott & Associates, Inc., 2012



Level 13



Level 14

Boston University
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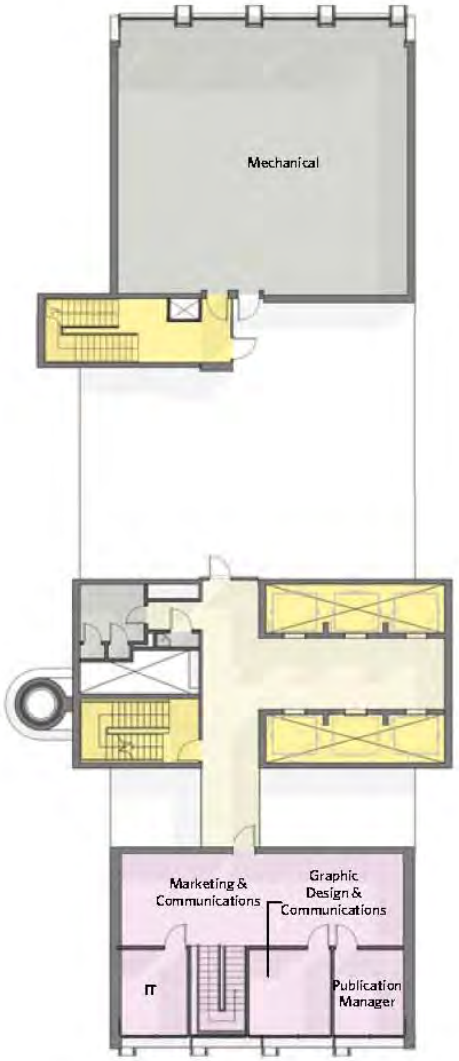
Figure 3-8
School of Law Typical Upper Level Plans
source: Bruner/Cott & Associates, Inc., 2012

Floor 17



Floor 18

Figure 3-9
School of Law - Floor Levels 17 and 18
source: Bruner/Cott & Associates, Inc., 2012

Boston University
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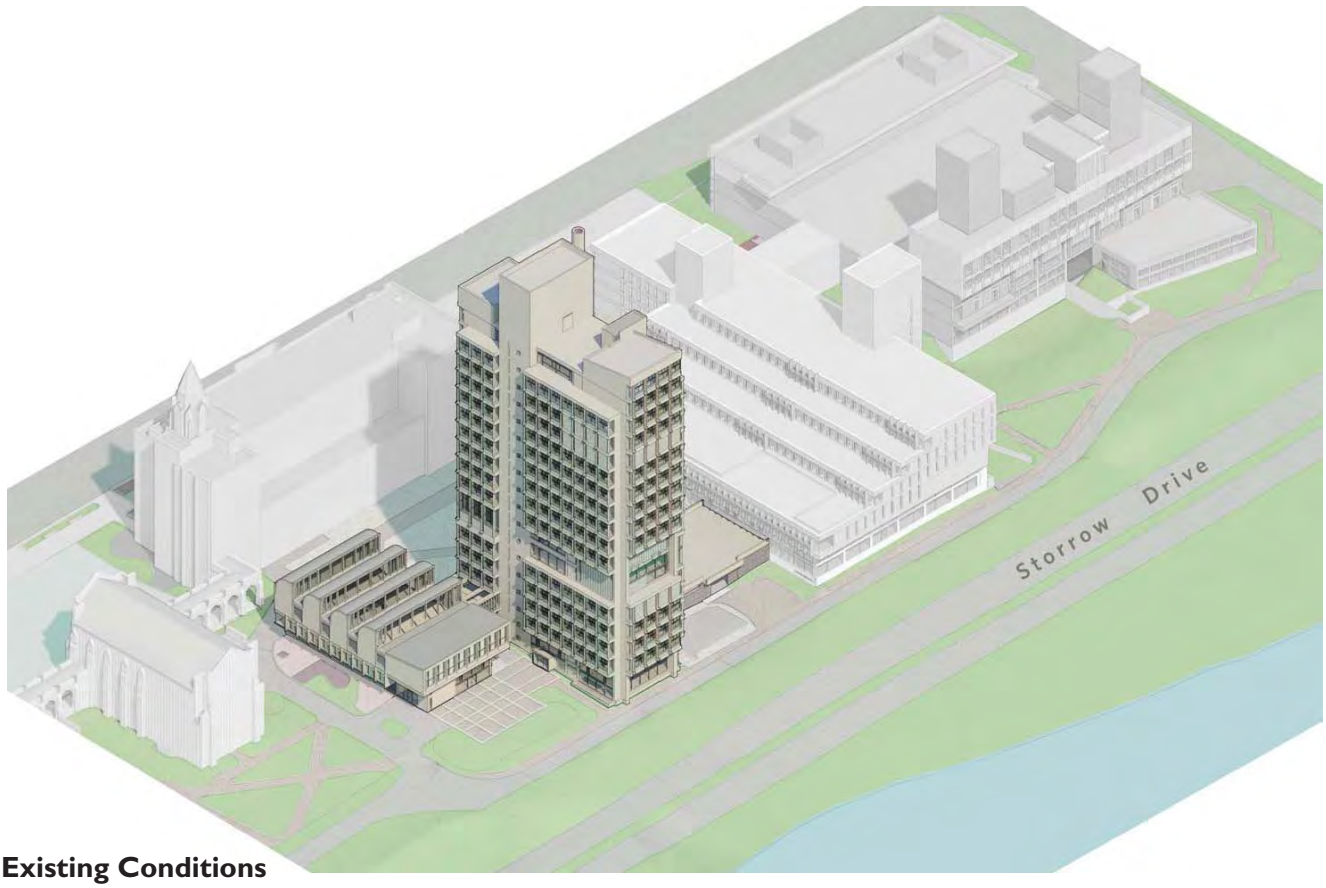
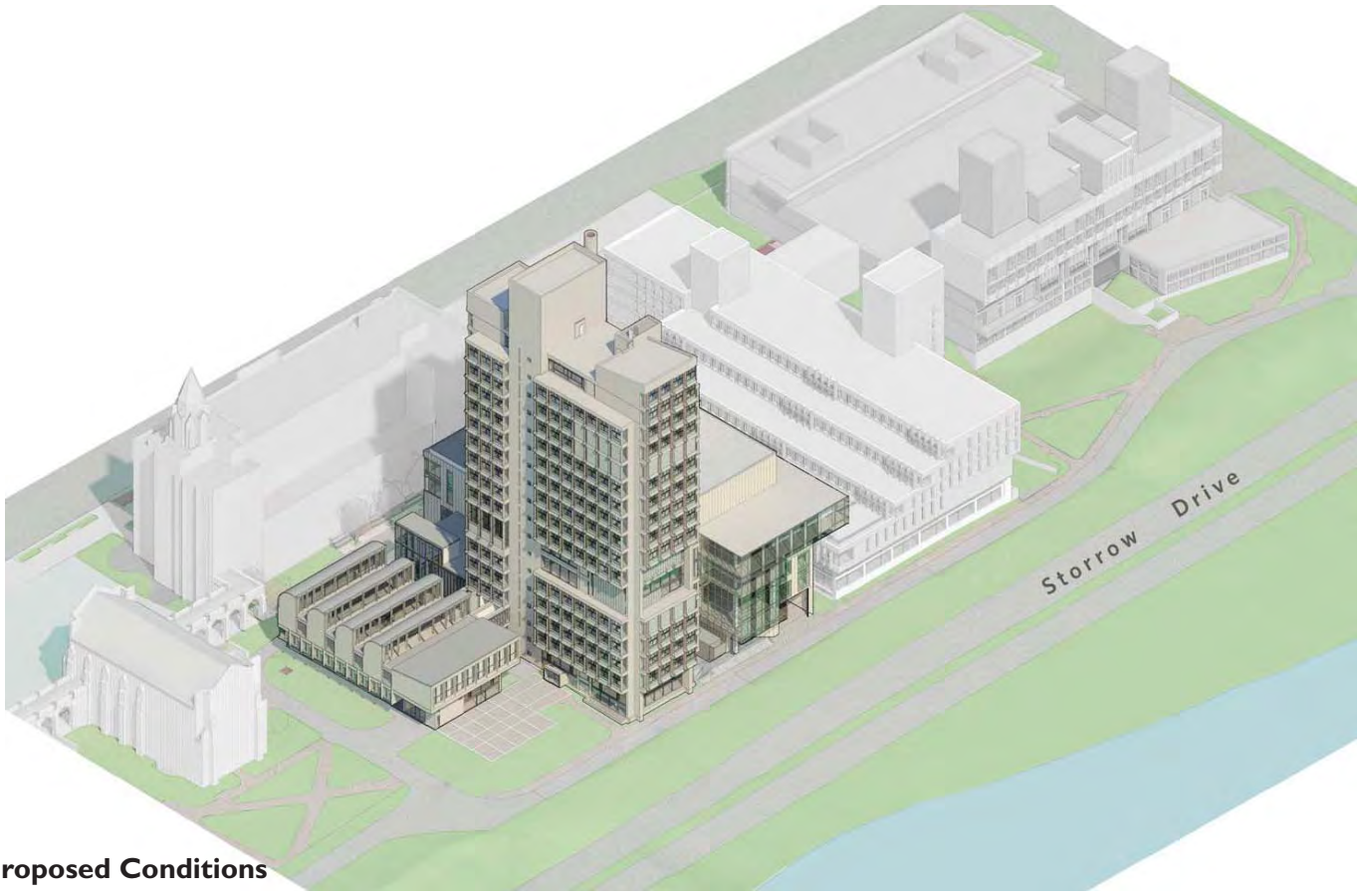
Figure 3-10
School of Law North Elevation
source: Bruner Cott & Assciates, 2012

Boston University
BOSTON, MASSACHUSETTS

Figure 3-11
School of Law South Elevation
source: Bruner Cott & Associates, Inc., 2012



Existing Conditions



Proposed Conditions

Boston University
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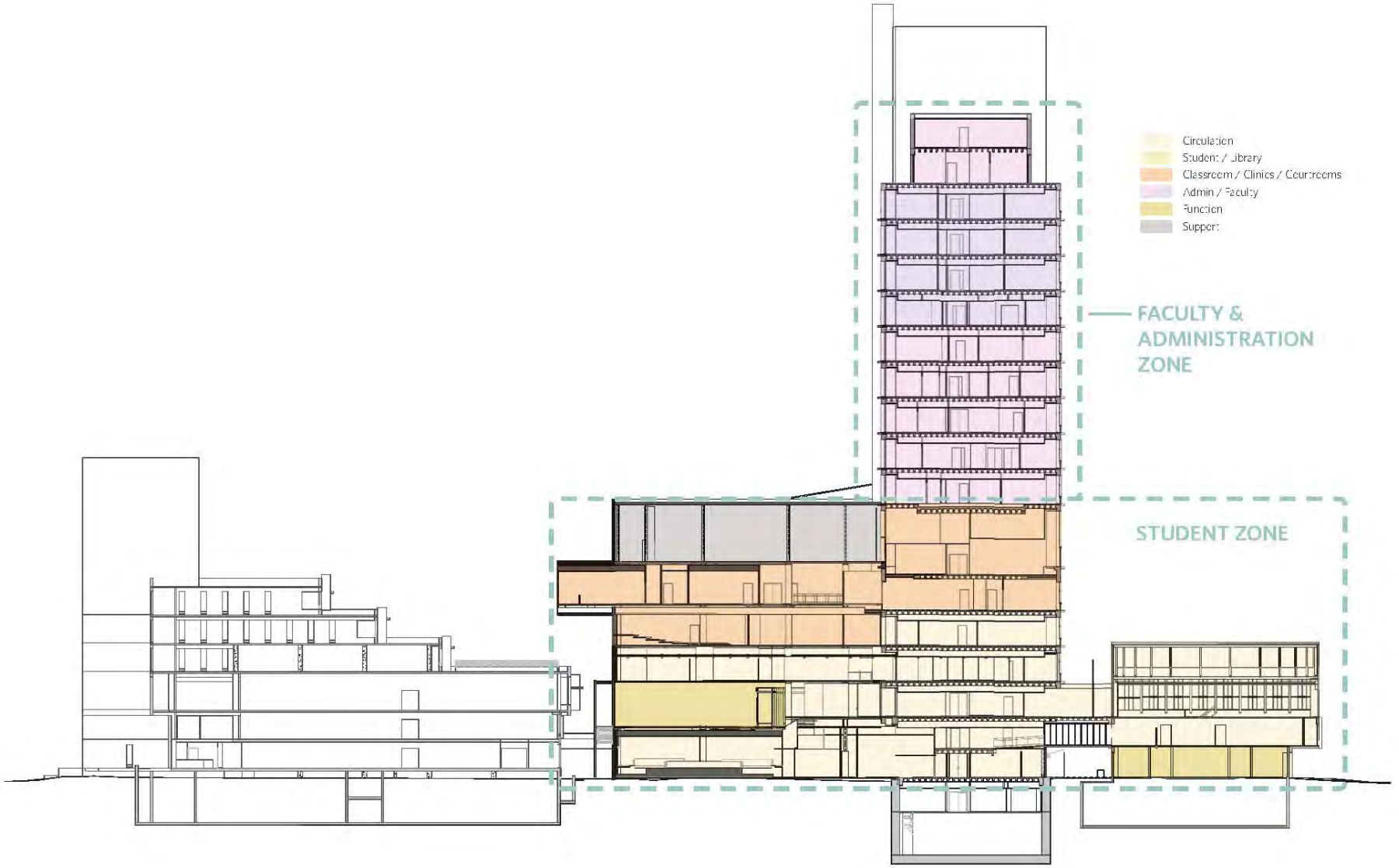
Figure 3-12
Southwest Perspective - Existing and Proposed
source: Bruner/Cott & Associates, 2012



Boston University
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Figure 3-13
School of Law West-East Section
source: Bruner Cott & Associates, Inc., 2012

LEED for New Construction v2.2
Registered Project Checklist

Project Name:
Project Address:

Yes	?	No			
7	5	2	**Sustainable Sites**		14 Points
Y			Prereq 1	**Construction Activity Pollution Prevention**	Required
1			Credit 1	**Site Selection**	1
1			Credit 2	**Development Density & Community Connectivity**	1
	1		Credit 3	**Brownfield Redevelopment**	1
1			Credit 4.1	**Alternative Transportation**, Public Transportation Access	1
1			Credit 4.2	**Alternative Transportation**, Bicycle Storage & Changing Rooms	1
	1		Credit 4.3	**Alternative Transportation**, Low-Emitting & Fuel-Efficient Vehicles	1
1			Credit 4.4	**Alternative Transportation**, Parking Capacity	1
		1	Credit 5.1	**Site Development,** Protect or Restore Habitat	1
	1		Credit 5.2	**Site Development,** Maximize Open Space	1
1			Credit 6.1	**Stormwater Design,** Quantity Control	1
	1		Credit 6.2	**Stormwater Design,** Quality Control	1
	1		Credit 7.1	**Heat Island Effect,** Non-Roof	1
1			Credit 7.2	**Heat Island Effect,** Roof	1
		1	Credit 8	**Light Pollution Reduction**	1

Yes	?	No			
3		2	**Water Efficiency**		5 Points
1			Credit 1.1	**Water Efficient Landscaping**, Reduce by 50%	1
		1	Credit 1.2	**Water Efficient Landscaping**, No Potable Use or No Irrigation	1
		1	Credit 2	**Innovative Wastewater Technologies**	1
1			Credit 3.1	**Water Use Reduction**, 20% Reduction	1
1			Credit 3.2	**Water Use Reduction**, 30% Reduction	1

7	4	6	**Energy & Atmosphere**		17 Points
Y			Prereq 1	**Fundamental Commissioning of the Building Energy Systems**	Required
Y			Prereq 2	**Minimum Energy Performance**	Required
Y			Prereq 3	**Fundamental Refrigerant Management**	Required
*Note for EAc1: All LEED for New Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points under EAc1.					
5	2	3	Credit 1	**Optimize Energy Performance**	1 to 10
				10.5% New Buildings or 3.5% Existing Building Renovations	1
				14% New Buildings or 7% Existing Building Renovations	2
				17.5% New Buildings or 10.5% Existing Building Renovations	3
				21% New Buildings or 14% Existing Building Renovations	4
				24.5% New Buildings or 17.5% Existing Building Renovations	5
				28% New Buildings or 21% Existing Building Renovations	6
				31.5% New Buildings or 24.5% Existing Building Renovations	7
				35% New Buildings or 28% Existing Building Renovations	8
				38.5% New Buildings or 31.5% Existing Building Renovations	9
				42% New Buildings or 35% Existing Building Renovations	10
		3	Credit 2	**On-Site Renewable Energy**	1 to 3
				2.5% Renewable Energy	1
				7.5% Renewable Energy	2
				12.5% Renewable Energy	3
1			Credit 3	**Enhanced Commissioning**	1
	1		Credit 4	**Enhanced Refrigerant Management**	1
1			Credit 5	**Measurement & Verification**	1
	1		Credit 6	**Green Power**	1

continued...

Boston University
BOSTON, MASSACHUSETTS

Figure 3-14
LEED Checklist
source: Bruner/Cott & Associates

Yes	?	No			
7	2	4	**Materials & Resources**		13 Points
Y			Prereq 1	**Storage & Collection of Recyclables**	Required
1			Credit 1.1	**Building Reuse**, Maintain 75% of Existing Walls, Floors & Roof	1
1			Credit 1.2	**Building Reuse**, Maintain 95% of Existing Walls, Floors & Roof	1
		1	Credit 1.3	**Building Reuse**, Maintain 50% of Interior Non-Structural Elements	1
1			Credit 2.1	**Construction Waste Management**, Divert 50% from Disposal	1
1			Credit 2.2	**Construction Waste Management**, Divert 75% from Disposal	1
		1	Credit 3.1	**Materials Reuse**, 5%	1
		1	Credit 3.2	**Materials Reuse**,10%	1
1			Credit 4.1	**Recycled Content**, 10% (post-consumer + ½ pre-consumer)	1
	1		Credit 4.2	**Recycled Content**, 20% (post-consumer + ½ pre-consumer)	1
1			Credit 5.1	**Regional Materials**, 10% Extracted, Processed & Manufactured Regional	1
	1		Credit 5.2	**Regional Materials**, 20% Extracted, Processed & Manufactured Regional	1
		1	Credit 6	**Rapidly Renewable Materials**	1
1			Credit 7	**Certified Wood**	1

Yes	?	No			
13	2		**Indoor Environmental Quality**		15 Points
Y			Prereq 1	**Minimum IAQ Performance**	Required
Y			Prereq 2	**Environmental Tobacco Smoke** (ETS) **Control**	Required
1			Credit 1	**Outdoor Air Delivery Monitoring**	1
1			Credit 2	**Increased Ventilation**	1
1			Credit 3.1	**Construction IAQ Management Plan**, During Construction	1
1			Credit 3.2	**Construction IAQ Management Plan**, Before Occupancy	1
1			Credit 4.1	**Low-Emitting Materials**, Adhesives & Sealants	1
1			Credit 4.2	**Low-Emitting Materials**, Paints & Coatings	1
1			Credit 4.3	**Low-Emitting Materials**, Carpet Systems	1
1			Credit 4.4	**Low-Emitting Materials**, Composite Wood & Agrifiber Products	1
1			Credit 5	**Indoor Chemical & Pollutant Source Control**	1
1			Credit 6.1	**Controllability of Systems**, Lighting	1
1			Credit 6.2	**Controllability of Systems**, Thermal Comfort	1
1			Credit 7.1	**Thermal Comfort**, Design	1
1			Credit 7.2	**Thermal Comfort**, Verification	1
	1		Credit 8.1	**Daylight & Views**, Daylight 75% of Spaces	1
	1		Credit 8.2	**Daylight & Views**, Views for 90% of Spaces	1

Yes	?	No			
4	1		**Innovation & Design Process**		5 Points
1			Credit 1.1	**Innovation in Design**: TBD (ex: Public Education)	1
1			Credit 1.2	**Innovation in Design**: TBD (ex: Exemplary Performance WEc3)	1
1			Credit 1.3	**Innovation in Design**: TBD (ex: Green Cleaning)	1
	1		Credit 1.4	**Innovation in Design**: TBD (ex: Exemplary Performance MRc2)	1
1			Credit 2	**LEED® Accredited Professional**	1

Yes	?	No		
41	14	14	**Project Totals** (pre-certification estimates)	69 Points

Certified: 26-32 points, **Silver:** 33-38 points, **Gold:** 39-51 points, **Platinum:** 52-69 points

Figure 3-15
LEED Checklist (cont.)
source: Bruner/Cott & Associates

Chapter 4

Historic Resources

4.0 HISTORIC RESOURCES

The project will involve modifications to four buildings in an ensemble designed by Josep Lluis Sert and built for Boston University in the early 1960s: the School of Law (& Education) Tower, Pappas Law Library, Mugar Memorial Library, and the Central Boiler Plant. The work will also involve the construction of a substantial addition in the courtyard formed by these buildings, also known as the Law School Courtyard. The Sert Complex (757-775 Commonwealth Avenue) within BU's central campus consists of five buildings and two landscaped areas, all of which are documented in the Inventory of Historic Assets of the Commonwealth.

The proposed project site is located between Storrow Drive and Commonwealth Avenue, to the northwest of the School of Theology and Marsh Chapel. The latter two structures are part of the original Charles River Campus that was designed by Cram and Ferguson and by Coolidge, Shepley, Bulfinch & Abbott, and built between 1939 and 1948. Speare Hall is a two-story wing (755 Commonwealth Avenue), of the School of Theology.

4.1 HISTORIC STRUCTURES AND DISTRICTS

No historic designations currently apply to the project site. Figure 4-1, Historic Resources, shows the following designated historic resources in the vicinity of the Project.

National Register:

- Charles River Basin Historic District
- Cottage Farm Historic District (Brookline)

State Register:

- Charles River Basin Historic District
- Cottage Farm Historic District (Brookline)
- Bay State Road/Back Bay West Architectural Conservation District (eligible for the National Register)

Local Historic Districts:

- Cottage Farm Historic District (Brookline)
- Bay State Road/Back Bay West Architectural Conservation District (eligible for the National Register).

4.2 BOSTON UNIVERSITY HISTORIC PRESERVATION PLAN

Boston University completed a Charles River Campus Historic Preservation Plan[1] in December 2005. This preservation plan identified and evaluated over 300 buildings on the Charles River Campus. The document identifies seven geographic areas of preservation concern, one of which is the Sert Complex at 757-775 Commonwealth Avenue.

Overall, the 2005 preservation plan recognized the positive contributions the University has made to the preservation of its historic buildings. The plan also observed that the Sert buildings typically exhibit significant ongoing maintenance problems related to their many experimental construction techniques and to inflexible structural systems that make reuse difficult. The School of Law Tower in particular was cited for its immovable structural elements that make use of the interior spaces inefficient, and for its relatively small floor plate, which impedes the Law School's present curriculum and related teaching activities. Low elevator capacity for conveying faculty and students to and from large classrooms high in the tower has also been an operational problem and expanding the elevator bank within the existing building is impracticable. Within the tower, it can take fifteen minutes for the Dean of the School of Law to travel from her office to the classroom where she lectures.

The landscape around the Sert complex varies in compatibility with the original architectural design and intent. There are also significant variations in both the original quality of design and the architectural integrity of the building elevations that enclose courtyards and major pedestrian pathways. The Mugar Memorial Library forecourt retains a reduced version of the grid of trees that was present in the original plan, while other courtyard spaces are now anomalous in spirit and materials. Although relatively small in size, the open spaces were intended to help relieve the imposing scale and density of uses in the surrounding high-rise buildings, in accordance with 20th century Modernist theory. Sert called these “sector spaces” and wrote about them as an important urban design feature at a smaller scale than “campus spaces”, such as the Marsh Chapel forecourt facing Commonwealth Avenue.

4.3 SERT COMPLEX

As described in the 2005 Boston University Preservation Plan, the high-style Sert complex contains five buildings designed by Sert, including the Central Boiler Plant, School of Law Tower, the Pappas Law Library Building, Mugar Memorial Library, and the George Sherman Union and Link, a one-story interior connector between the Mugar Memorial Library and the George Sherman Union, all built in the early 1960s (see Figure 4-2, Oblique View of the Sert Complex). The courtyards in front of the Pappas Law Library Building and Mugar Memorial Library were part of Sert's master plan, but their current layouts and plantings no longer represent his original landscaping design.

[1] Candace Jenkins, Wendy Frontiero, and Fort Point Associates, Inc., 2005.

The Sert complex is distinguished as a rare grouping of significant works by a single, internationally-known architect. It is also an outstanding, cohesive example of Mid-20th Century Modern campus design. These buildings are highly sophisticated in their interplay of form, materials, and details, and in the interaction between interior and exterior space. Although the ensemble is slightly less than 50 years old, its exceptional architectural importance was noted as meriting consideration for the National Register.

The five modernist buildings in this complex are part of a master plan for Boston University that was developed by the firm of Josep Lluis Sert in the late 1950s. This plan reoriented the University's Commonwealth Avenue campus towards the Charles River, and provided a high-style, modern architectural focus for the University. The five buildings share a common architectural vocabulary, employed in variegated compositions that synthesize function and abstract form.

All five buildings are constructed of architectural concrete with flat roofs, a variety of cantilevered building forms, shaped roof-lines, and a mix of glazing, in-situ and precast concrete, brick, and metal as structure, vent panels, and window frames. The School of Law Tower, Mugar Memorial Library, and the Central Boiler Plant buildings are largely intact and generally well-preserved. The Pappas Law Library has lost its fenestration, including Sert's subdivision of openings, color, and proportions. An interior rooftop courtyard at the George Sherman Union has been roofed over because of chronic snow and water problems and has had some of its balcony levels enclosed with greenhouse structures. The Mugar Memorial Library had a minor modification with the addition of a stairways and entrance to the southeast corner in 1982.

Influenced by his one-time employer, LeCorbusier, Josep Lluis Sert (1902-1983) was a leading exponent of the International Style movement and was himself highly influential in the United States as dean of the Harvard Graduate School of Design. Born in Barcelona, he emigrated to the U.S. in 1939. Among his international projects were notable buildings in Spain, France, Belgium, and Iran. Locally, the firm of Sert, Jackson & Gourley designed a number of significant buildings for Harvard in the 1950s and 60s, including the Peabody Terrace Married Student Housing complex on Memorial Drive, Holyoke Center at Harvard Square, and the Science Center on Oxford Street.

4.3.1 SCHOOL OF LAW BUILDING – *THE LAW TOWER*

Completed in 1964, the building originally housed both the School of Law, on the lower half of the building, and School of Education on the upper half. The Law School moved here from its original location on Beacon Hill, as part of the post-World War II consolidation of the Boston University campus. The School of Education relocated in 1980 and the School of Law expanded to the upper portion of the Tower.

The 18-story tower serves as the School of Law's main academic and administrative building and is animated by an asymmetrical arrangement of window modules, solid wall sections, extensive cantilevered bays of windows, and articulation of wall planes at both large and small scales. The Tower's two-story base is recessed behind the face of the upper floors, and contains two major entrances on the east facade and south elevation, both two-stories high with glass curtain walls. The School of Law Tower has lost a number of its original exterior elements; the brises-soleil on the south side have been removed, and the glazing at the top floor of the south façade is not original.

Sert's Law Tower composition carried strong vertical emphases through its elevations at different scales, with a continuous background of in-situ concrete stair and elevator towers, chimney and re-entrant structural corners framing a projected field of precast concrete fins and scuppers that, in turn, articulate arrays of steel windows and operable, opaque ventilation panels. The projected fields that are so prominent visually are separated into blocks by recessed two-story precast areas on the façade. These indentations relate to heights and horizontal alignments of adjacent buildings and figure strongly in the overall composition of the four Sert buildings when viewed from the north. The proposed changes within the Law Tower will benefit from replacement of some of the flat precast panel zones within the façade such as those on the fourteenth and fifteenth floors, by glazing to allow natural light and views outward by day and to activate the dark east and north tower facades at night time.

The Law Tower forms a commanding presence on the Charles River skyline. Sert placed its main entrance at the northeast corner of the Law Tower engaging the entrance lobby of the Pappas Law Library and the large ground-level auditorium that is used by academic departments beyond the School of Law. These entrance locations are not consistent with the primary circulation patterns in this area of the campus, which would favor placement on the buildings' south sides.

4.3.2 LAW SCHOOL COURTYARD

The small, rectangular Law School Courtyard is defined by large-scale University buildings on its perimeter, including the Law School building, the Pappas Law Library, Mugar Memorial Library, and the north face of the School of Theology building. This open space is connected by footpaths to the Mugar Memorial Library forecourt and to the open space behind Marsh Chapel. Asphalt footpaths cut across the courtyard. The Sert office designed a concrete and steel stair to connect the courtyard level to a terrace on the roof of the Central Boiler Plant that once provided a separate entrance to the School of Education. With the School of Law being the sole occupant of the Law Tower, the terrace entrance and stair to the courtyard below are redundant.

A 1963 site plan prepared by Sert shows the space between the Law School building and the Cram and Ferguson academic block at 745-755 Commonwealth Avenue occupied by a rectangular courtyard asymmetrically planted with four rows of seven trees.

4.3.3 LAW LIBRARY (PAPPAS LAW LIBRARY)

Built in 1964, the Law School Library building is a modestly-scaled, three-story structure with cantilevered upper floors at the east and north elevations. Fenestration consists of large plate-glass windows, and the roofline is distinguished by four rows of north-facing clerestories in scoop-shaped concrete vaults designed as quadrants of circles with identical radii. The main entrance only serves a 500 seat auditorium and is contained in a two-story high, glass curtain wall with colorful vent panels on the north facade. Vertical concrete fins and concrete and brick panels articulate the walls although Sert's design was compromised when their windows were replaced. The only access to the Pappas Law Library is by a walkway at the third floor level connects with the Law Tower to the west. This walkway is enclosed in screens of vertical precast concrete fins and fixed, full-height glazing.

4.3.4 MUGAR MEMORIAL LIBRARY

Mugar Memorial Library, constructed in 1966, consists of a large six-story high block on the west side, with a smaller volume to the east that steps up from three to six stories. On the east side, the third floor is cantilevered above a two-story high base. Fenestration consists of large plate-glass windows at the lower floors and narrow vertical windows at the upper floors. Prominent brises-soleil on the south and east elevations are composed of thin, projecting vertical concrete fins that are much deeper than their precast counterparts on the Law Tower. The original main entrance is located on the south facade, within a two-story high window-wall that leads directly into the Link, an indoor connection to the George Sherman Union, and then passed into the main portion of the Library. A secondary entrance that was added in 1982 is located in a one-story, rectangular, concrete volume at the southeast corner of the building and is elevated above the Law School Courtyard. Library access from the Link closed with the opening of this secondary entrance.

Described as "the intellectual center of the university," Mugar Memorial Library consolidated nine separate libraries previously spread across the university campus. Among its holdings is the Special Collections of the Chenery Library, housing many internationally important collections of manuscripts and objects.

4.3.5 MUGAR MEMORIAL LIBRARY COURTYARD

The Mugar Memorial Library courtyard forms a forecourt to the University's main library, prominently facing Commonwealth Avenue. This open space is defined by

Mugar Memorial Library, Commonwealth Avenue, the George Sherman Union, and Speare Hall (the lower west wing of the School of Theology building). It is connected by a paved pathway to the Law School Courtyard and to the cloistered steps that connect to Marsh Chapel and the Chapel's paved open space fronting Commonwealth Avenue.

This small, level open space is paved with brick. Two rows of four trees each are aligned with the building. A small grassy area is located on the west side adjacent to the Student Union. Benches line the sides of the space. Raised concrete planting beds containing evergreen shrubs alternate with street trees along Commonwealth Avenue. A 1963 site plan prepared by Sert shows the forecourt densely planted with three rows, each with three trees. The present configuration appears to be at variance with the original design. The present design dates to ca. 1990.

4.3.6 CENTRAL BOILER PLANT

Constructed in 1962, the Central Boiler Plant is a one-story structure with brick walls on its south and north elevations. Spanning between the Law School Tower and Mugar Memorial Library, the building has an active roof-top terrace. Functional elements such as the exhaust stack and intake structure were designed as sculptural features that enliven the composition and are part of the Tower's architecture.

4.4 BRUNER/COTT'S PRESERVATION AND DEVELOPMENT PLAN FOR THE SERT COMPLEX

In 2007, after preliminary discussions with the Boston Redevelopment Authority about expansion strategies surrounding the Law School Tower, Boston University commissioned a Preservation and Development Plan for that portion of the Charles River Campus that was planned and designed by Josep Lluis Sert. Bruner/Cott & Associates produced the planning study report in May 2008, with the specific objective of setting guidelines for alterations to the central campus where Sert's urban design ideas were realized through the construction of the Law Tower, the Pappas Law Library, the Mugar Memorial Library, and the George Sherman Union with their associated courtyards and circulation routes.

At a general level, the guidelines put forward in the plan seek consistency with the Secretary of the Interior's Standards for Rehabilitation (published in 1977 and revised in 1990) wherever changes are proposed to the exterior appearance of the buildings and their landscape setting. The planning study explored opportunities for Boston University to expand its teaching and social space within the central campus with comparisons of possible additional square footage at different locations and an assessment of the architectural constraints that would help protect the significant architectural elements among Sert's buildings. The University's programming and expansion analyses indicated

that approximately 100,000 square feet should be added to the School of Law with a strong need for fifteen to twenty large classroom spaces, most of which should not rely upon elevator access except for people who use wheelchairs.

The Preservation and Development Plan focused on three types of change where preservation principles would apply to changes at Sert's buildings:

1. Exterior Architecture: alterations to the exterior appearance of individual buildings,
2. Urban Design: alterations to the formal composition of the central campus as an assemblage of interrelated buildings, and
3. Historic Landscape: changes to open spaces and courtyards of the central campus with associated changes in circulation patterns.

For example, in terms of the first category, Exterior Architecture — if windows are replaced, the replacements should look the same as Sert's original windows. Sert's carefully orchestrated palette of colors should be retained, and colors should go where he put them. Concrete and brick repairs should match adjacent surfaces. Near the buildings, paving patterns and materials should follow the visual and textural framework set by the original.

Urban Design, the second category, requires that new construction altering the overall composition of the building group must not destroy significant visual characteristics of the original collection. Its design should be compatible with the original. In most instances this means that new buildings should be forthrightly contemporary in their treatment, but that massing and placement should recognize and complement the existing arrangement of neighboring buildings. For example, the north face of the Law Tower should always be seen as an uninterrupted vertical statement from its roof to the ground. Equally, Sert's plan arrangement of buildings that advance towards the River (towers) and step back towards the School of Theology in varied ways, and the stepped roof line of the Mugar Memorial Library should not be lost.

Historic Landscape, the third category, is more complicated to interpret in urban settings and it is often easier to negotiate changes to the outdoor spaces between buildings than to larger, park-like landscapes. A consistent and convincing approach to this category is very important to the expansion strategies for the central campus as a whole, especially because of the great sweep of lawn facing the Charles River behind Marsh Chapel. This tranquil riverfront space may represent the psychological heart of the University, although it is a marginal element in the pattern of circulation and outdoor activity compared to the two paved courtyards that face Commonwealth Avenue. The courtyards that open toward the river contain some contradictory aspects. They are important sources of natural light and long views. They create the syncopation of Sert's building masses in the campus plan. However, they face north and are generally not used except as circulation spaces. Each of these landscape elements can and should be rethought and improved. This should be possible while enhancing the campus as a whole.

The University and the School of Law in particular, is faced with the need for major changes to the Sert Complex. In concert with other construction, the University should take a proactive, historically rigorous reconstruction and restoration approach to repairs and replacement initiatives with individual buildings — especially their windows and architectural concrete. It need not add significant cost to the alterations, although it is sure to replace some recent installations. Technical improvements should be conceived as though Josep Lluis Sert were directing the work with the best materials and advisors who are available today at his disposal.

The Law School Tower, the Pappas Law Library, the George Sherman Union, and the Mugar Memorial Library all represent serious constraints to expansion. It is the conclusion of the Preservation and Development Plan that opportunities for expansion do exist within this complex, and that they can coexist with Sert's buildings—but additional buildings will require respectful composition to complement the originals. It will not be possible to design serious expansion successfully in these tight settings without first understanding the rationale and architectural value of Sert's work for the University or their technical and operational deficiencies.

Boston University and Bruner/Cott & Associates met with the Boston Redevelopment Authority's urban design staff on March 7, 2011 to present those aspects of the Preservation and Development Plan that are immediately relevant to the Law School Tower, the Pappas Law Library, and their associated outdoor spaces.

4.5 GUIDELINES FOR PRESERVATION AND EXPANSION

This section provides the urban design, architecture, and reconstruction guidelines for preservation and reconstruction of the Sert portion of the Boston University Campus.

Urban Design

- Maintain each building's vertical continuity from ground to roof line on their main elevations.
- Retain staggered building lines along the north campus boundary preserving the existing plan relationships among Sert's buildings.
- Retain the Law Tower's dominant presence in terms of relative building height and northernmost projection on the site.
- Maintain the visual continuity among cantilevered floors in the complex, especially when viewed from afar.
- Retain the variety of heights in the interrelated massing of the buildings and the service towers that animate their roof lines.

- Do not add stories or alter the roof lines of the four main buildings in ways that destroy the original stepped alignments, curved roof monitors, or hierarchy of heights.

Architecture

- Conform to the *Secretary of the Interior's Standards for Rehabilitation*.
- Retain the appearance of original materials and details (precast and in situ concrete finishes, colored vent panels, brick infill, window and door frames, stairs, and paving).
- Retain the existing dimensions, subdivision patterns, and visual relationships in and among window openings, entrances, and precast panels.
- Replace ruined concrete, steel and other exterior elements in kind with careful conformance to all visual attributes of the original.
- New buildings should be compatible visually, but not seek to replicate the design of the original Sert structures.

Reconstruction

- Reinstate the original glazing patterns and colors at the Pappas Law Library. (The technical solution may be entirely different from the original.)
- Consider reopening roof terraces at Mugar Library.
- Reinstate neutral paving pattern on the roof of the Central Boiler Plant.

4.6 PROPOSED ALTERATIONS TO THE SERT COMPLEX FOR THE SCHOOL OF LAW EXPANSION

The University has studied possible relocation sites and strategies for expansion while rehabilitating and restoring the Law Tower for more than a decade. A series of detailed programming analyses indicated that approximately 93,525 square feet of additional space would be required if the Law Tower and Pappas Law Library continued to be occupied by the School of Law. Bruner/Cott's 2008 Preservation and Development Plan explored four ways to add space to the Law Tower, two of which proposed major excavation and infill for classrooms and related uses at the Law School Courtyard. Currently, the University's plan is to proceed with a version of courtyard infill scheme that places large classrooms on two stories utilizing stairs for vertical access—an entrance level that is continuous with the existing Law Tower and Pappas Law Library grade and one floor up. The design spans the low Central Boiler Plant with four *additional* floors for expansion of the Pappas Law Library, social space, administrative suites for offices with frequent student contact, smaller classrooms, and space to house mechanical equipment.

The proposed addition is immediately adjacent to the Mugar Memorial Library, but the massing and architectural detail of the library will not be altered except for the removal of an entrance vestibule added in the 1980s and the repair of the façade at that location. The

roof terrace at the Central Boiler Plant will be covered by construction of the new addition. The Central Boiler Plant roof will no longer be necessary as it will be covered by the new addition. The open space provided by the Law School Courtyard will be reduced and partially internalized as the proposed addition will include a two-story glazed entrance space rising from a paved forecourt formed on one side by the west façade of the Pappas Law Library. The glazed entrance space will be transparent. Pedestrians passing the addition will be able to see the south face of Sert's tower meet the ground.

Attachment of the addition to the west elevation of Sert's Law Tower has been conceived architecturally as a deeply recessed connector that meets continuous vertical surfaces of cast-in-place concrete. The concrete chimney from the Central Boiler Plant will pass through the addition and remain visible above the lower roof line of the addition as it rises to the tower roof.

A new glazed connector between the new law library in the addition and the stacks in the Pappas Law Library will be immediately beneath Sert's existing bridge that links the tower to the second floor of the library. Outdoor pedestrian passage will continue alongside the west face of Pappas and under the new bridge connector.

Materials and detailed architectural treatment of the new addition's elevations remain to be determined, but the design intent at this schematic stage is for a visually compatible curtain wall system with tall windows that will not mimic the physical solutions in Sert's buildings, but will use similar proportions to provide compatible adjacencies. It is also important to note that the buff limestone wall of the School of Theology and Speare Hall is part of the enclosure system of this "Sector Space" and will influence the choice of materials for the Law School addition.

4.7 HISTORIC RESOURCES PROXIMATE TO THE SERT COMPLEX

4.7.1 SCHOOL OF THEOLOGY BUILDING AND SPEARE HALL

This academic block consists of the School of Theology Building, a large six-story building at 745 Commonwealth Avenue (1947-48), and Speare Hall, a two-story wing at 755 Commonwealth Avenue that serves as administrative offices for Metropolitan College. Both structures are clad in buff colored Indiana limestone and culminate in flat roofs. The School of Theology building rises from a two-story base to a middle section with recessed window bays framed by triangular piers; its top floor features punched windows in a flat masonry wall. Like the other buildings in the original central academic campus, it is heavily ornamented with abstracted Gothic motifs and features operable multi-paned steel sash and decorative metal spandrels. The School of Theology building is appropriately located adjacent to Marsh Chapel. More

modestly embellished, Speare Hall is distinguished by its paired, pointed-arch window bays, which also contain steel window sash and ornamental metal spandrels.

The two structures at 745-755 Commonwealth Avenue are part of five academic blocks built between 1938 and 1948 as part of an ambitious master plan for Boston University's new Charles River Campus. These academic buildings east and west of Marsh Plaza along Commonwealth Avenue (now known as the College of Arts and Sciences and the School of Theology) were originally conceived as the southern edge of a series of interconnecting quadrangles between Commonwealth Avenue and the Charles River, along a waterfront park.

The design was developed by the renowned architectural firm of Cram and Ferguson, and eventually completed by Coolidge, Shepley, Bulfinch & Abbott. Cram and Ferguson was a national leader in the late Gothic Revival movement of the early 20th century, and the firm was known for its high profile works for religious and educational institutions around the country. Coolidge, Shepley, Bulfinch & Abbott — successor to the office of H.H. Richardson — was also highly regarded for its institutional work, along with train stations and office and commercial buildings.

As a whole, the five Cram and Ferguson buildings along Commonwealth Avenue form an excellent example of academic design in the mid-20th century, and are intact and very well-preserved. The complex forms the heart of the university's Charles River Campus, and is significant to the development not only of Boston University, but also of downtown Boston.

4.7.2 BAY STATE ROAD / BACK BAY WEST ARCHITECTURAL CONSERVATION DISTRICT

The project site is approximately 600 feet from the west end of the Bay State Road/Back Bay West Architectural Conservation District (BSR/BBW ACD). The BSR/BBW ACD is a local historic district that was designated in 1978. It is centered on the spine of Bay State Road. According to a district study report, the BSR/BBWACD is a visually cohesive grouping of buildings united by their three-bay, attached row house form, red brick exteriors, three to five-story height, well-detailed historical revival styling, and common lot sizes and setbacks along tree-lined streets. Primarily distinguished for its architectural quality, the BSR/BBW ACD is also significant for its historic associations with individuals and institutions, including several prominent medical clinics.

4.7.3 CHARLES RIVER BASIN HISTORIC DISTRICT

The north side of the project site (along the private way) is adjacent to the Charles River Basin Historic District. This District was designated in the National Register in 1978. Although the project site directly abuts this District, it is separated by a steep

embankment and Storrow Drive, which run parallel to the site. A pedestrian bridge runs from the site near the Law Tower over Storrow Drive to the Charles River Esplanade, which extends along the Charles River.

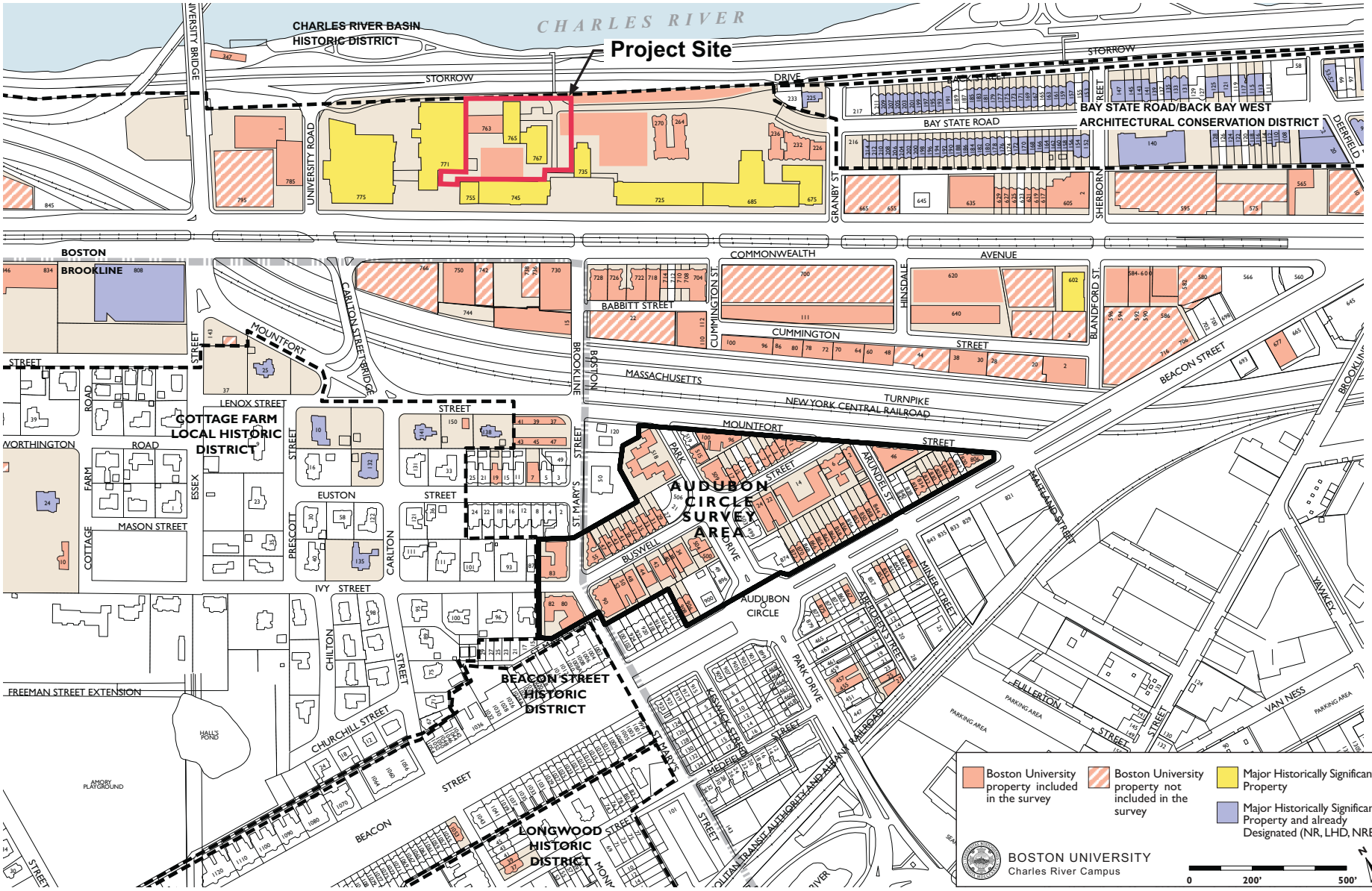
4.8 CONCLUSIONS

The proposed Law School renovations and building addition will not impact the designated historic districts in the vicinity due to the small scale of the renovations (at the level of repairs to the existing building envelope) and the new addition's relatively low heights, its location behind the west façade of Sert's Law Tower, and considerable distance from nearby historic districts.

The proposed addition, extending from Mugar Memorial Library to the School of Law Tower, will occupy approximately half of the existing open space in that location. The new design will construct a paved forecourt on the south façade of the Law Tower and its new main entrance with a fully glazed "winter garden"— a double-height space that is planned to serve as an entrance lobby to both the Law Tower and the new addition while providing seating space that faces Pappas Law Library, the new entrance forecourt, and the north façade of the School of Theology.

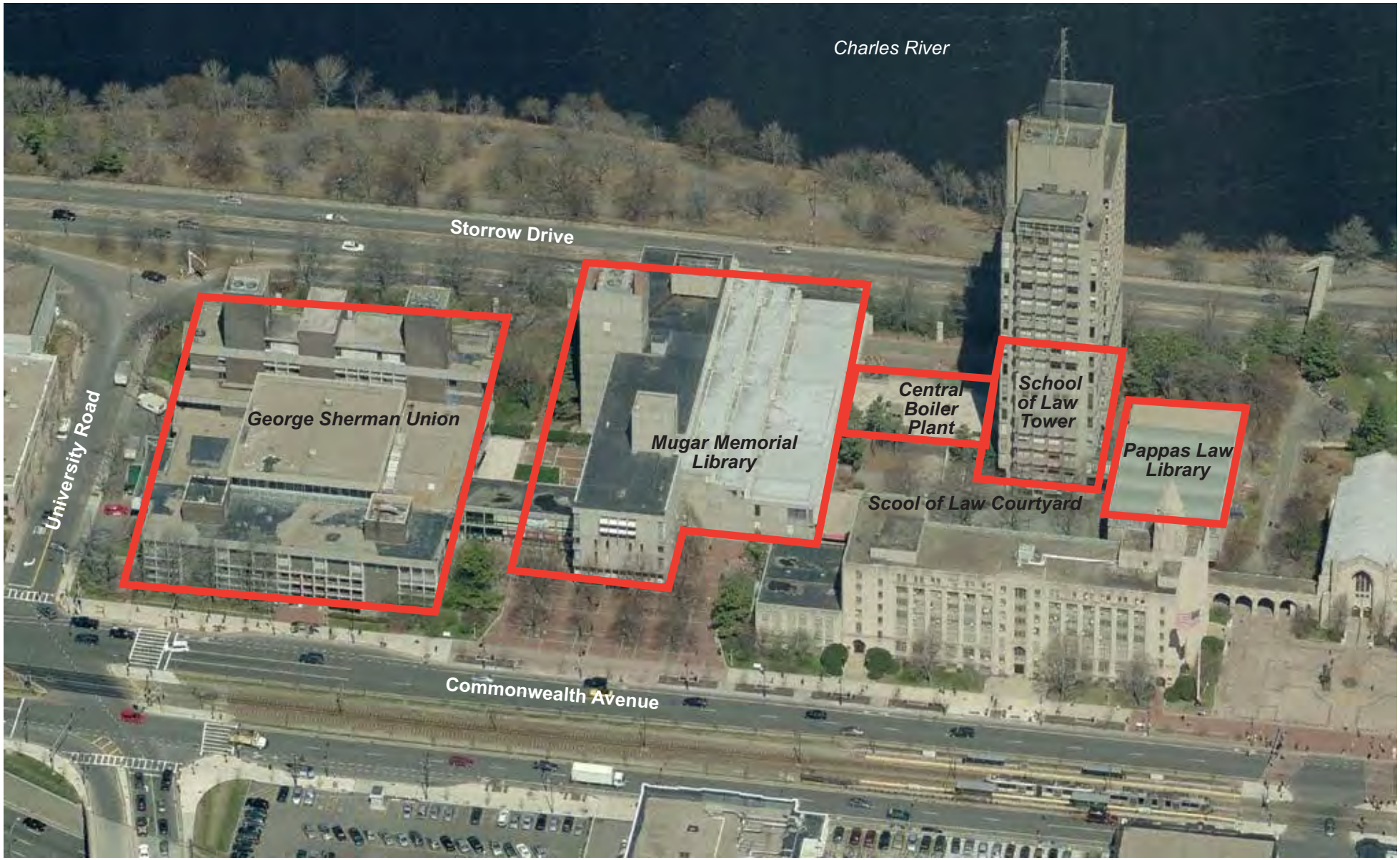
The present appearance of this courtyard open space represents neither Cram and Ferguson's original site design nor Sert's courtyard design in his master plan for the central campus. New construction in the courtyard will introduce a new formality and emphasize the west elevation of Sert's Pappas Law Library. It will provide an architectural setting for the most-frequented entrance to the Law School at the south face of the Law Tower terminating pedestrian desire lines from the Marsh Chapel and Mugar forecourts on Commonwealth Avenue and from the link to the George Sherman Union.

Changes in height and materials on the south end of the proposed addition defer to the six-story School of Theology building, which it will face across a broad, landscaped walkway. The panels of the proposed addition will loosely echo the limestone sheathing of both the Theology building and Speare Hall rather than replicate the surface appearance of Sert's concrete, brick, and granite envelope treatments at the Law Tower, the Pappas Law Library, and Mugar Memorial Library.



Boston University
BOSTON, MASSACHUSETTS

Figure 4-1
Historic Resources
Source: *BU Historic Preservation Plan, 2005*



Boston University
BOSTON, MASSACHUSETTS

Figure 4-2
Oblique View of the Sert Complex
source: Bing, 2010

Chapter 5

Transportation

5.0 TRANSPORTATION

5.1 INTRODUCTION

The School of Law building is located south of Storrow Drive along George D. Hart Way, which is a private way extension of Bay State Road between Granby Street and University Road. To the east of the School of Law Building is an existing surface parking lot that is owned and operated by the University (the College of Arts and Sciences (CAS) Lot, located to the rear of 685 Commonwealth Avenue). Other landmarks in the vicinity of the School of Law building are the Mugar Memorial Library (to the west), the School of Theology and Commonwealth Avenue (to the south) and the School of Social Work and the Marsh Chapel (both to the east).

5.2 SITE ACCESS

George D. Hart Way is a private road that provides access to the CAS surface lot and the service bays at the Central Boiler Plant/School of Law and the Mugar Memorial Library and loading areas at the other University facilities in this area of the Charles River Campus. The University employs gate devices at the westerly end of George D. Hart Way at University Road to control (restrict) through travel. From Granby Street to the CAS Lot Bay State Road functions as a two-way facility. West of the CAS Lot, George D. Hart Way is used by service, maintenance and other official Boston University vehicles. The roadway narrows to a single lane with turnouts to allow for two way travel.

When construction/rehabilitation of the School of Law is completed, site access will be restored to the existing conditions, i.e., no significant alteration in vehicular access is anticipated to result from this project. In the future, deliveries to the site will occur as they do today, accessing George D. Hart Way from University Road.

5.3 PARKING

Currently, there is a limited number of University parking spaces (seven) located within the project limits and are scattered at several locations within the School of Law site. When the project is completed, these spaces will be removed as part of the site improvements in order to enhance the pedestrian experience. As noted above, the existing CAS surface parking lot (Lot J) serves the School of Law and other Boston University facilities in the area. In addition to the CAS lot and the spaces located on-site, there are also a small number of parking spaces located in the vicinity of Bay State Road and George D. Hart Way. In total there are 168 spaces located in the immediate vicinity of the site, which will be reduced to

approximately 144 spaces when construction of the Admissions Reception Center begins (starting in 2012).

The University controls parking at the CAS lot (and all of its lots) through a Parking Permit plan that is administered by the Parking & Transportation Services Office. Colored permits are issued to faculty, staff and students that allow them to park in designated lots throughout the CRC in lots where that permit is allowed. At the CAS Lot for example, parking is allowed for those who have Green (Faculty/Staff Daytime) or Brown (Faculty/Staff Overnight) parking permits. The University does not provide assigned parking spaces to the vast majority of its faculty or staff. University-issued permits allow the holders to park in designated parking facilities provided there is availability. If a particular lot is full, then the permit holder must find another facility with available parking.

No change in the existing parking capacity at the CAS Lot is proposed when the School of Law project is completed.

5.4 NON-VEHICULAR MODES

5.4.1 PEDESTRIAN

There are many pedestrian paths and walkways in and around the School of Law facility. Many students walk along George D. Hart Way between University Road and the CAS Lot because of its restricted use by vehicles. The existing pedestrian bridge near the northeast corner of the School of Law building provides access over Storrow Drive to the Charles River Esplanade as well.

During each phase of construction, portions of the project site will be fenced off to create a safe work zone, and pedestrians will be re-routed to avoid the work zone.

Existing pedestrian connections and circulation will be restored when the proposed project is completed. Certain pedestrian areas will be enhanced through landscape architectural improvements, most notably the walkway along the east side of the facility, between the School of Law building and the School of Theology.

5.4.2 BICYCLE

Existing bicycle access at the project site is similar to the pedestrian facilities. Due to the low vehicular volumes along this portion of Bay State Road, bicyclists are able to use the facility fairly freely. Bicyclists also regularly traverse through the courtyard and plaza areas in this part of campus, sharing the facilities with pedestrians.

Similar to the pedestrian mode, there will be some minor impacts on bicyclists during some phases of construction (i.e., re-routing around work zones). However, when the

project is completed bicycle connections/circulation will be restored to existing conditions. The project will also provide bicycle storage (i.e., bike racks) on site. Capacity for approximately 60 to 75 bicycles is planned. If more bicycle storage is needed in the future, the University's standing practice is to add the necessary storage for the convenience users in order to protect landscaping elements (trees or street furniture) from being damaged when used as a bicycle rack.

5.4.3 PUBLIC TRANSPORTATION

The School of Law site is well served by public transportation. The facility is located approximately 300 feet from Commonwealth Avenue and the MBTA Green Line Reservation. There is a Green Line stop (BU Central) located at the intersection of Commonwealth Avenue and St. Mary's Street. There are also inbound and outbound bus stops at this intersection for the Route 57 bus.

Because of the proximity of the MBTA stations, it is convenient for students, faculty and staff at the School of Law to use public transportation instead of driving to travel to/from the facility. Indeed, public transportation use at Boston University has increased substantially since the first Campus Master Plan was published in 1997. In 2008, as part of the Boston University Ride Share Report filed with MassDEP, transit use on the CRC was measured at approximately 40 percent (for daily commuters, not students living on campus). In 1997 that use was approximately 15 percent.

Because the proposed project will not provide any additional parking at the CRC, it is not expected to negatively affect the historic trend of increased transit use on the campus (or within the Law School community).

5.5 LOADING AND SERVICES

Currently, the School of Law building is serviced by a loading dock area located on the north side of the Central Boiler Plant building adjacent to the Mugar Memorial Library facility. This loading/service area is accessed by entering from both University Road and Bay State Road with all service vehicles exiting via Bay State Road to Granby Street.

The proposed facility will be serviced in a similar manner as in the existing conditions. The loading dock/service area will remain in the same location, and the facilities will be upgraded. A total of three service bays will be provided: two loading docks for deliveries and a trash compactor bay for waste removal. Vehicles servicing the building via Bay State Road will enter and exit the loading dock area as they do today.

5.6 TRANSPORTATION DEMAND MANAGEMENT

It is anticipated that the project will have minimal impacts on the area's transportation infrastructure network. The overall use at the School of Law will increase minimally. Faculty, staff, and students who drive, walk, bike, or take public transportation to the existing site are expected to do so in similar proportion after completion of the facility's rehabilitation project. No parking is proposed as part of this project, thus traffic increases are not anticipated. Proximity to the MBTA's Green Line trolley service and the provision of bicycle storage on the site helps to promote the use of non-vehicular modes to travel to and from the School of Law facilities.

5.7 RELATIONSHIP TO TRANSPORTATION MASTER PLAN

The current School of Law site includes seven parking spaces, which will be removed as part of the project site improvements. No new parking is proposed to be constructed as part of this project. Primary modes of access to the site will continue to be pedestrian, bicycle, and transit. Users who drive will park at existing University parking facilities. This approach is consistent with the goals of Boston University's 2003 – 2010 Transportation Master Plan (recently extended to 2012) to promoting non-vehicular modes of transportation within the Charles River Campus. One of the measures employed by the University to meet this goal is to limit the number of new parking spaces constructed within the campus.

Chapter 6

Environmental

6.0 ENVIRONMENTAL PROTECTION COMPONENT

The redevelopment of Boston University School of Law buildings will substantially improve the environmental qualities of the site. Article 80 of the Boston Zoning Code specifies that the BRA may require the proponent, in its Scoping Determination, to study the direct and indirect environmental impacts attributable to the project. When the potential for impacts exist, design measures may be required to mitigate the impacts to the extent feasible. This section describes the proposed project and its potential impacts regarding wind, shadow, daylight, solar glare, air quality, noise, stormwater management and water quality, geotechnical, groundwater recharge, solid and hazardous materials, and construction impacts and plans. Furthermore, the development proposed on the site will be built in full compliance with applicable design guidelines and environmental regulations.

6.1 WIND

The proposed project to rehabilitate the existing 18-story tower does not create any pedestrian-level impacts. Under the existing conditions, there are no known pedestrian level wind impacts that need to be addressed, and in particular, at locations near between the tower and adjacent buildings. The moderate size and scale of the proposed 5-story addition in the context of the existing 18-story tower and adjacent buildings within the Boston University Charles River Campus is not expected to result in adverse wind impacts at the pedestrian level adjacent to, and in the vicinity of, the project site. It is expected that additional massing will attenuate wind impacts at the ground level. If the project is scoped for a wind study, however, the proponent will provide one as part of the Draft Project Impact Report.

6.2 SHADOW

A shadow study was prepared to evaluate the potential shadow impact of the Project for existing and build conditions. Specific times during the year were evaluated and include the spring (March 21), summer (June 21), fall (September 23), and winter (December 22) months during the morning (9:00 AM), midday (12:00 Noon), and afternoon (3:00 PM) periods. Early evening (6:00 PM) shadow impacts were evaluated for the summer and fall. The results of the shadow analysis are graphically illustrated in Figure 6-1, Shadow Analysis: March 21, 9 am and 12 pm through Figure 6-8, Shadow Analysis: December 22, 3 pm. The existing shadow is shown in light grey and new shadow is shown as dark grey.

The shadow study assumes bright sunlight from sunrise to sunset. Landscaping (i.e. trees) is not considered as part of these shadow simulations, and therefore, the shadow patterns identified are those created by the various building masses.

For the spring season (March 21), the new shadows in the morning (9:00 AM) fall on the existing building on the west side of the proposed addition. At noon, the shadows shift toward the north and extend over a small portion of Storrow Drive. By mid-afternoon (3:00 PM), the new shadow falls along Storrow Drive. No shadow falls onto the Charles River Esplanade during these times.

During the summer months (June 21), there is little new shadow. In the morning, some shadow falls on the adjacent building on the west side. At noon, the shadow is confined to the site along the private way on the north side of the School of Law complex. In mid-afternoon, shadow extends to the private way. In the early evening (6:00 PM), the shadow falls within the School of Law complex. No shadow falls on the Charles River Esplanade during these times.

During the fall (September 23), the shadows are essentially the same as those described above for the spring, except they are shifted by one hour due to the difference in daylight savings time. During the early evening in the fall, there is no net impact on shadow.

During the winter (December 22) when the sun is low in the sky, the shadow impacts extend further from the building. In the morning, the only new shadow is a relatively thin section cast over the open space of the Charles River Esplanade. At noon, shadow is cast across Storrow Drive onto the Charles River Esplanade. In the mid-afternoon, a relatively small shadow is cast on the Charles River Esplanade with a larger portion onto the open waters of the Charles River. Again, no shadow falls on the Charles River Esplanade during these times.

In general, the design and massing of the new addition is well suited to minimizing new shadow impacts beyond the Boston University property. Because the proposed 5-story addition will be between the School of Law Tower (18 stories) and the Mugar Memorial Library (6 stories), the new addition will add a relatively small shadow area to the existing shadows that currently fall on the public open space.

6.3 DAYLIGHT

The purpose of the daylight analysis is to estimate the extent that a proposed project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of a project site. It measures the amount of daylight reaching the nearest street or public way of the existing and proposed building conditions and is based on the building massing. The daylight analysis for the project usually considers the no-build and build

conditions. Storrow Drive is the only public way in the vicinity of the site that may be impacted. The net change in daylight obstruction from this public way is expected to be minor due to the size of existing structures and their distance from Storrow Drive, which include the 3-story Pappas Law Library, the 18-story School of Law tower, the one-story Central Boiler Plant, and the 6-story Mugar Memorial Library, and the proposed five-story addition between the tower and the Mugar Memorial Library.

6.4 SOLAR GLARE

A solar glare analysis is intended to measure potential reflective glare from the proposed addition and renovation onto potentially affected streets, open spaces, and sidewalk areas in order to determine the likelihood of visual impairment or discomfort due to reflective spot glare.

The proposed exterior materials consist of stone-faced prefabricated panels and glass. As a result of the design and use of materials with matte finishes, it is not anticipated that the project will have adverse solar glare impacts or create solar heat buildup in nearby buildings.

6.5 AIR QUALITY

The Executive Office of Energy and Environmental Affairs recently announced a new policy on Greenhouse Gas (GHG) Emissions that requires certain projects undergoing MEPA review quantify their greenhouse gas emissions and identify measures to avoid, minimize, or mitigate these emissions. The policy is intended to ensure that project proponents and reviewers have carefully considered the GHG impact of their projects and taken all feasible means and measures to reduce those impacts.

The project is not expected to adversely impact air quality in the project area. The project will be rehabilitating the interior and exterior of the 18-story tower with new energy–efficient systems including windows, lighting, ventilation, motors and other energy consuming systems, thereby reducing greenhouse gas emissions. The building design incorporates strategic energy conservation measures in order to achieve a targeted energy savings of 20% better than ASHRAE 90.1-2007 guidelines. Since the same number of students and faculty using the facilities, and therefore corresponding vehicle trips are expected to remain the same, there is not expected to be any change in levels of service of surrounding intersections after the project is built.

Heating for the project will be provided by the existing district heating and cooling system, which is located at Central Boiler Plant. This plant currently services 1.7 million square feet in 13 campus buildings, 15% of the Charles River Campus. An upgrade to the five boilers in 2007 has improved their efficiency, and they have sufficient capacity to accommodate

the proposed new addition and upgrades to the existing building. The system was converted from an oil-fired to gas-fired boilers in 2010, providing for a cleaner burning and more energy-efficient system. The new installation allowed the Central Boiler Plant, which used approximately 1.3 million gallons of number 4 heating oil annually, to run on cleaner natural gas. Compared to number 4 heating oil, natural gas has less sulfur, carbon, and nitrogen, and when burned, leaves almost no ash particles, which mitigates greenhouse gas emissions and improves air quality. These projects reduce the University's CO2 emissions by approximately 5,300 metric tons annually, or a 32% reduction from the base year of 2007 (see Table 6-1. Emissions at the Central Boiler Plant). Furthermore, it eliminated the reliance on heating oil at the Central Boiler Plant location. Due to the switch from oil to gas, NO2 emissions were reduced by 85%, SOx by 90%, and CO by 90%..

Table 6-1. Emissions at the Central Boiler Plant

Year	Gas MMCF	Oil Mgal	Total MMBtu	CO2 Metric Tons	NO2
2007 (base year)		1,479.9	216,616	16,309	0.13
2010 (conversion year)	42.4	951.1	182,804	12,795	0.09
2011 (current year)	202.3	0.0	207,985	11,038	0.02

Emergency power will be provided by a 1 megawatt diesel-powered generator located in the mechanical penthouse. This emergency system, which will have appropriate emission controls, is expected to have minimal air quality impacts.

6.6 NOISE

The primary sources of external mechanical noise will include air ventilations systems that are part of the project mechanical systems. It is not anticipated that the rooftop equipment will exceed maximum sound levels. This equipment will be enclosed in a penthouse, which will provide maximum noise mitigation. During the final design of the project, appropriate low-noise mechanical equipment in the mechanical penthouse and noise control measures will be selected for all sensitive locations to ensure compliance with the City of Boston and DEP noise regulations.

6.7 STORMWATER MANAGEMENT AND WATER QUALITY

The Boston University School of Law site has approximately 1.7 acres (74%) of impervious surfaces at the project site. The proposed project will increase this amount by 0.38 acres. Recharge potential for the site is limited due to the underlying soil characteristics and available site area. However, drainage and runoff collection and disposal systems will be designed to minimize impacts on the existing storm sewer systems. The roof runoff from the new addition and the School of Law Tower will be diverted into a groundwater recharge system within the project site. Consistent with the Groundwater Protection Overlay District, this system will be designed to recharge up to a 1-inch runoff event. A pollution prevention plan will be carried out for all stages of construction activity. Mitigation measures will be incorporated into the project design, and an operation and maintenance plan will be prepared to ensure minimal impacts on water quality in the area.

The project will be designed to meet the applicable stormwater performance standards outlined in the Department of Environmental Protection's Stormwater Guidelines (see Section 8.3, Storm Drainage System). In particular, oil/grease traps will be installed in the systems in conformance with the requirements of the Boston Water and Sewer Commission. As a result, the project will improve the water quality of runoff entering the Charles River.

6.8 FEMA FLOOD ZONES AND ACECS

Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) for the City of Boston (Community Panel 25025C0076G, updated September 2009) was reviewed to determine if the project site lies within the 100-year flood plain. The project site falls within a Zone C, defined by FEMA as an "area of minimal flooding." Thus, the project will not lead to an increased flood or storm damage risk.

No Areas of Critical Environmental Concern (ACEC) or State Certified Vernal Pools exist within the site. Likewise, the project site is not included on the list of either Priority Habitats for State-Listed Rare Species or the list of Estimated Habitats for Rare Wildlife.

6.9 GEOTECHNICAL AND GROUNDWATER

6.9.1 GEOTECHNICAL

Based on available test boring information obtained at the site, subsurface soil conditions underlying the proposed building are characterized by the general soil profile identified in Table 6-2 below. The top of rock is approximately 130 feet below grade.

Table 6-2. General Soil Profile

Soil Deposit	Approximate Thickness of Layer (feet)
Fill	5 to 10
Organic Deposits	6 to 12
Glaciofluvial Deposits (Sand)	8 to 15
Marine Clay	80 to 100
Glacial Till	5 – 10

6.9.2 FOUNDATION SUPPORT AND BELOW-GRADE CONSTRUCTION

The site was evaluated with respect to the existing buildings in the area and the subsurface conditions. Foundation design recommendations were developed in consideration of the surrounding buildings and the need to preserve the integrity of these buildings. The proposed addition will be supported on a short pile foundation system such as pressure injected footings (PIFs) that bear in the Glaciofluvial Deposits (sand).

The proposed addition has no basement levels and therefore will not cause the groundwater to raise, pond, or be lowered in the surrounding area. The project will have no long-term groundwater pumping. The proposed foundation systems will not impact the foundations of the existing buildings, which are also supported on PIFs. The foundations of the proposed and existing buildings will bear at similar depths/elevations. This avoids undermining the existing foundations.

6.9.3 EXCAVATION FOR BELOW-GRADE CONSTRUCTION OF ADDITION

The excavation will be limited in depth to approximately 5 (typically) to 7 feet or less in limited areas such as the elevator pits. It is not anticipated that a temporary lateral earth support system will be required to complete the excavation for the foundation system. The excavation will not affect the existing buildings in the area. Since the excavation will be above the groundwater level, temporary construction dewatering will generally not be required.

6.9.4 GEOTECHNICAL INSTRUMENTATION

A geotechnical monitoring program with seismographs to record vibrations during installation of the foundation PIFs will be implemented during construction to ensure vibrations are below specified levels required to preserve the existing structures in the area. An engineer's representative will be on site full time during foundation

installation of the PIF foundations to monitor this activity in accordance with the Building Code requirements.

6.9.5 SOLID AND HAZARDOUS MATERIALS

The project site had three reported releases (RTN 3-0011511, RTN 3-0011800, and RTN 3-0020760) that were reported between 1994 and 2002 according to the MassDEP database. These releases were for fuel oil spills located at or near the underground storage tanks that supplied fuel to the heating system. All submitted a Remedial Action Outcome (RAO) of either Class A1 or A2. This means that remedial work was completed, and a level of "no significant risk" has been achieved at the site. The heating system was converted to natural gas within the past five years, and therefore, no more oil will be delivered to the site except as backup during emergencies.

Information on subsurface conditions near the construction area south of the Tower and west of the Pappas Law Library building was developed during a previous study conducted by GZA in conjunction with the relocation of a steam line in the vicinity of these buildings. A composite soil sample from the 0-10′ depth, including soil collected near the southwest corner and the east side of the Pappas Law Library building, indicated only low levels of metals, petroleum compounds, and semi-volatile organic compounds; all reported concentrations were well below the applicable Massachusetts Contingency Plan reportable concentrations for the most sensitive exposure areas (RCS-1 standards). These levels are typical of the urban fill that underlies much of the Back Bay and do not indicate a more specific release of oil or hazardous material. In addition, no evidence of solid waste disposal was encountered in the steam line study.

In the future, it is planned 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 generate 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 regulatory requirements.

6.10 GROUNDWATER RECHARGE

Because the project falls within the City of Boston Groundwater Conservation Overlay District, the stormwater management system will include a stormwater recharge system designed to comply with Article 32 of the Boston Zoning Code. Article 32 requires that one inch of stormwater over the entire impervious area of the site be recharged into the ground. The project will provide a recharge system as required by Article 32 and the final design will require the approval of the Boston Water & Sewer Commission.

Several groundwater monitoring wells exist at and in the vicinity of the site. Data obtained from these wells indicate the groundwater level is approximately 7 to 8 feet below grade (El. 8 to El. 9 BCB).

Currently, stormwater management on the site consists of approximately 12 catch basins (all connecting to a 96-inch drain. The roof areas of the proposed building and the renovated School of Law Tower will tie into an underground recharge system consisting of underground perforated pipe surrounded by crushed stone. This system will retain runoff from any storm less than 1-inch of runoff depth and will overflow to the 96-inch drain flowing to the Charles River only if the runoff depth is greater than 1-inch. These proposed measures will substantially improve stormwater runoff and water quality from the project site.

6.11 SOLID AND HAZARDOUS MATERIALS

6.11.1 BUILDING RENOVATION

The School of Law Tower will be renovated as part of this project. The exterior building systems will be repaired or replaced as well as all interior components. Prior to renovation, a hazardous and asbestos-containing materials (ACM) survey will be performed on buildings at the site to evaluate the need for special removal procedures. If necessary, licensed abatement contractors will remove and dispose of ACMs, PCB light ballasts, mercury-containing fluorescent bulbs, lead paint, and other hazardous wastes. Proper dust control measures will be exercised.

Solid waste generated by renovation will be collected and disposed off site by a licensed contractor. The project will be designed to allow at-source separation of recyclables, including paper, metal, glass and plastics. The remainder of the materials (plaster, brick, cement concrete,) will be crushed, tested and recycled under the terms of the MassDEP Beneficial Use Determination Permit. Bituminous materials will also be collected and recycled.

Renovation activity must comply with the Solid Waste and Air Quality regulations. According to the Solid Waste provision of M.G.L. Chapter 40, Section 54, a City of Boston building permit or license is required for demolition/renovation at the site. Debris generated from the development will be disposed of at a licensed solid waste disposal facility.

6.11.2 OPERATING AND DISPOSAL PLAN

Hazardous materials collected from the site will be evaluated and classified in accordance with 40 CFR 261 to ensure safe removal and disposal. These materials will be removed by a licensed contractor. Hazardous waste manifests, bills of lading, and other appropriate documentation will be generated in accordance with local, state, and federal regulations.

6.12 CONSTRUCTION IMPACTS AND PLANS

The following section describes impacts likely to result from the project's construction and steps that will be taken to avoid or minimize environmental and transportation-related impacts. The proponent recently employed a construction manager who is responsible for developing a construction phasing and staging plan and for coordinating construction activities with all appropriate regulatory agencies. The project's geotechnical consultant is providing consulting services associated with foundation design recommendations, prepare geotechnical specifications, and review the construction contractor's proposed procedures.

6.12.1 CONSTRUCTION MANAGEMENT PLAN

The proponent will comply with applicable state and local regulations governing construction of the project. The proponent will require that the general contractor comply with the Construction Management Plan (CMP) developed in consultation with and approved by the Boston Transportation Department (BTD) prior to the commencement of construction. The construction manager will be bound by the CMP, which will establish the guidelines for the duration of the project and will include specific mitigation measures and staging plans to minimize impacts on abutters.

Proper pre-construction planning with the neighborhood will be essential to the successful construction of this project. Construction methodologies that will ensure safety will be employed. Signage will include construction manager contact information with emergency contact numbers.

6.12.2 CONSTRUCTION ACTIVITY SCHEDULE

The construction period for the proposed project is expected to last approximately three years, beginning by the fall of 2012 and reaching completion by the fall of 2015. This project will have an accelerated activity schedule with some shift work in the off hours in order to mitigate construction impacts.

The City of Boston Noise and Work Ordinance allows construction from 7:00 AM to 6:00 PM, Monday through Friday, along with any approved exceptions. In order for the project to comply with this ordinance and construct outside of the normal 7:00 am to 6:00 pm weekday hours, the proponent will seek a permit from the Commission of the Inspectional Service Department.

6.12.3 PERIMETER PROTECTION/PUBLIC SAFETY

The CMP will describe any necessary sidewalk closures, pedestrian re-routings, and barrier placements and/or fencing deemed necessary on Boston University property to ensure safety around the site perimeter. Barricades and secure fencing will be used to isolate construction areas from pedestrian traffic. In addition, sidewalk areas and walkways near construction activities will be well marked and lighted to ensure pedestrian safety. The proponent will continue to coordinate with all pertinent regulatory agencies and representatives of the surrounding neighborhoods to ensure they are informed of any changes in construction activities.

6.12.4 CONSTRUCTION TRAFFIC IMPACTS

Potential truck routes have been proposed to minimize traffic impacts (see Figure 6-9, Construction Truck Circulation Plan). Specific truck deliveries and routes will be confirmed with BTD through the CMP.

6.12.5 CONSTRUCTION WORKER PARKING

Measures will be employed during construction to minimize the impact of construction workers on the transportation network. Mitigation measures include:

- No personal vehicles will be allowed to park at the project construction site.
- Jobsite personnel will be encouraged to utilize public transportation. Due to the proximity of the Green Line and the BU Central Station, a substantial level of public transportation use is anticipated by workers.
- Lock-up facilities for work tools will be provided to make public transportation more convenient and desirable for workers.
- Terms and conditions related to workforce parking and public transportation use will be written into each subcontract.

These measures will be incorporated into the Construction Management Plan (CMP) for the project which will be reviewed by the Boston Transportation Department prior to commencement of construction activities.

Should some of the workers choose to drive to the site, there is available parking at off-street commercial parking lots owned by the University; the two closest commercial lots are located at the corner of Commonwealth Avenue and Granby Street, and the corner of Commonwealth Avenue and Deerfield Street. The lots are pay-on-entry facilities and are not currently fully utilized during the week. Because the construction workforce will arrive prior to AM peak traffic period and depart prior to the PM peak period, these trips are not expected to have an appreciable impact on the transportation system.

6.12.6 CONSTRUCTION AIR QUALITY

Construction activities may generate fugitive dust, which will result in a localized increase of airborne particle levels. Fugitive dust emission from construction activities will depend on such factors as the properties of the emitting surface (e.g. moisture content), meteorological variables, and construction practices employed.

To reduce emission of fugitive dust and minimize impacts on the local environment the construction contractor will adhere to a number of strictly enforceable mitigation measures. These measures may include:

- Using wetting agents to control and suppress dust from construction debris;
- Ensuring that all trucks traveling to and from the site will be fully covered;
- Removing construction debris regularly;
- Monitoring construction practices closely to ensure any emissions of dust are negligible;
- Cleaning streets and sidewalks to minimize dust and dirt accumulation; and
- Wheel-washing trucks before they leave the site during the excavation phase.

6.12.7 CONSTRUCTION NOISE IMPACTS

Intermittent increases in noise levels will occur in the short-term during construction. Construction work will comply with the requirements of the City of Boston noise ordinance. Although there are no residential buildings proximate to the site, this issue will be carefully addressed. To reduce the noise impacts of construction, especially if an accelerated schedule is activated, a number of noise mitigation measures will be included in the CMP. Some of the measures that may be taken to ensure a low level of noise emissions include:

- Initiating a proactive program for compliance with the City of Boston's noise limitation impact;

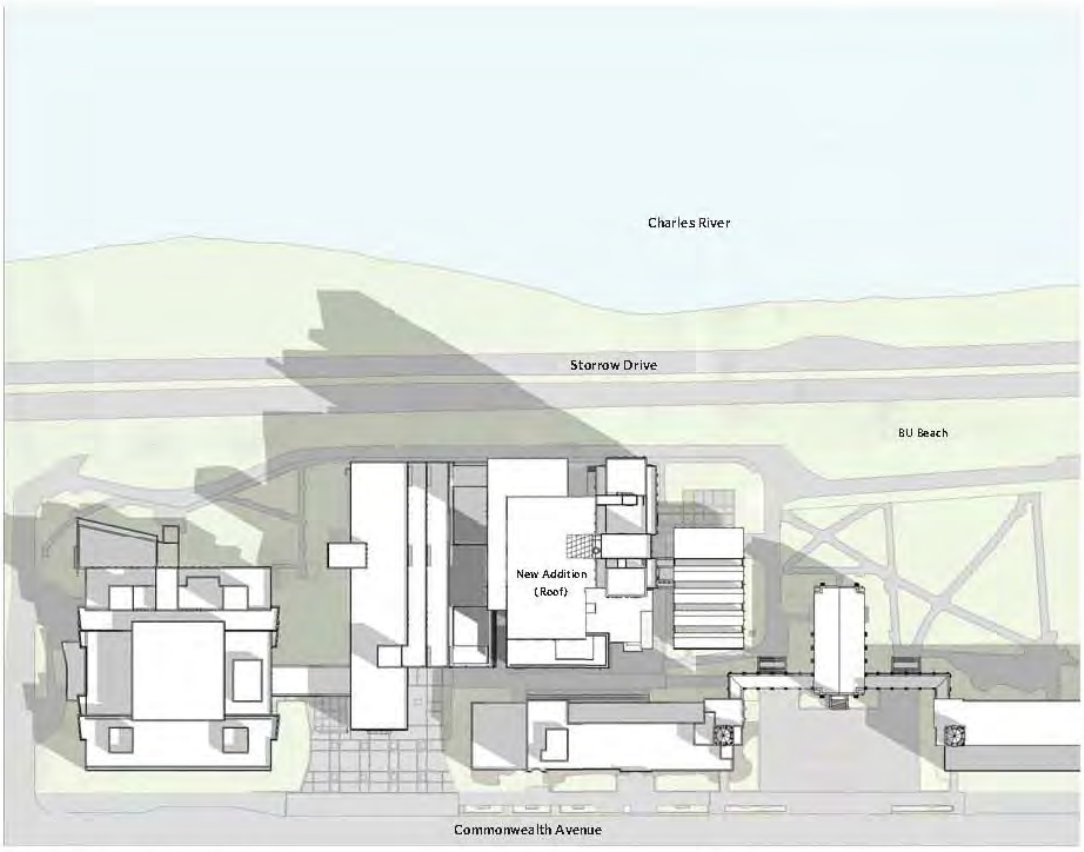
- Using mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on running equipment;
- Scheduling construction activities so as to avoid the simultaneous operation of the noisiest construction activities and reduce impacts during potential 2nd and 3rd shift operations;
- Turning off all idling equipment;
- Locating noisy equipment away from abutters; and
- Shielding the noise generator by distance or enclosure.

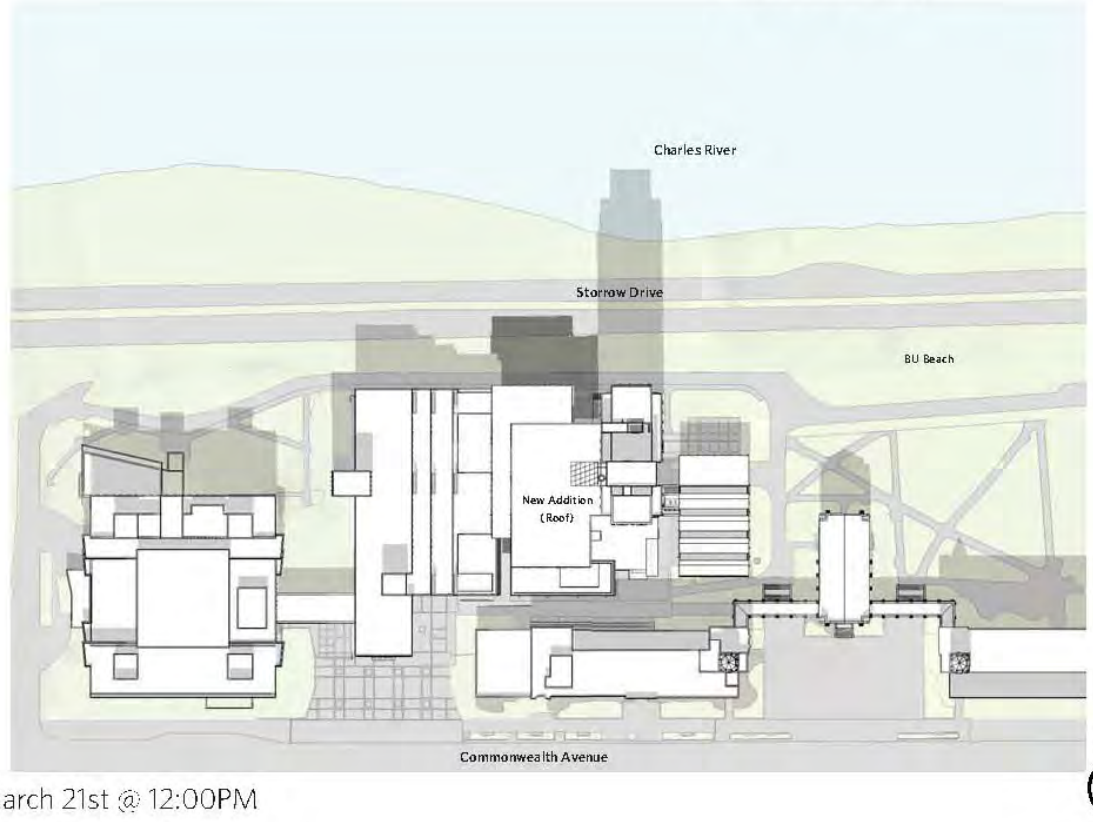
6.12.8 UTILITY PROTECTION DURING CONSTRUCTION

During construction, the City's infrastructure will be protected using sheeting and shoring, temporary relocations, and construction staging as required. The contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all utilities with the appropriate utility owners and/or agencies. The contractor will also be required to provide adequate notification to the utility owner/operator prior to any work commencing on their utility. Also, in the event a utility cannot be maintained in service during a switch-over to a temporary or permanent system, the contractor will be required to coordinate the shutdown with the utility owners/operators and project abutters to minimize impacts and inconveniences accordingly.

6.12.9 RODENT CONTROL

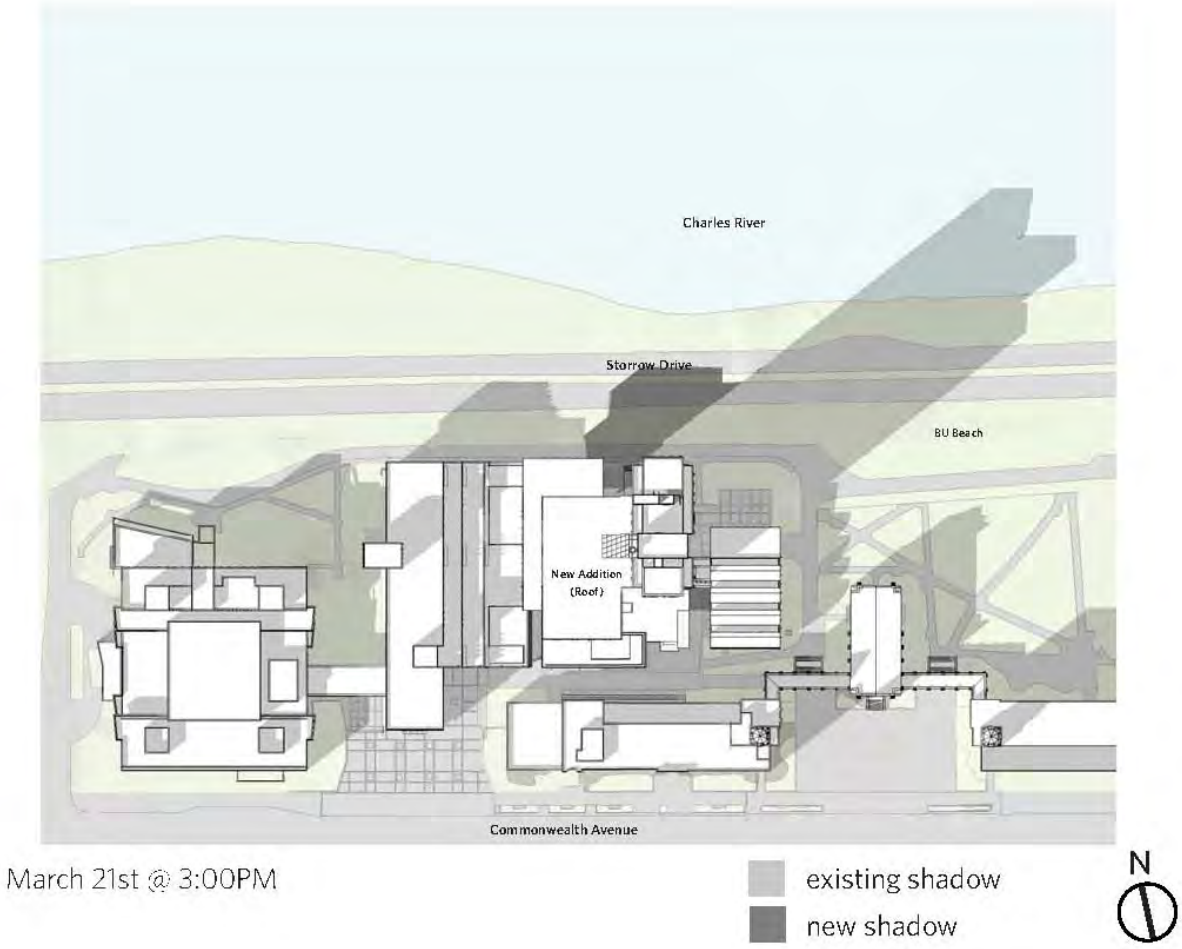
The City of Boston enforces the requirements established under Massachusetts State Sanitary Code, 105 CMR 410.550. This policy establishes that the elimination of rodents is required for issuance of any building permits. During construction, rodent control service visits will be made by a certified rodent control firm to monitor the situation.





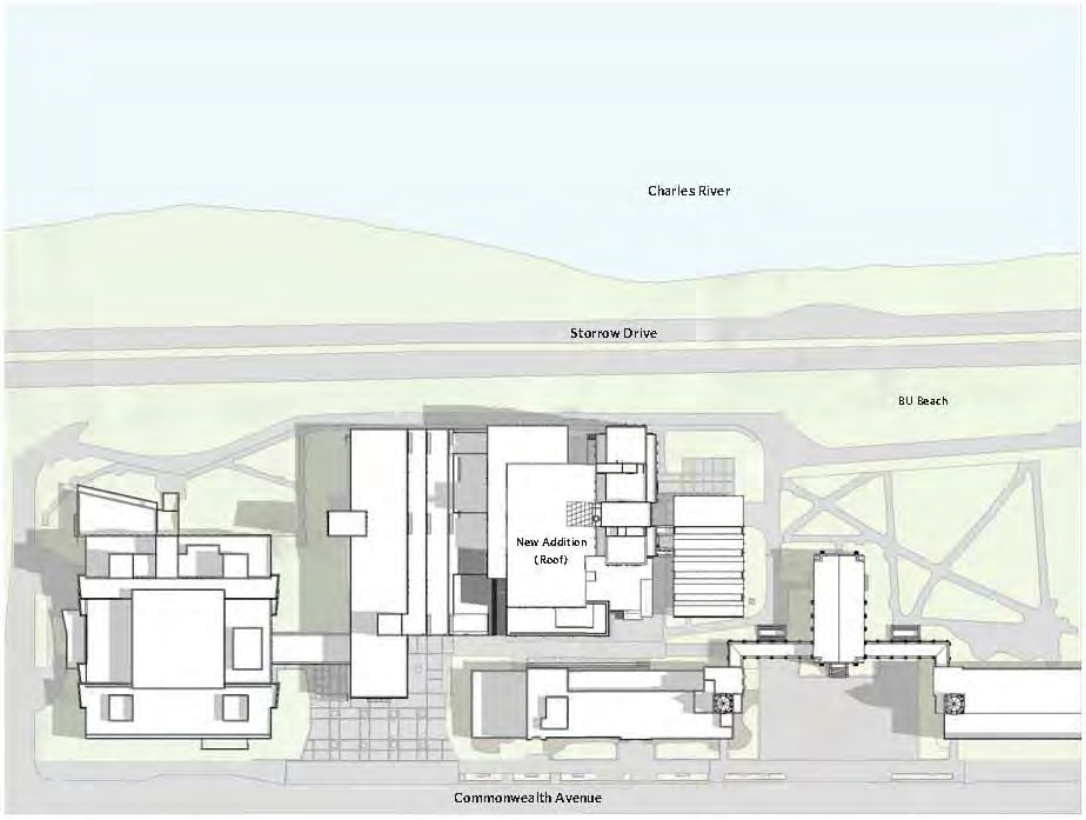
Boston University
BOSTON, MASSACHUSETTS

Figure 6-1
Shadow Analysis: March 21, 9 am and 12 pm
source: Bruner/Cott, 2012



Boston University
BOSTON, MASSACHUSETTS

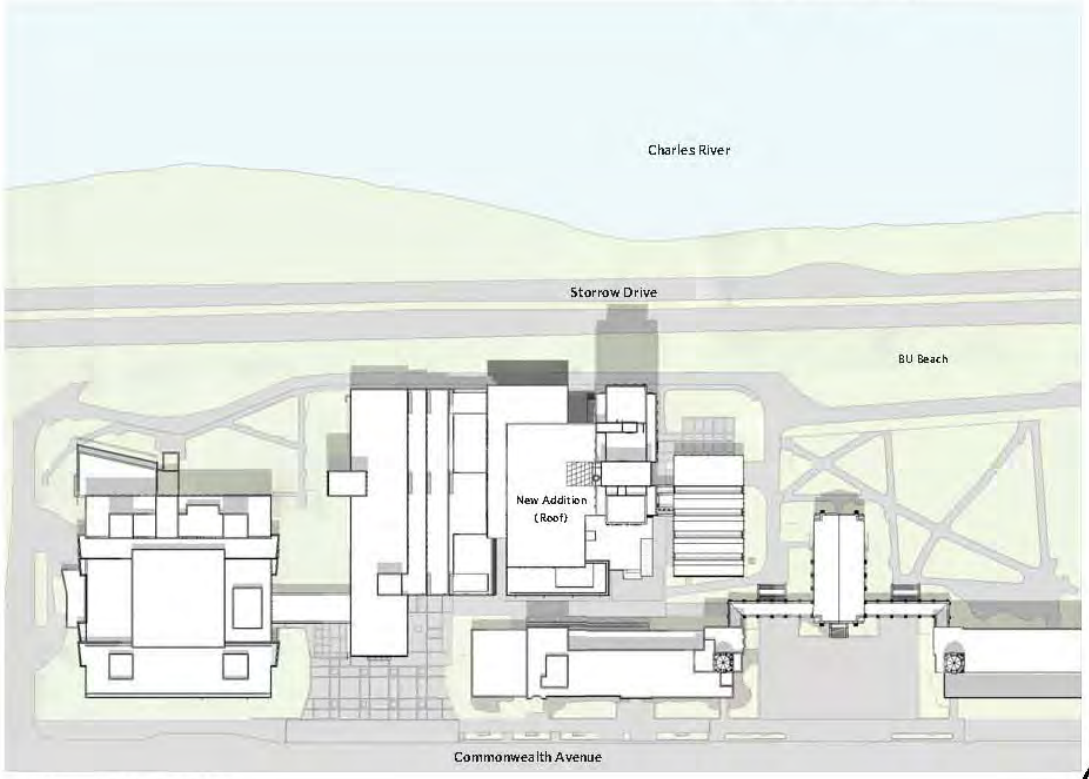
Figure 6-2
Shadow Analysis: March 21, 3 pm
source: Bruner/Cott, 2012



June 21st @ 9:00AM

existing shadow
new shadow

N

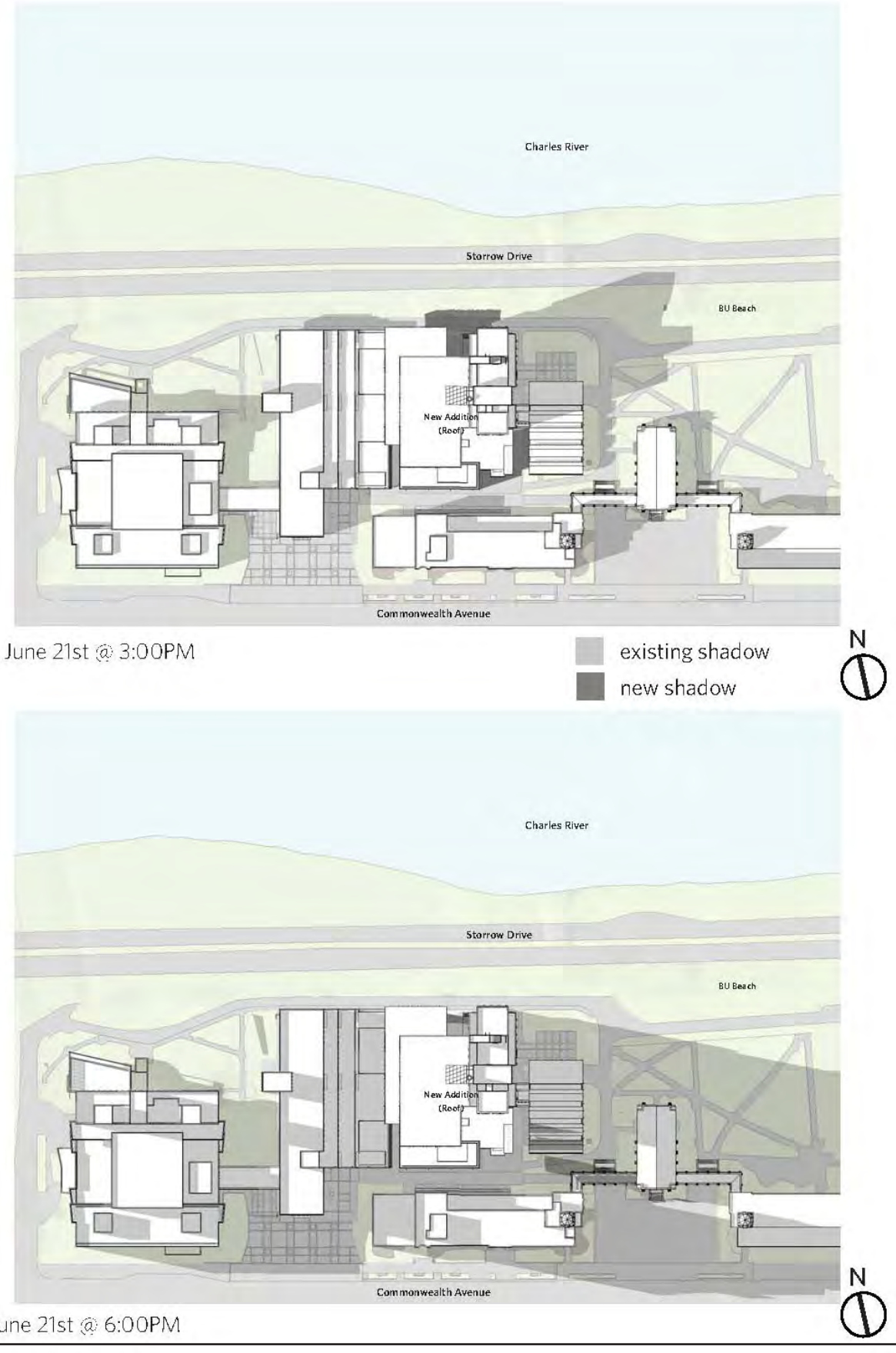


June 21st @ 12:00PM

N

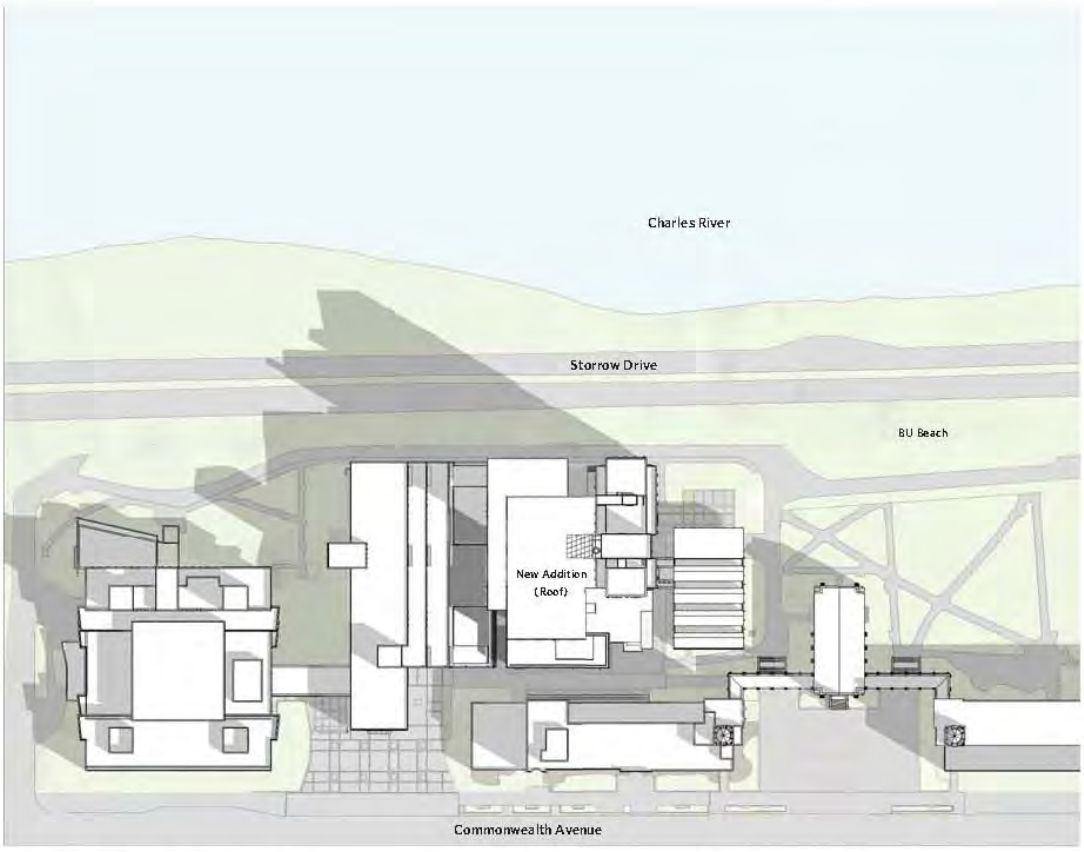
Boston University
BOSTON, MASSACHUSETTS

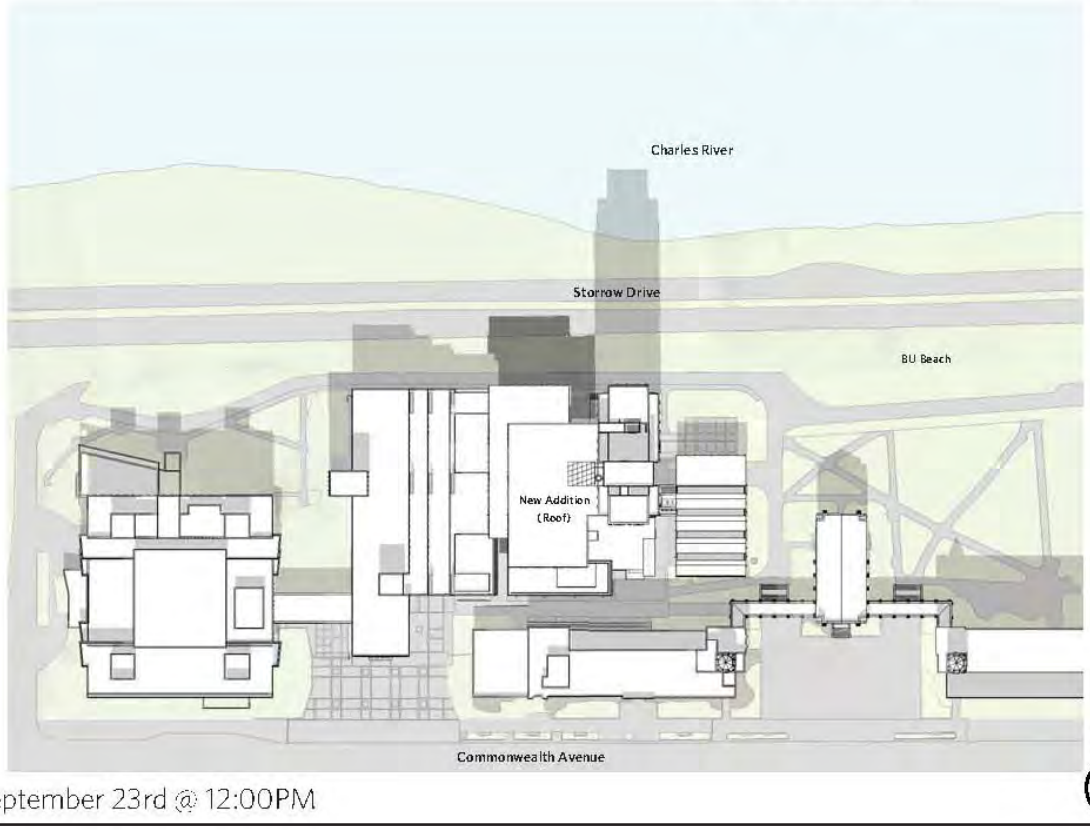
Figure 6-3
Shadow Analysis: June 21, 9 am and 12 pm
source: Bruner/Cott, 2012



Boston University
BOSTON, MASSACHUSETTS

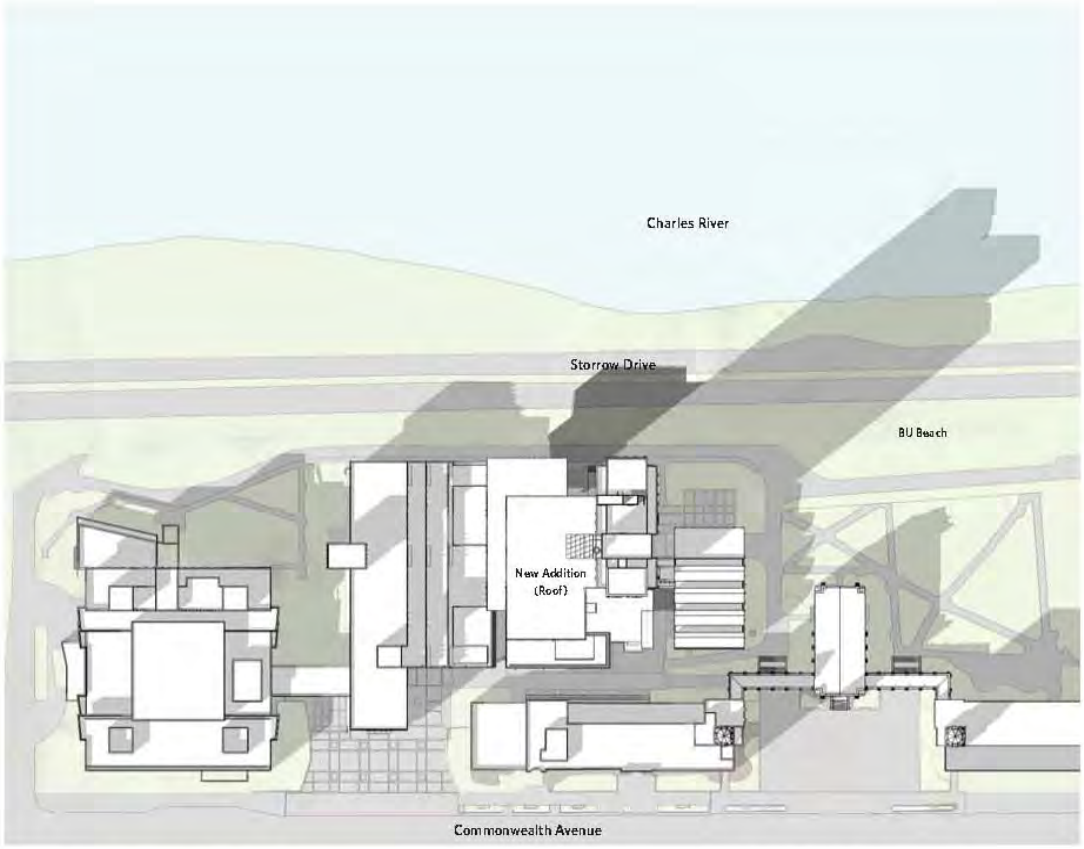
Figure 6-4
Shadow Analysis: June 21, 3 pm and 6 pm
source: Bruner/Cott, 2012





Boston University
BOSTON, MASSACHUSETTS

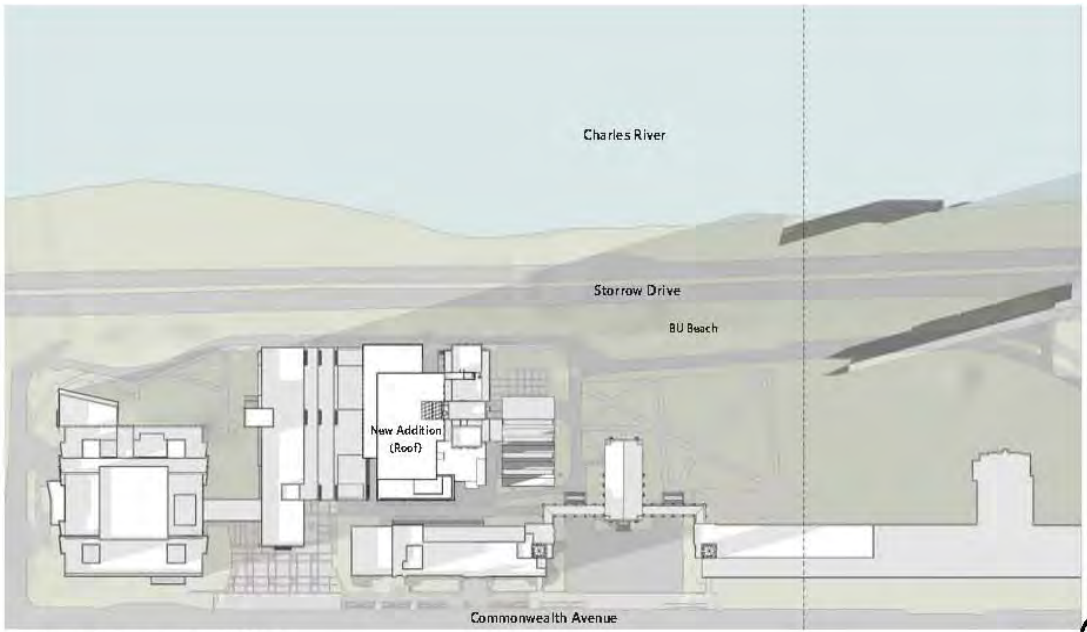
Figure 6-5
Shadow Analysis: September 23, 9 am and 12 pm
source: Bruner/Cott, 2012



September 23rd @ 3:00PM

existing shadow
new shadow

N

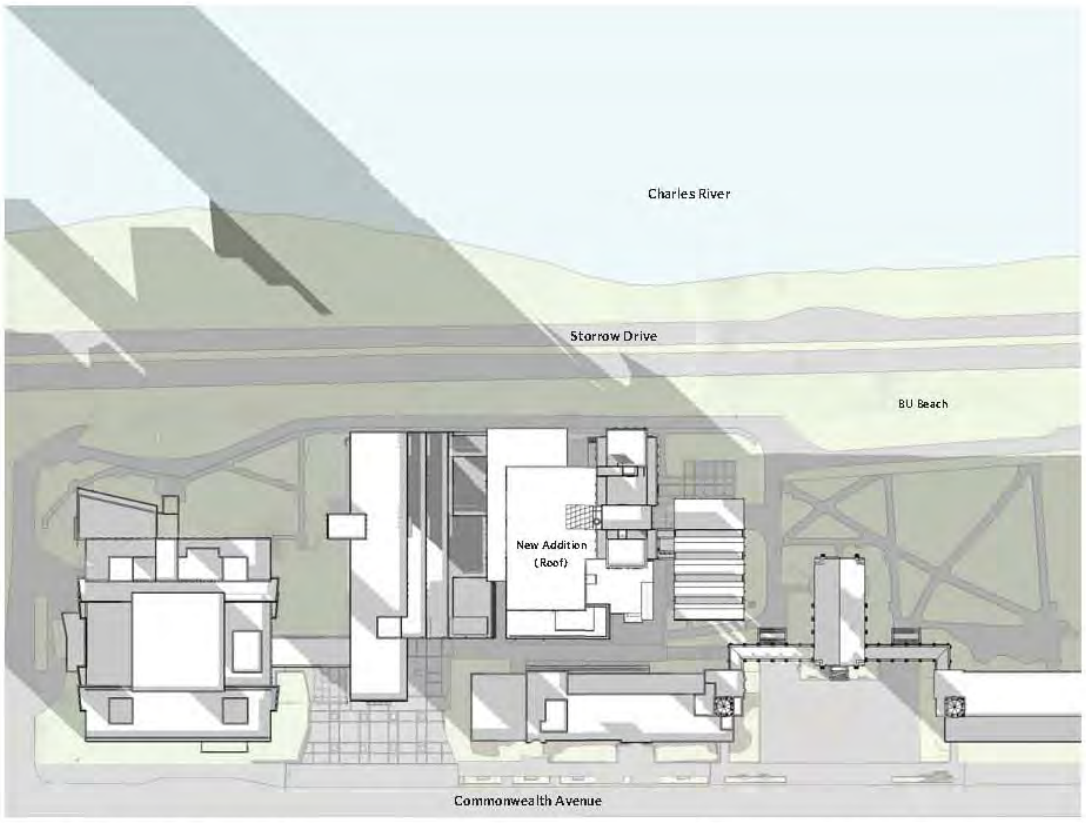


September 23rd @ 6:00PM

N

Boston University
BOSTON, MASSACHUSETTS

Figure 6-6
Shadow Analysis: September 23, 3 pm and 6 pm
source: Bruner/Cott, 2012



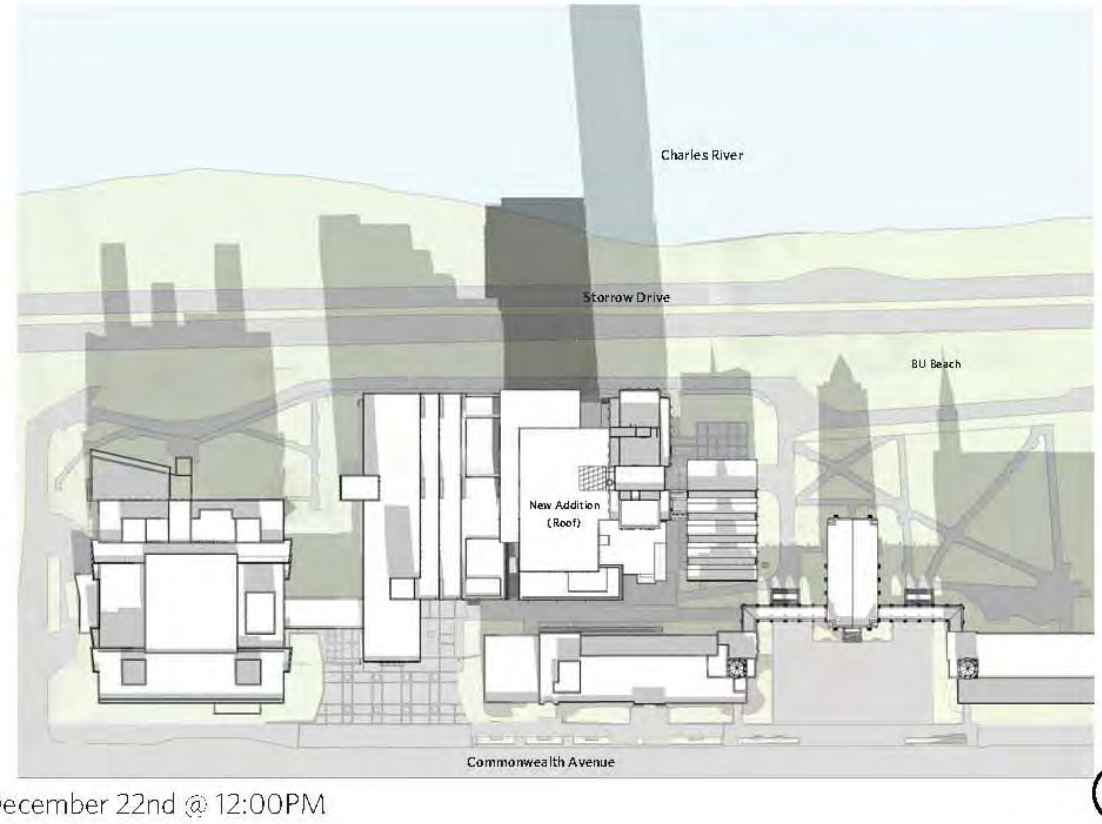


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Figure 6-7
Shadow Analysis: December 22, 9 am and 12 pm
source: Bruner/Cott, 2012

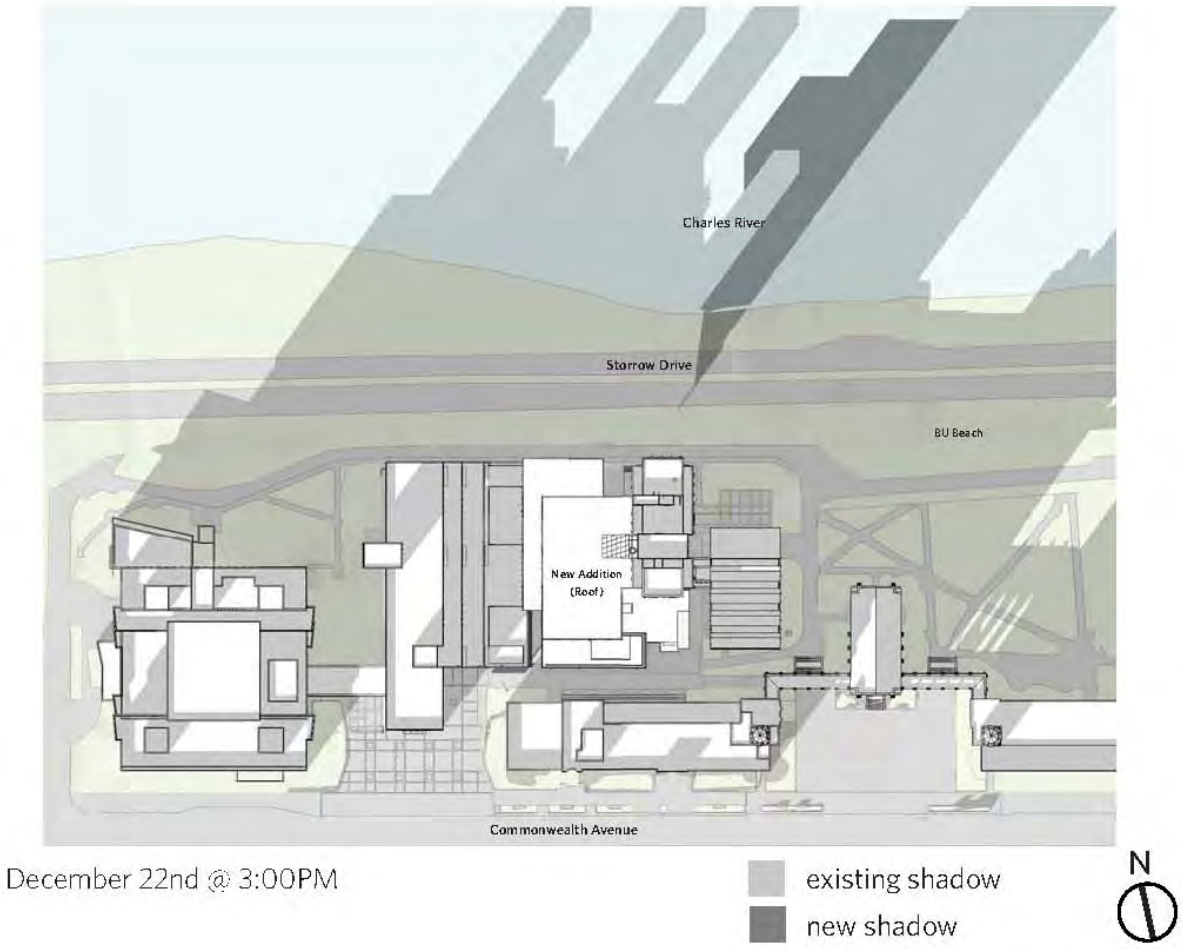
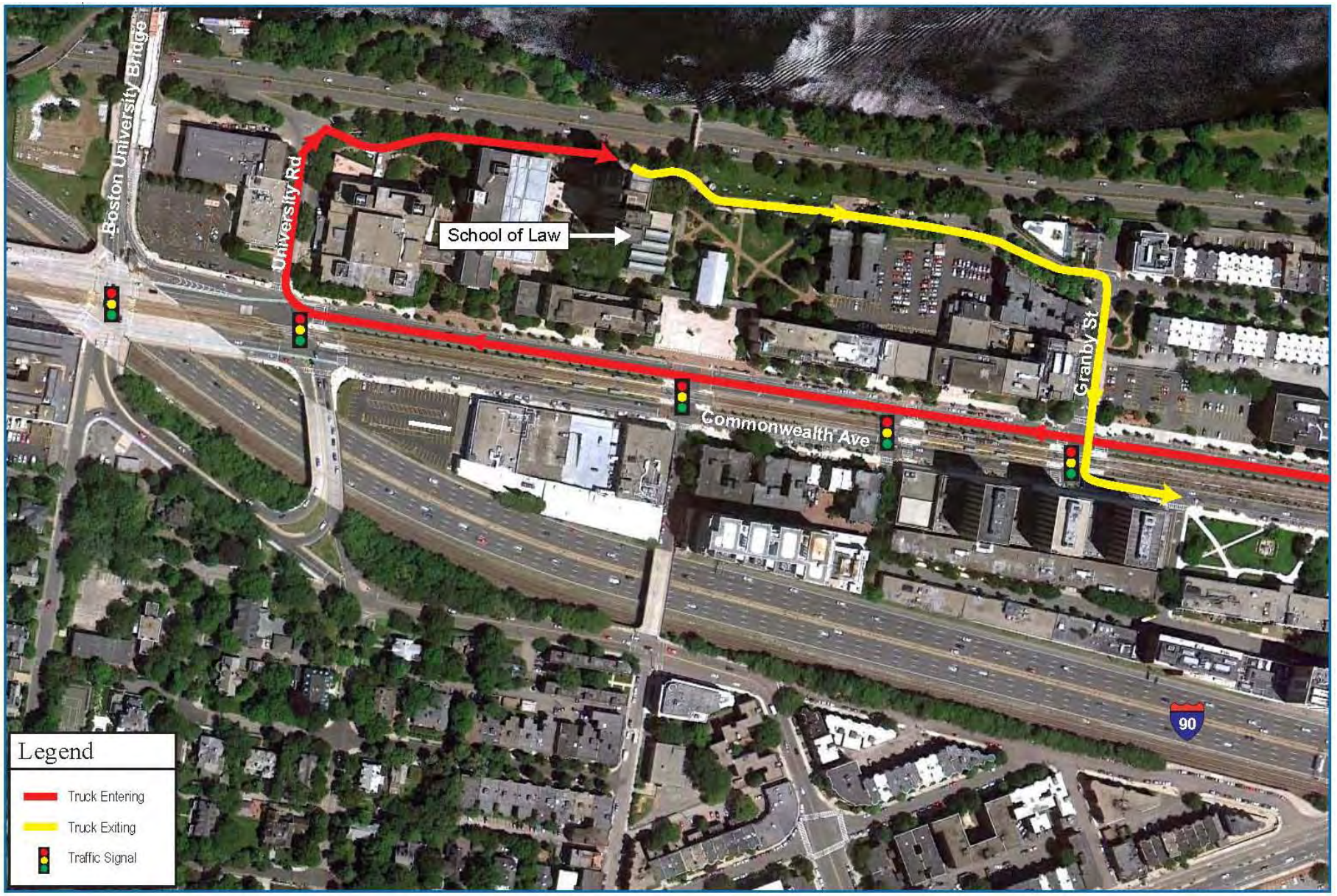


Figure 6-8
Shadow Analysis: December 22, 3 pm
source: Bruner/Cott, 2012



TETRA TECH
One Grant Street
Framingham, MA 01701-9005
508.903.2000
www.tetratech.com

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Figure 6-9
Construction Truck Circulation Plan
source: Tetra Tech, 2012

Chapter 7

Tidelands

7.0 TIDELANDS

7.1 INTRODUCTION

The project site, which is located at the Boston University Charles River Campus, is located at 765 Commonwealth Avenue (see Figure 1-1, Locus Map). This site is bordered by the School of Theology on the south side, the George Sherman Union on the west side, Storrow Drive on the north side, and the Warren Alpert Mall and Marsh Chapel on the east side (see Figure 2-2, Existing Conditions Survey). Commonwealth Avenue is located on the south side of all these buildings. This portion of the Campus was part of the Charles River prior to it being filled as part of the development of Boston's Back Bay over a period from the late 1800's to the early 1900's.

The Proponent will be submitting a Chapter 91 License application for the project. Existing structures to be licensed include portions of the Mugar Memorial Library, School of Law Tower, Central Boiler Plant, and the Pappas Law Library building. The new addition between the School of Law Tower and Mugar Memorial Library will be licensed as part of this project. Also note that the project site for the purposes of this chapter only includes a portion of the adjacent Mugar Memorial Library. It will be licensed in accordance with 310 CMR 9.05(1), which requires unauthorized structures to be licensed. Only Chapter 7 includes this expanded project area – all the other sections of the PNF/EENF and the related area calculations pertain to the smaller project area.

7.2 PROJECT DESCRIPTION

The School of Law project includes restoration of the exterior and renovation of the interior of the existing 18-story School of Law Tower and code upgrades to the Pappas Law Library building. To support the educational programming and space needs of the School of Law, a 5-story, 93,525 gross square foot (gsf) addition will be constructed between the Mugar Memorial Library and the Pappas Law Library Building (see Figure 1-3, Project Site Plan). Each of these components will be phased due to site and use constraints, which include the proximity of other campus buildings in and near the project site, and the continued use of the adjacent campus buildings throughout the year.

The project has been designed to maintain public access through the site, both to Commonwealth Avenue and to the existing pedestrian bridge that connects to the Charles River Reservation across Storrow Drive. The pedestrian bridge is located on property owned by the Department of Conservation and Recreation. Public amenities that will be provided within the site include, but are not limited to, the following list:

- Landscaping,
- Bicycle racks,
- Benches,
- Interior meeting space, and
- Improved lighting.

7.3 TIDELANDS JURISDICTION

The project site is subject to Chapter 91 Jurisdiction according to the DEP Determination on February 7, 2008 (DEP File No. JD08-2237). This Determination identified the historic high and low water marks within the Charles River Campus. Most of this area, along with the other parts of the Back Bay, was originally filled between the late 1800s and the early 1900s, and is considered private tidelands. Some of the area was filled below the historic low water mark, and is therefore, considered Commonwealth tidelands. The authorization for fill is listed in Table 7-1. Note that only the fill was authorized and that not all buildings in jurisdiction have been licensed.

Table 7-1. Authorizations at the Boston University Project Site

License No.	Authorization	Date
1158	Harbor and Lands Commissioners	April 18, 1887
JD08-2237	Jurisdictional Determination	February 7, 2008

Source: DEP, Boston, 2008

The original high water mark is based on the 1847 U.S. Coast Survey that was used in the Jurisdictional Determination (see Figure 7-1, Chapter 91 Jurisdiction). This line runs near and roughly parallel to Commonwealth Avenue. Between this line and a line 250 feet landward of the existing high water mark is an area designated as landlocked tidelands, which are not subject to Chapter 91 licensing requirements. The original low water line is from the U.S. Coast Survey (H-850) of 1861. Approximately half of the property within Chapter 91 jurisdiction is seaward of the historic low water line and is considered to be Commonwealth tidelands. Note that each of lines was overlaid on a survey in order to determine the accurate position of the existing and proposed buildings.

In light of the above, the applicant intends to apply for a Chapter 91 license for existing and new buildings within Chapter 91 jurisdiction (see Figure 7-2, Chapter 91 Compliance. The project will also be seeking a Public Benefit Determination for the portions of the project that are located within landlocked tidelands, which includes the area landward of the jurisdiction line for the School of Law site (see Figure 7-1, Chapter 91 Jurisdiction).

The project is seeking to license a total of approximately 27,186 sf of building footprint that will be in Chapter 91 jurisdiction (see Table 7-2). Of that amount, approximately 4,783 sf of building footprint will be in Commonwealth tidelands.

Table 7-2. Project Tidelands

Area	Size (square feet)
Chapter 91 Jurisdiction Area	54,513
Landlocked Tidelands	53,594
Total Tidelands	**108,107**
Commonwealth Tidelands	28,430
Private Tidelands	26,083
Total Tidelands in Jurisdiction	**54,513**
Existing Building Footprint	23,087
Proposed Building Footprint	4,099
Total Building Footprint	**27,186**
Building Footprints	27,186
Open Space	27,327
Total Chapter 91 Jurisdiction Area	**54,513**
Building Footprints	4,783
Open Space	23,647
Total Commonwealth Tidelands	**28,430**

7.4 COMPLIANCE WITH CHAPTER 91 STANDARDS

7.4.1 OVERVIEW

The project is nonwater-dependent pursuant to 310 CMR 9.12(4) of the Waterways regulations because it does not have any water-dependent use defined in these regulations. As stated in M.G.L. Chapter 91 Section 18, "no structure or fill for a nonwater-dependent use of tidelands may be authorized unless a written determination by the Department [of Environmental Protection] is made following a public hearing that said structures or fill shall serve a proper public purpose and that said purpose shall provide a greater public benefit than detriment to the rights of the public in said tidelands..." Pursuant to 310 CMR 9.31(2)(b) of the Waterways regulations, DEP presumes that the referenced requirement is met if the project complies with the nonwater-dependent use standards of 310 CMR 9.51 - 9.53, and is consistent with the policies of the Massachusetts Office of Coastal Zone Management.

Section 7.4.1 below describes the project compliance with the Chapter 91 standards outlined in 310 CMR 9.00 for the School of Law project (see Figure 7-2, Chapter 91 Compliance).

7.4.2 COMPLIANCE WITH CHAPTER 91 REGULATIONS

The project complies with the following standards of the Chapter 91 regulations.

310 CMR 9.51(3)(B) – FACILITIES OF PRIVATE TENANCY

This standard for facilities of public accommodation (310 CMR 9.51(3)(b) is not applicable since the project is located on filled tidelands and is more than 100 feet from the project shoreline (the high water mark of the Charles River).

310 CMR 9.51(3)(C) – WATER-DEPENDENT USE ZONE

In accordance with existing Chapter 91 regulations at 310 CMR 9.51(3)(c), the project must preserve the site's capacity to serve water-dependent uses. Since there is no water-dependent zone, the project is not subject to this standard.

310 CMR 9.51(3)(D) - OPEN SPACE

In accordance with 310 CMR 9.51(3)(d), nor more than 50% of the project site within jurisdiction (seaward of the 250-foot line) may be occupied by nonwater-dependent use buildings. The regulations require that, at a minimum, one square foot of open space be provided on the project site for each square foot of tidelands occupied by the footprint of buildings containing nonwater-dependent uses.

The project site within Chapter 91 jurisdiction includes approximately 54,513 sf of filled tidelands (see Table 7-2). The portions of the School of Law Tower, the new addition, Pappas Law Library building, and Mugar Memorial Library within jurisdiction total 27,186 sf. The amount of proposed open space is equal to approximately 27,327 sf or 50% of the project site, thereby keeping at least half of the project site within jurisdiction free from nonwater-dependent buildings.

310 CMR 9.51(3)(E) - HEIGHT

In accordance with 310 CMR 9.51(3)(e), the new or expanded building heights for non-water dependent use are required to be 55 feet or less when located within 100 feet of the high water mark. Landward of the 100-foot line to the Chapter 91 jurisdiction line, buildings can be stepped up on a 1:2 slope. The allowable building heights are shown on Figure 7-3, Chapter 91 Building Heights. Building heights are measured in accordance with the Boston Zoning Code.

The closest portion of the proposed building to the existing high water mark of the Charles River shown on Figure 7-3, Chapter 91 Building Heights is approximately 170 feet away and is 76 feet above grade, which is below the allowed height of 90 feet

above grade at this location. The new building steps up to 98 feet above grade at approximately 200 feet back from the high water mark. At this location, it is below the 105-foot height limit. Therefore, the new building is within the Chapter 91 building height allowance. Since this standard only applies to new or expanded buildings, the existing buildings to be licensed, which include the Mugar Memorial Library, School of Law Tower, and the Pappas Law Library Building, do not need to conform to the height limitations.

310 CMR 9.52(2) – Utilization of the Shoreline for Water-dependent Purposes

The Chapter 91 Waterways Regulations require that nonwater-dependent use projects in tidelands devote a reasonable portion of such lands to water-dependent use, including public access. The regulations place particular emphasis on those sites that include a water-dependent use zone, requiring the provision of specific water-dependent facilities within said zone, such as facilities that generate water-dependent activities or pedestrian access to and along the waterfront.

The project site is entirely separated from the waters of the Charles River by Storrow Drive and does not have a water-dependent use zone as defined by 310 CMR 9.02. As a result, the project must comply with the standards outlined in 310 CMR 9.52(2), as opposed to those found at 9.52(1).

In accordance with 310 CMR 9.52(2), the project is required to provide "connecting public walkways or other public pedestrian facilities..." to ensure that the site is not poorly linked with those sites that include water-dependent use zones. The project intends to meet this standard through the preservation and enhancement of pedestrian pathways through the project site that allow pedestrians to walk between Commonwealth Avenue and the pedestrian bridge that runs over Storrow Drive to the Charles River (see Figure 7-4, Public Access). The sidewalks will incorporate typical design and landscape treatments. The Applicant will also work with the Department to identify appropriate locations for benches on the site. The described pedestrian access measures and related facilities enable the project to meet the standards outlined in 310 CMR 9.52(2).

310 CMR 9.53 – Activation of Commonwealth Tidelands

The site is privately owned and is located on private and Commonwealth tidelands. Therefore, the provisions of 310 CMR 9.53 pertaining to water-dependent activity and exterior open space apply. The proponent will promote public use and enjoyment of such lands to a degree that is fully commensurate with the proprietary rights of the Commonwealth.

The standards of 310 CMR 9.53(1) do not apply since a public agency does not intend to pursue a water-dependent project at the site.

The standards of 310 CMR 9.53(2)(a) do not apply since the project site does not have a water-dependent use zone.

Pursuant to 310 CMR 9.53(2)(b), the amount of exterior open space for active or passive public recreation, such as plazas and observation areas at or near the water, shall be at least equal to the square footage of all Commonwealth tidelands on the project site landward of a project shoreline and not within the footprint of buildings. Open space devoted to public vehicular use cannot exceed that devoted to public pedestrian use. Furthermore, the project shall include exterior open spaces for active or passive public recreation that is appropriate for the site, given the nature of the project and the condition of the water body on which it is located.

Approximately 28,430 sf the site is within Commonwealth tidelands (see Table 7-2). Within this area, there is approximately 23,647 sf of open space and 4,783 sf of building footprints, which include the area under the building overhangs. Accordingly, there should be at least 50% or 14,215 sf of exterior open space. The project meets this standard by providing at least 83% exterior open space, which can be used for pedestrians to walk, sit, and enjoy the views of the Charles River across Storrow Drive. Although the site is not located on or near the water, a public water-based activity that is appropriate for the site is the continued access to the nearby pedestrian bridge over Storrow Drive that leads to the Charles River. This open space also provides access that leads to the pedestrian bridge. Furthermore, there is approximately 7,988 sf of space that is used for vehicular travel, which is less than half of the amount of open space available for pedestrian use.

Pursuant to 310 CMR 9.53(2)(c), the project shall devote interior space to facilities of public accommodation (FPA), which shall be at least equal in amount to the square footage of all Commonwealth tidelands on the project site within the footprint of buildings containing non-water dependent facilities of private tenancy. Such space shall be located along the ground level unless the Department determines that an alternative location would more effectively promote public use and enjoyment of the project site.

The project complies with this standard as Boston University is considered a Facility of Public Accommodation according to 310 CMR 9.02, which defines "educational, historical, or other cultural facilities open to the public" as an FPA. As an educational facility, the University provides services directly to the public. In fact, University academic buildings are generally open to the public, including those who are not members of the University community, during normal operating hours.

The existing building within jurisdiction has approximately 23,087 sf of ground floor space that is used for educational purposes. The new addition will add approximately 4,099 sf of building coverage, for a total of approximately 27,186 sf. at ground level.

Of this total area, approximately 4,783 sf will be located within Commonwealth tidelands. This area is located in the north side of the Tower and the Mugar Memorial Library, under the overhang of the proposed addition, and a portion of the Central Boiler Plant. See Figure 7-1, Chapter 91 Jurisdiction).

The Project to meet the standard by providing public access to the portions of the buildings within jurisdiction as well as to adjacent portions of the buildings that are not in jurisdiction. These areas include the Mugar Memorial Library, Pappas Law Library, and the Law School. Among other facilities, these buildings include public lobbies, conference rooms, lecture halls, and exhibit areas of particular interest to the public. For example, the Mugar Memorial Library provides interesting collections and displays that are available for public viewing.

The applicant believes all these spaces will promote the public use and enjoyment of such lands to a degree that is fully commensurate with the proprietary rights of the Commonwealth therein and will ensure the private advantages of use are not primary but merely incidental to the achievement of public purposes.

Pursuant to 310 CMR 9.53(2)(d), the applicant will provide a management plan that ensures all water-related benefits are effectively sustained. The plan will address the maintenance issues, signage, hours of operation, and responsibilities.

Pursuant to 310 CMR 9.53(2)(e), the Department may consider measures funded or otherwise taken by the applicant to provide water-related public benefits elsewhere in the harbor or otherwise in the vicinity of the project site in the event that such benefits cannot be reasonably provided on site and are not appropriate or sufficient. The applicant will work with the Department to determine whether or not additional public benefits are necessary to meet this standard. For example, the Department may determine that public access to the waterfront can be greatly enhanced by placing signs, which direct pedestrians to the pedestrian bridge and Charles River, near the entrance to the site along Commonwealth Avenue.

Pursuant to 310 CMR 9.53(3), the project shall promote the development policies of the Commonwealth, including historic, environmental, and transportation. To help preserve and protect the historic assets of the Commonwealth, the project will fulfill its goal is to rehabilitate the Sert Complex, which is eligible for listing on the National Register of Historic Places. Environmental policies to make the buildings more energy efficient and reduce runoff will be met by repairing the Tower's exterior and upgrading the site's infrastructure. Development in existing urbanized areas helps reduce greenhouse gases by supporting the state's transportation policies to encourage transit-oriented developments and reduce vehicular emissions. The project will not detract from the water-related benefits by contributing to implementation of these polices of the Commonwealth.

7.5 PUBLIC BENEFIT REVIEW

7.5.1 OVERVIEW

Portions of the project site are considered landlocked tidelands and are subject to recently passed "Landlocked Tidelands Legislation" pursuant to MGL c.91 Sec. 18B and are not subject to Chapter 91 licensing by MassDEP pursuant to 310 CMR 9.02 and 9.04(2). The Secretary of Environmental Energy and Affairs is required to conduct a public benefit determination for the portion of the project containing landlocked tidelands. The legislation requires an analysis of the project's impact on the public's right to access, use, and enjoy tidelands protected under Chapter 91 and to identify measures to avoid, minimize, or mitigate any adverse impacts.

7.5.2 JURISDICTION

Landlocked tidelands is determined by filled tidelands that are located between the historic high water mark, and a distance of at least 250 feet from the existing high water mark, and the separation of the filled tidelands from any flowed tidelands by a public way. The historic high water mark runs roughly along Commonwealth Avenue, a line that is 250 feet from the Charles River runs through the property, and Storrow Drive entirely separates the property from the any flowed tidelands, the Charles River. As described above, this area was filled in the late 1800s and early 1900s (see Figure 7-1, Chapter 91 Jurisdiction).

7.5.3 PUBLIC BENEFIT REVIEW AND DETERMINATION

In accordance with the requirements of the 301 CMR 11.05(4)(b) and 310 CMR 13.03, this section provides the following information regarding Public Benefit Determination for projects in landlocked tidelands that are going through the ENF review process.

Nature of Tidelands Affected by the Project

As previously stated, the project site was filled in the late 1800s and early 1900s, and is entirely separated from flowed tidelands. These tidelands have been used for non-water dependent purposes since it was filled. In the early 1900s, there were several residential buildings on the site. In the 1960s, the University built several buildings, including the Sert Complex, on the site to support its educational and campus plans.

Public Benefit of the Project

The purpose of the project is to rehabilitate the existing School of Law Tower and to meet the current and future educational and faculty needs of the School of Law program by creating more instruction, research, and meeting space. The School of Law takes great pride in the level of education it provides as well as serving the surrounding community in every way it can. The School of Law's commitment to the

public interest is second to none. First, they prize their dedication to encourage work in the public interest by their students while the students are here and after they graduate. Second, law students contribute many hours of free legal services to people in need and to public institutions through the School's many clinical and externship programs. Those programs allow law students to represent individual pro bono clients or work for the judiciary, in government, or for public interest organizations.

Impact on Abutters and the Surrounding Community

The will be relatively few impacts on the abutters and surrounding community. The project will be restoring a portion of the Sert Complex as well as improving the educational programs for its students. There will not be any traffic impacts since no new parking spaces will be added. In fact, traffic impacts will most likely be reduced according the trend of increased transit and bicycle use. Construction impacts will be minor since all of the work will be on site. Truck routes and deliveries will be coordinated with the City of Boston Transportation Department to minimize impacts on the surrounding community. Although there may be some noise generated during construction, which may have extended hours, it is not expected to have any impacts due to the distance from abutters.

Enhancement to the Property

The goal of this project is to establish the optimum solution to the space and facility needs of the Boston University School of Law by updating the campus infrastructure to support the needs of the students and faculty. The historic School of Law Tower will be substantially enhanced as part of this project. The Tower will be rehabilitated because there have been only minor renovations since it was built in the 1960s. The mechanical systems need to be replaced, and the exterior envelope will be restored. There will also be open space improvements including pedestrian connections through the property, addition of bicycle racks, landscaping, and other amenities such as lighting and benches).

Benefits to the Public Trust Rights in Tidelands and Other Associated Rights

The benefits to the public trust rights in tidelands include access to the waterfront and enjoyment of filled tidelands protected under the provisions of Chapter 91. Sidewalks along the private ways (George D. Hart Way and the former part of Bay State Road) and pedestrian access between Commonwealth Avenue and the pedestrian bridge, which is located on the northeast corner of the site, will be maintained. Open space that allows views of the Charles River along seaward side of the property will be maintained. As stated earlier, more than 50% of the tidelands on the site will be dedicated as open space. Interior spaces within the School of Law Tower, including the lobby and the conference room, will be made available to the public. The environment impacts to the public will be reduced as a result of the installation of a stormwater recharge system that reduces stormwater runoff to the local waters. This recharge system will also help improve the health of the receiving waters.

Furthermore, the University will work with the Department to provide additional benefits to the public such as the provision of benches near and signage leading to the pedestrian bridge.

General Welfare
The project will not result in adverse impacts to the general welfare of the public.

7.6 EXTENDED TERM

The proponent will be requesting an extended term license of 99 years for the proposed project. Supporting documentation will be provided in the Chapter 91 License application.

7.7 CONSISTENCY WITH COASTAL ZONE MANAGEMENT POLICIES (310 CMR 9.54)

The project site is located outside the boundaries of the Coastal Zone as delineated on Plate 15 in Chapter 5 of the Massachusetts Coastal Zone Management Plan for Coastal Regions and Resources. The site is also located more than one hundred feet inland of the 100 year floodplain along the Charles River, which is the inland boundary of the coastal zone. Therefore, the requirements of 310 CMR 9.54 are not applicable.

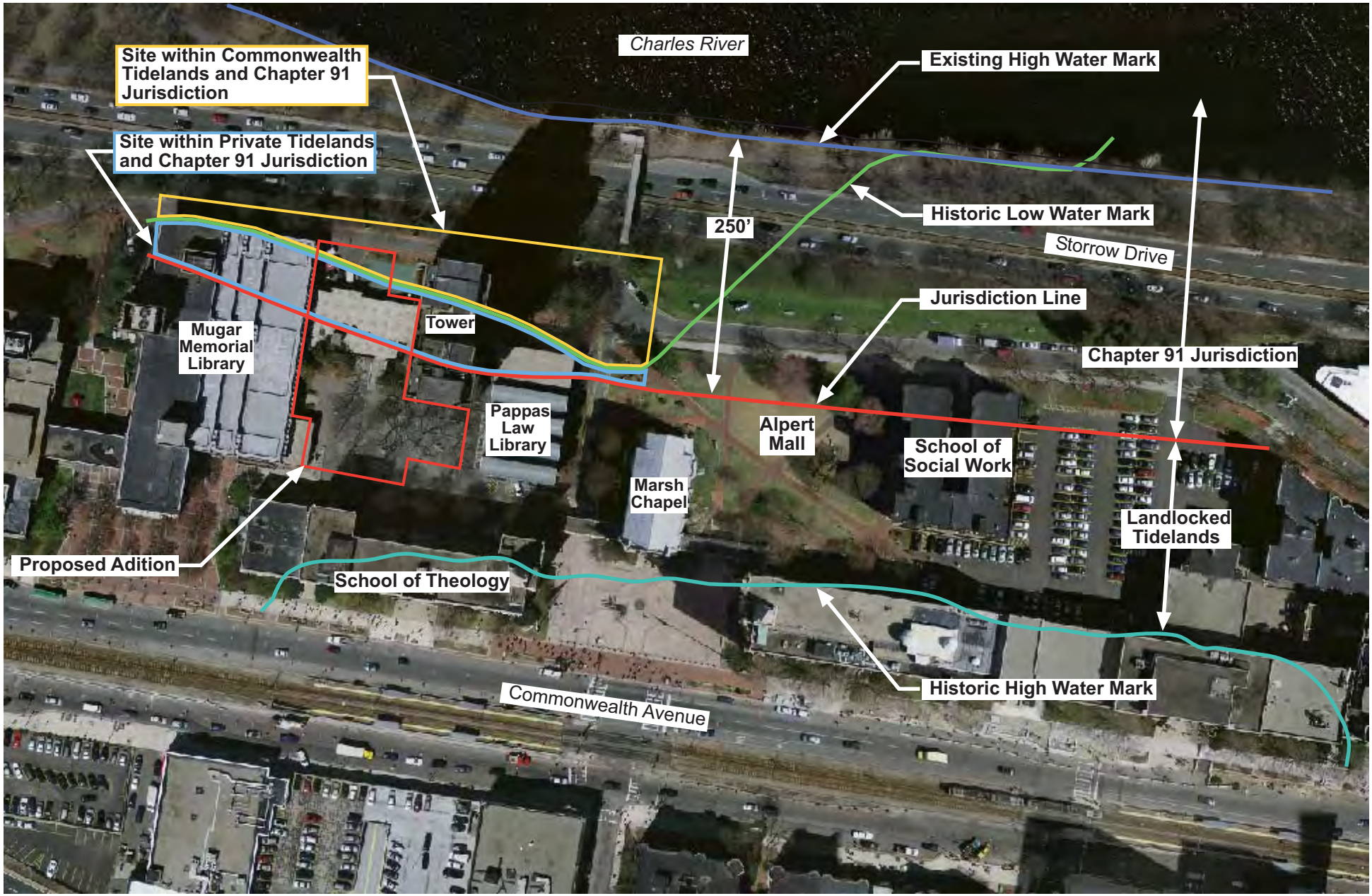

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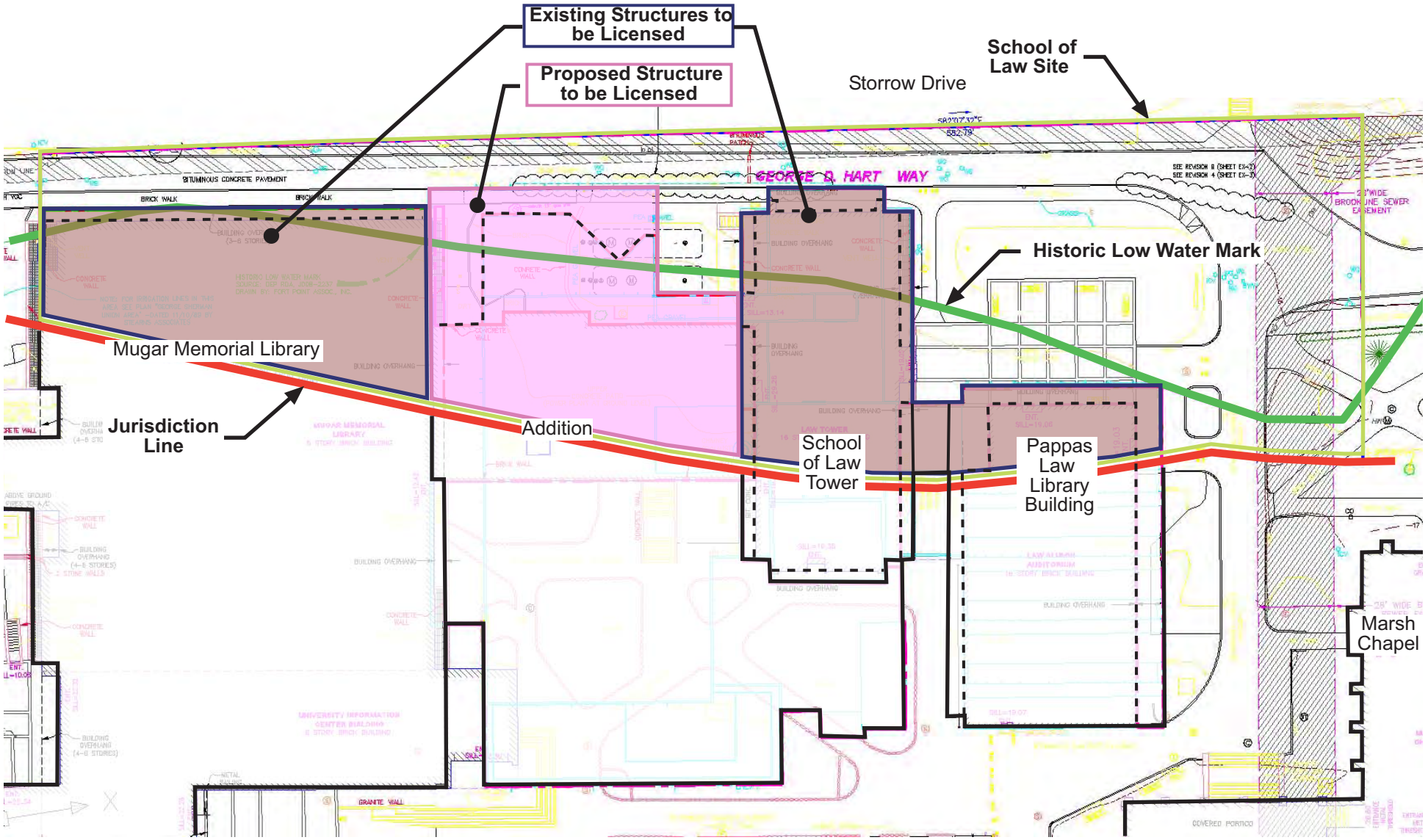
Figure 7-1
Chapter 91 Jurisdiction
source: MassGIS, 2009: DEP, 2010



Chapter 91 Open Space - 50%
Commonwealth Tidelands Open Space - 83%

- - - - Dash line represents building footprints at ground level and edge of overhang areas

N

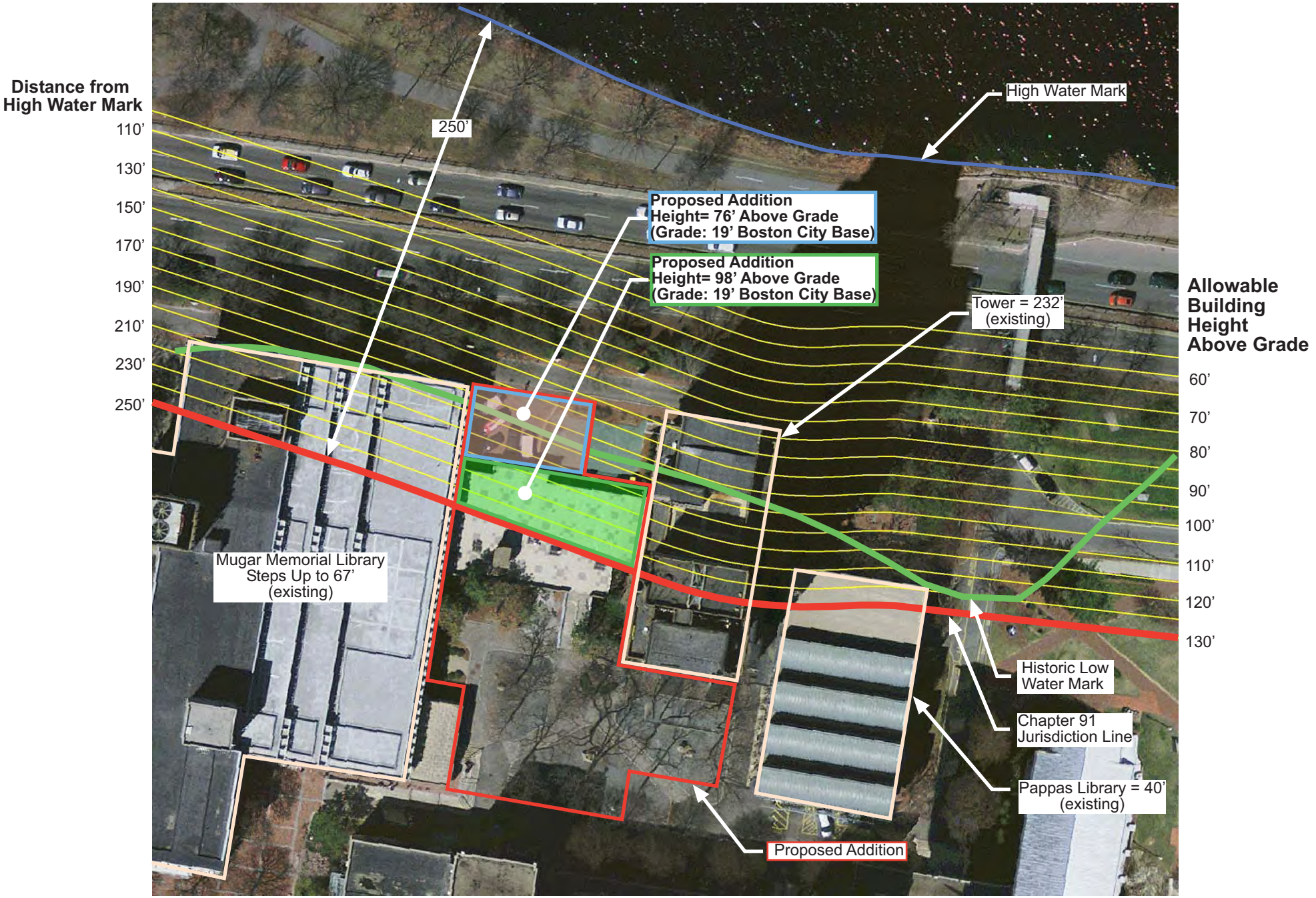


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Figure 7-3
Chapter 91 Building Heights
source: Fort Point Associates, Inc.; MassDEP, 2009.


Boston University Bridge
Charles River
Pedestrian Bridge
Proposed Addition
George D. Hart Way
Charles River Esplanade
Storrow Drive
University Road
School of Law
Mugar Memorial Library
George Sherman Union
Alpert Mall
Chapter 91 Jurisdiction Line
School of Theology
Commonwealth Avenue
College of Arts and Sciences
Granby Street
N
Public Access Paths
Main Building Entrances

Chapter 8

Infrastructure

8.0 INFRASTRUCTURE SYSTEMS

The Project is located in the central campus of Boston University, a 15-acre block bounded by Granby Street, Commonwealth Avenue, Storrow Drive and University Road. All of the infrastructure systems that serve this project also serve a number of other University buildings in the area.

8.1 DISTRICT HEATING AND COOLING SYSTEM

The district heating and cooling plant infrastructure has been upgraded several times over the past few years, which provides the necessary capacity to take on the added task of heating and cooling the new addition. Heating will be provided by the existing Central Boiler Plant, which currently serves 1.7 million square feet in 13 campus buildings, in all, heating and cooling 15% of the campus. In 2007, the five low-pressure steam boilers, which were original from 1960, underwent a major retrofit to improve efficiency and restore capacity. The project included the installation of a Linkageless Control Micro Modulation System and an Exhaust Gas Analyzer. These systems significantly reduce energy consumption and harmful emissions by controlling the combustion process using microprocessor technology, as well as measuring emissions. Other improvements included replacing boiler doors and upgrading burners to latest state of the art combustion control type. In addition, the University cleaned and replaced boiler tubing allowing for increased capacity that is sufficient to accommodate the proposed new addition and upgrades to the building.

In 2010, these boilers were converted from oil-fired to gas-fired, fed by a newly installed 12-inch natural gas line that was extended an additional 2,900 feet to reach the Central Boiler Plant.

The cooling plant for the current School of Law Tower is co-located in the Central Boiler Plant and serves two other building as well. In 2007, two new 600-ton cooling towers were installed to replace the existing 15-year old units as well as three new state of the art steam powered absorbers to replace existing units that were 50 years old. These upgrades to this facility provide sufficient excess capacity to also service the project, which includes the proposed addition.

The upgrades to the district heating and cooling plant over the past seven years resulted in a significant reduction of total exhaust emissions. See Section 6.5, Air Quality for a discussion of the reduction in emissions as a result of these major infrastructure improvements.

National Grid provides natural gas service to the project area. Gas is supplied by a 10-inch line located in George D. Hart Way.

8.2 SANITARY SEWERAGE SYSTEM

Boston University owns and maintains the sanitary sewer pipes in the vicinity of the project site. These pipes connect to an 18-inch Boston University line that passes beneath 735 Commonwealth Avenue then discharges to an 18-inch Boston Water and Sewer line in Commonwealth Avenue. This line connects ultimately to the Deer Island Wastewater Treatment Plant where the flows are treated and discharged 9.5 miles off shore in Massachusetts Bay.

In 2011, anticipating work in this area, the University relocated a number of sanitary sewer lines. Two existing 6-inch sewer connections serving the School of Law Tower and the Pappas Library Building were redirected and combined into one new 8-inch sewer line which was then connected to the existing 18-inch line. Also included in this work was the relocation of a portion of the 18-inch sewer line that serves University buildings at 771 Commonwealth Avenue and 775 Commonwealth Avenue. A new connection from those buildings to the line will be established as the Projects gets underway.

The proposed renovation of the existing building and the construction of the addition is designed to better support the needs of the students, faculty, and staff of the School of Law. No change to current enrollment is anticipated and only minor increases in faculty and staff are planned. Because the use of more efficient, water conserving fixtures will be provided for approximately the same building population, it is expected that the Project will result in lower overall sewer discharge volume.

The following classifications of uses inside the School of Law building are listed in Table 8-1 below to show the changes in the estimated flows by use.

Table 8-1. Sanitary Use by Classification

Type of Use	Existing (sf)	Proposed (sf)	Discharge Rate	Estimated Change in Flows
School	No change in enrollment		10 gpd/student	No Change
Offices (Faculty)	36,482 sf	42,900 sf	75 gpd/1,000 sf	145 gpd
Function Hall	8,505 sf	9,700 sf	15/seat	2,656 gpd
Support Space	2,885 sf	2,100 sf	Not Rated	No Change

Based on this estimated change in sewer flow from this project, neither a permit, nor a certification is required from the Massachusetts Department of Environmental Protection (DEP). However, this project will be reviewed by the Boston Water and Sewer Commission (BWSC) during the Site Plan Approval process. The BWSC will require a general service application prior to initiation of service.

Note that water conservation devices such as low-flow toilets and faucets will be used within the renovated portions of the existing building and the new addition, which will lower the rate of discharge from the existing conditions.

8.3 WATER SYSTEM

Water service to the project site is supplied by the BWSC. The BWSC obtains its water supply from the Massachusetts Water Resources Authority (MWRA) transmission system and distributes the water locally within the City of Boston. Water service to the site is from an 8-inch water main located immediately to the north of the existing footprint in George D. Hart Way and extends to new 8-inch lines in University Road and Bay State Road.

The existing 6-inch connection to the School of Law building will be replaced with a new line using the existing connection to the 8-inch water main. As proposed, both the domestic water and fire service for the project will be provided by the 8-inch water main in George D. Hart Way. This will be confirmed by the Project engineers when they review the site design and constraints, and discuss the available capacity of the water main with the BWSC.

The estimated water consumption for the existing student and faculty is anticipated to remain the same or be reduced upon completion of the project improvements. As the air conditioning system for the building has not yet been designed, there could be an increase in water consumption to serve air conditioning make-up water requirements. Detailed calculations will be provided at a later date.

Preliminary discussions have not yet occurred with BWSC to determine adequate capacity in the water supply system to serve the Project. Flow tests will be performed for final design of the proposed building fire suppression system during the detailed design phase.

As the Project will continue to use the existing connections to BWSC's water service to the building, the Commissions requirements for meter reading, backflow preventers, fire protection connections, and gates are already in place. The School of Law Tower currently utilizes the BWSC's automatic meter reading system and has a meter interface unit (MIU) in operation. Prior to any water line construction, the University will submit a Site Plan to BWSC for review and approval. Fire protection connections for the Project will need approval by the Boston Fire Prevention Department. Prior to any use of water services, the

University or their designated contractor will submit a general service application to the BSWC.

While the building is not fully designed, it is anticipated that it will use water conserving fixtures, such as sensor-operated low flow sinks with water conserving aerators and sensor-operated low flow toilets, consistent with the University's sustainability goals, the City of Boston Green Building requirements, and the proposed LEED Certification standards.

8.4 STORM DRAINAGE SYSTEM

The existing site is well served by area drains and roof drains connecting to the existing storm drain system, which ultimately discharges to the Charles River via an MWRA culvert. The southern portion of the building expansion area is partly landscaped with mature trees and pathways for the entrance to the existing building and includes both pervious and impervious areas.

The new building expansion will increase the area of impervious surface. The new storm drainage system on the southern side of the project site will include stormwater treatments units for surface runoff and a groundwater recharge system to reduce the volume of runoff and further improve the quality of the stormwater runoff. The northern portion of the building expansion area is currently covered by impervious surfaces, including two underground storage tanks and a loading dock behind the Central Boiler Plant so there will be no expansion of the impervious surface from the addition in that area. Most of the drainage on the northern portion of the site is collected by a trench drain in the vehicle delivery driveway and the remainder of drainage is collected by catch basins along George D. Hart Way. The new collection system will include stormwater treatment units for surface drainage and a substantial groundwater recharge system along George D. Hart Way and to the east of the School of Law Tower. The recharge system will serve both site drainage and rooftop drainage and provide a reduction in total stormwater runoff and an improvement in stormwater quality.

With the redevelopment of this site area, a portion of drainage will be infiltrated to ground water and the peak rate of runoff will be reduced from the existing conditions. The project will also provide improvements to the water quality of the stormwater runoff before it is discharged into the BWSC system and ultimately to the Charles River.

Any new drainage structures on the Project Site will be fitted with standard BWSC Type 5 or Type 13 catch basins. These basins are fitted with sediment sumps and oil/gas traps, to be approved by BWSC. All new catch basins and existing catch basins affected by this project, will receive BWSC plaques, if not already in place, that bear the warning "Don't Dump - Drains to Boston Harbor."

Any sewer and drain connections that are terminated will be cut and capped in accordance with the BWSC standards and by Site Plan Approval from BWSC.

8.5 ELECTRICAL SERVICE

Electrical service to the site is provided by NSTAR, now part of Northeast Utilities. NSTAR currently provides electrical service to the central campus area via two, 13.8k volt lines to a vault in 685 Commonwealth Avenue, which are then fed to the School of Law by two, new 13.8k volt lines owned by Boston University and replaced in 2010.

This work, designed in consultation with NSTAR, anticipated the possible electrical demands from this Project. While the electrical service and energy systems have not been designed for the Project, it is likely that new transformers, located in the penthouse of the addition, will be proposed. Consequently, electrical service for the Project will not disrupt pedestrians or public improvements adjacent to the project site.

Pursuant to its commitment to sustainable design, the University will include energy-efficient lighting, heating, and cooling systems in the design for the building.

8.6 TELEPHONE AND CABLE SYSTEMS

Boston University manages its own voice and data networks through the Office of Information Services and Technology. Verizon New England provides telephone service to the Project area as part of that campus wide network.

The University's fiber optic network delivers data and video service to the Project area through its existing conduits, which are accessed by manholes in the immediate area.

8.7 PETROLEUM FUEL

Prior to the conversion of the Central Boiler Plant to gas in Fall 2010, the 5 boilers were supplied by oil stored in two in-ground oil tanks of 30,000 gallons each, located to the north of the project site. The Project will remove these tanks and replace them with two tanks of 650 gallons each that will be available for emergency use in the unlikely event that gas service is interrupted.

8.8 UTILITY PROTECTION DURING CONSTRUCTION

During construction, infrastructure will be protected using sheeting and shoring, temporary relocations, and/or construction staging as required. The contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all

utilities with the appropriate utility owners and/or agencies. The contractor will also be required to provide adequate notification to the utility owner prior to any work commencing on their utility. Also, in the event a utility cannot be maintained in service during switch over to a temporary or permanent system, the contractor will be required to coordinate the shutdown with the utility owners and project abutters to minimize impacts and inconveniences accordingly.

Appendix 1

ENF FORM

Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: ———————————

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Boston University School of Law		
Street Address: 765 Commonwealth Avenue		
Municipality: Boston	Watershed: Charles River	
Universal Transverse Mercator Coordinates: **326441E, 4690903N**	Latitude: 42° 21' 04" Longitude: 71° 06' 26"	
Estimated commencement date: 6/12	Estimated completion date: 12/15	
Project Type: Rehabilitation	Status of project design: 25 %complete	
Proponent: Trustees of Boston University		
Street Address: One Silber Way		
Municipality: Boston	State: MA	Zip Code: 02215
Name of Contact Person: Richard Jabba		
Firm/Agency: Fort Point Associates, Inc.	Street Address: 33 Union Street, 3rd Flr	
Municipality: Boston	State: MA	Zip Code: 02108
Phone: 617-357-7044	Fax: 617-357-9135	E-mail: rjabba@fpa-inc.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☐Yes ☒No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8))	☒Yes ☐No
a Special Review Procedure? (see 301CMR 11.09)	☐Yes ☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11)	☐Yes ☒No
a Phase I Waiver? (see 301 CMR 11.11)	☒Yes ☐No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)? *Tidelands*
Which State Agency Permits will the project require? *DEP/Chapter 91 License, MWRA 8M*

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:_*Boston University will seek state tax exempt bond financing issued through MassDevelopment for the construction of this project.*

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	2.1		
New acres of land altered		0.0	
Acres of impervious area	1.5	0.2	1.7
Square feet of new bordering vegetated wetlands alteration		0.0	
Square feet of new other wetland alteration		0.0	
Acres of new non-water dependent use of tidelands or waterways		0.4	
STRUCTURES			
Gross square footage	169,820	93,525	263,545
Number of housing units	0	0	0
Maximum height (feet)	264	0	264
TRANSPORTATION			
Vehicle trips per day	670	105	775
Parking spaces	7	-7	0
WASTEWATER			
Water Use (Gallons per day)	See EENF Section 8	Reduced From Existing	See EENF Section 8
Water withdrawal (GPD)	0	0	0
Wastewater generation/treatment (GPD)	See EENF Section 8	Reduced From Existing	See EENF Section 8
Length of water mains (miles)	Service Connection Only	Service Connection Only	Service Connection Only
Length of sewer mains (miles)	Service Connection Only	Service Connection Only	Service Connection Only

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

Has any project on this site been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION:

Describe the existing conditions and land uses on the project site:
The project is located at 765 Commonwealth Avenue and is the site of the Boston University School of Law. It is part of the larger Boston University Central Campus, located in Boston. The project site occupies approximately 2.1 acres and includes the existing Boston University School of Law tower, the associated courtyard, the Central Boiler Plant, and the Pappas Law Library building. This site is bound by the Mugar Library to the west, Storrow Drive to the north, Alpert Mall to the east, and the School of Theology and Commonwealth Avenue to the south.

At the School of Law site, there is an 18-story, approximately 144,160 gross square foot (gsf) building (tower) that supports student classrooms, meeting areas, and some University offices. The Pappas Law Library, which is located on two floors of a 3-story, 25,660 gsf building, is also located on the site. The Central Boiler Plant, a one-story structure that provides heating for many of Central Campus buildings, is adjacent to the west side of the tower. There is more than one acre of open space that surround these buildings that allow for good pedestrian access from all points within the campus. Vehicular access from the west side is from George D. Hart Way, a private way that runs within the north side of the site and is accessed from either University Road on the west side or Granby Street on the east side.

Describe the proposed project and its programmatic and physical elements:

The proposed project will provide the optimum solution to the space and facility needs of the Boston University School of Law by updating the campus infrastructure to support the needs of the students and faculty. This project is composed of the following elements: Restoration of the School of Law tower exterior, rehabilitation of the School of Law tower interior, and construction of a new addition (93,525 gsf, 5 stories) to the School of Law.

The School of Law building needs to be rehabilitated because there have been only minor renovations since it was built in the early 1960s. The exterior envelope needs to be repaired, and the mechanical systems need to be replaced. Furthermore, growth and the changing requirements of teaching and student spaces are the primary reasons for the necessity for additional space.

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

It is important to understand the building and use issues with the School of Law in order to determine what is the best strategy that meets the goals of the University. The School of Law tower is inefficient in terms of both its building systems and design space needed to support student classrooms. Although the tower is structurally sound; the mechanical systems are outdated, noisy, and inefficient. The windows in the tower are single glazed units, which are also very inefficient and allow for substantial intrusion of sound. The roofs and decks are in poor condition and should be replaced. The numerous sealant conditions cause significant leaks through the exterior envelope of the building. The building, regardless of who occupies it, is in need of a new HVAC system, upgraded electrical system, new roofs, decks, and windows. The existing mechanical systems currently serving the tower are either original to the construction of the building (circa 1964) or were installed as part of an upgrade to provide cooling for the building (circa 1976). In almost all cases, the major equipment has exceeded its useful life. The concrete building skin has had severe spalling, which is the result of the outdated and inefficient building systems. There are a high number of system failures, poor energy performance, and excessive maintenance costs. Furthermore, the building design, which currently has

classrooms distributed on all 18 floors, does not easily allow a flow of students to move between different floor levels before and after classes due to the limited elevator space and the number of floors between classrooms.

Another constraint was the designation of the group of School of Law buildings as a historical asset of the Commonwealth. This complex was designed Josep Lluis Sert, and it is recognized as the Sert Complex. Any changes to any portions of this complex need to be addressed in a manner that responds to its historic association.

To resolve these building design and use issues, the project has gone through considerable site and design review since the need for new and improved space for the Boston University School of Law was first identified more than 10 years ago. The first alternative included construction of a new high rise building that would replace the existing tower. After consideration of all the program needs and logistics of relocated the existing functions of the School of Law, it was determined that this alternative was not financially feasible. Another alternative, which included completely covering the outside of the building with a new building façade and to add space, was proposed and reviewed by the University. Although this design was economically feasible and addressed the environmental and space issues, it completely eliminated any historical features identified as part of the Sert Complex, which was not acceptable.

Finally, the current and preferred alternative includes the following components: a) Restore the tower's exterior, b) Rehabilitate the tower's interior with all new building systems, and c) Add new space for classrooms and student services.

New space planning will relocate administrative and faculty facilities to the upper floors and student classrooms and meeting areas to the lower floors. This space planning approach will reduce the student traffic on the elevators. There will also be a new connection to the Pappas Law Library and expansion of it into the new addition and tower.

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

_____

The project is a rehabilitation of an existing building, which is located within area that has been developed for over eighty years. There will also be construction of an addition to support the current student programs and University space needs. There will be little, if any, impacts to be mitigated as a result of the proposed changes. Mitigation measures that will be implemented as part of the preferred alternative, however, include restoration of a historically important building (Sert Tower) and a stormwater recharge system, and less environmental impacts with a more energy-efficient building.

If the project is proposed to be constructed in phases, please describe each phase:

_____

There will be two phases for the School of Law project. Phase 1 will be mainly for the construction of the new addition as well as some early construction activities and will occur between the summers of 2012 and 2014. Phase 2 will begin when Phase 1 construction is completed. The Tower will be rehabilitated between the summer of 2014 and the fall of 2015. Some occupants will be relocated temporarily and some permanently to the new addition during this Phase 2 construction period.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

☐ Yes (Specify_____)

☒ No

if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;

If yes, describe how the project complies with this plan.

_____

Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes ___ No;

If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.
_____

RARE SPECIES:
Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)
☐Yes (Specify_____) ☒No

HISTORICAL /ARCHAEOLOGICAL RESOURCES:
Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?
☒Yes (Specify__ *Boston University School of Law, Courtyard, Law Library, and Power Plant* __) ☐No
If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☒Yes (Specify: *Removal of portion of School of Law Courtyard* _) ☐No

WATER RESOURCES:
Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? _ Yes _X No; if yes, identify the ORW and its location. _____

Are there any impaired water bodies on or within a half-mile radius of the project site? _X _Yes ___No; if yes, identify the water body and pollutant(s) causing the impairment: __ *Charles River, Phosphorous* _____.

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes __X_No

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:_____

Currently, stormwater management on the site consists of approximately 12 catch basins (all connecting to a 96-inch combined sewer overflow/drain. The roof areas of the proposed building will tie into an underground recharge system consisting of underground perforated pipe surrounded by crushed stone. This system will retain runoff from any storm less than 1-inch of runoff depth and will overflow to the 96-inch drain flowing to the Charles River only if the runoff depth is greater than 1-inch. These proposed measures will substantially improve stormwater runoff and water quality from the project site.

MASSACHUSETTS CONTINGENCY PLAN:
Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes _X_ No ___ ; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):_ Prior spills were related to the use of underground fuel storage tanks, which are no longer used and will be removed as part of this project. *RTN 3-0011511, A1; RTN 3-0011800, A1; RTN 3-0020760, A2*

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes ___ No _X__; if yes, describe which portion of the site and how the project will be consistent with the AUL: _____.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes ___ No _X__ ; if yes, please describe:_____

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:_____
The Proponent will take an active role in ensuring that waste removal and disposal during construction and operation will be in conformance with the City and DEP's Regulations for Solid Waste. Waste during the construction stage will be generated largely from the rehabilitation of the School of Law building.
Will your project disturb asbestos containing materials? Yes _X__ No ___ ;

if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment: _____

During the project construction, contractors will be required to limit idling vehicles to no more than five minutes unless in active use.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes ___ No _X__ ;
if yes, specify name of river and designation:

ATTACHMENTS:

1. List of all attachments to this document.
2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.
3. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
4. Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.
5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
7. List of municipal and federal permits and reviews required by the project, as applicable.

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1)
___ Yes _X__ No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	__0.57_____	___0.45____	___1.02___
Internal roadways	__0.15_____	___0.00____	___0.15___
Parking and other paved areas	__0.79_____	__ -0.17____	___0.62___
Other altered areas	__0.64_____	__ -0.29____	___0.35___
Undeveloped areas	__0.0_____	___0.00____	___0.00___
Total: Project Site Acreage	__2.14____	___0.00____	___2.14___

B. Has any part of the project site been in active agricultural use in the last five years?
___ Yes _X__ No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use?
___ Yes _X__ No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes _X__ No; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___ Yes__X_ No; if yes, does the project involve the release or modification of such restriction? ___ Yes ___ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes _X__ No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No _X__; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan
Title: *Boston University Institutional Master Plan Amendment*__ Date__ 2003-1010 as Amended _

B. Describe the project's consistency with that plan with regard to:
1) economic development _____ *The project will create new construction jobs as well as continue existing employment by the University.* _____
2) adequacy of infrastructure __*There is adequate infrastructure to support this project, which places little or no additional demand on the water, sewer, or transportation systems.* _____
3) open space impacts _____ *The project is located on an existing developed site and will result in a minor loss of open space of approximately 0.4 acres.* __
4) compatibility with adjacent land uses___ *The project is entirely compatible with existing adjacent land uses, which are composed mainly of buildings on the Boston University Charles River Campus*. _____

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: __*Metropolitan Area Planning Council*_____
Title:___ *MetroFuture* _____ Date____ *May 2008* _____

D. Describe the project's consistency with that plan with regard to:
1) economic development _____ *The project will support job growth built around educational institutions and improved schools.* _____
2) adequacy of infrastructure _____ *The project supports the Plan's strategy to support growth in areas already served by infrastructure.* _____
3) open space impacts _____ *The project will concentrate development in already developed area and thus minimize development of open space in other areas*.

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___ Yes _X__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **rare species or habitat**? ___ Yes _X__ No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the

current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes _ X __ No.

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? _X__ Yes ___ No; if yes, specify, in quantitative terms: *The project will require a Chapter 91 License for approximately 23,031 sf of existing building footprint and approximately 4,100 sf of new building footprint in filled tidelands.*

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? _ X __ Yes ___ No; if yes, specify which permit: *Chapter 91 License.*

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? _ Yes _ X _ No; if yes, has a Notice of Intent been filed? __ Yes ___ No; if yes, list the date and MassDEP file number: _____; if yes, has a local Order of Conditions been issued? ___ Yes ___ No; Was the Order of Conditions appealed? ___ Yes ___ No. Will the project require a Variance from the Wetlands regulations? ___ Yes ___ No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site*:* *None*

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean		
Designated Port Areas		
Coastal Beaches		
Coastal Dunes		
Barrier Beaches		
Coastal Banks		
Rocky Intertidal Shores		
Salt Marshes		
Land Under Salt Ponds		
Land Containing Shellfish		
Fish Runs		
Land Subject to Coastal Storm Flowage		
Inland Wetlands		
Bank (lf)	0	
Bordering Vegetated Wetlands	0	
Isolated Vegetated Wetlands	0	
Land under Water	0	
Isolated Land Subject to Flooding	0	

Bordering Land Subject to Flooding	_____0_____	_____
Riverfront Area	_____0_____	_____

D. Is any part of the project:
1. proposed as a **limited project**? ___ Yes _ X __ No; if yes, what is the area (in sf) ?_
2. the construction or alteration of a **dam**? ___ Yes __ X _ No; if yes, describe:
3. fill or structure in a **velocity zone** or **regulatory floodway**? ___ Yes __ X _ No
4. dredging or disposal of dredged material? ___ Yes __ X _ No; if yes, describe the Volume of dredged material and the proposed disposal site:
5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? ___ Yes _ X __ No
6. subject to a wetlands restriction order? _ Yes _ X __ No; if yes, identify the area (in sf):
7. located in buffer zones? ___Yes _ X __No; if yes, how much (in sf) _____

E. Will the project:
1. be subject to a local wetlands ordinance or bylaw? ___ Yes _ X __ No
2. alter any federally-protected wetlands not regulated under state law? ___ Yes _ X __ No; if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? _ X _ Yes __ No; if yes, is there a current Chapter 91 License or Permit affecting the project site? _X_ Yes ___ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands: *See Section 7, Tidelands in the ENF.*

B. Does the project require a new or modified license or permit under M.G.L.c.91? _ X _ Yes _ No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current _ 0.0 __ Change _ 0.6 __ Total _ 0.6 _
If yes, how many square feet of solid fill or pile-supported structures (in sf)? *0 sf*

C. For non-water-dependent use projects, indicate the following:
Area of filled tidelands on the site:_____1.2 Acres_____
Area of filled tidelands covered by buildings:___0.6 Acres _____
For portions of site on filled tidelands, list ground floor uses and area of each use:
_ Institutional/educational – 0.5 Acres; Mechanical – 0.1 Acres __
Does the project include new non-water-dependent uses located over flowed tidelands? Yes ___ No _ X __
Height of building on filled tidelands____ 264' (existing), 98' (proposed) _____

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks. *See Section 7, Tidelands in the ENF.*

D. Is the project located on landlocked tidelands? _ X _ Yes __ No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact: *The public rights of fishing fowling and navigation in private tidelands will not be affected by the project. The project will provide open space and public access as provided under the Chapter 91 regulations. The project will maintain pedestrian pathways to ensure safe and adequate public access to and through the site, as well as to the pedestrian bridge that crosses Storrow Drive and leads to the Charles River Esplanade (see Section 7, Tidelands in the ENF.)*

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? __X_Yes ___ No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact: *Because the project falls within the City of Boston Groundwater Conservation Overlay District, the stormwater management system will include a stormwater recharge system designed to comply with Article 32 of the Boston Zoning Code. The final design of this system will require the approval of the Boston Water & Sewer Commission. (See Section 6.7, Stormwater Management and Water Quality in the ENF.)*

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? _ Yes _ X _ No; *(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.) See Section 7, Tidelands for a discussion of this topic.*

G. Does the project include dredging? ___ Yes _X__ No; if yes, answer the following questions:

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? ___ Yes _ X __ No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan? ___ Yes _ X __ No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ___ Yes _ X __ No; if yes, specify which permit:

C. If you answered "No" to <u>both</u> questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to <u>either</u> question A or question B, fill out the remainder of the Water Supply Section below.

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes __ X _ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? _X__ Yes ___ No; if yes, specify which permit: *MWRA 8M (This is for work within easement held by the MWRA and not for a connection to the pipe within the easement area).*

C. If you answered "No" to <u>both</u> questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to <u>either</u> question A or question B, fill out the remainder of the Wastewater Section below.

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ___ Yes _ X __ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? _ Yes_X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___ Yes _ X __ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ___ Yes _ X __ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___ Yes _ X __ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ___ Yes _ X __ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes _ X __ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes _ X __ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste**

Section. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes _ X __ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? __ Yes _ X _ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? ___ Yes _ X __ No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? ____Yes ____ No; if yes, attach correspondence

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? _ X __ Yes __ No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? __ X _ Yes _ X _ No; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes _ X __ No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes ___ No; if yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

The project will have minor impacts on inventoried historical resources. See Section 4. Historical Resources in the ENF for a discussion of this topic.

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

See Section 4, Historical Resources in the ENF for a discussion of this topic.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   (Name)____ Boston Herald _____(Date)____ June 20, 2012 _____

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

June 14, 2012 _____ June 15, 2012 _____

Date Signature of Responsible Officer or Proponent

Date Signature of person preparing NPC (if different from above)

Gary Nicksa, Senior Vice President for Operations	Richard Jabba
Name (print or type)	Name (print or type)
Trustees of Boston University	Fort Point Associates, Inc.
Firm/Agency	Firm/Agency
One Silber Way, 9th Floor	33 Union Street, 3rd Floor
Street	Street
Boston, MA 02215	Boston, MA 02108
Municipality/State/Zip	Municipality/State/Zip
617.353.6500	617.357.7044 x208
Phone	Phone

Appendix 2

Distribution List

STATE GOVERNMENT

Elected Officials

Senator William N. Brownsberger
Room 213A
State House
Boston, MA 02133

Representative Michael J. Moran
Room 443
State House
Boston, MA 02133

Executive Office of Energy and Environmental Affairs

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

MEPA Office

Undersecretary for Policy
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Department of Environmental Protection (DEP)

Kenneth Kimmell, Commissioner
Commissioner's Office
MassDEP
One Winter Street
Boston, MA 02108

Ben Lynch
MassDEP
Division of Wetlands and Waterways
One Winter Street
Boston, MA 02108

Nancy Baker, MEPA Coordinator
MassDEP Northeast Region
205B Lowell Street
Wilmington, MA 01887

Massachusetts Department of Transportation

Lionel Lucien
Public/Private Development Unit
10 Park Plaza
Boston, MA 02116

Michael Trepanier
Attn: MEPA Coordinator
MassDOT, District Office #6
185 Kneeland Street
Boston, MA 02111

Massachusetts Coastal Zone Management

Massachusetts Coastal Zone Management
Attn: Project Review Coordinator
251 Causeway Street, Suite 800
Boston, MA 02114

Massachusetts Department of Conservation and Recreation

Division of Urban Parks
Attn: MEPA Coordinator
251 Causeway Street, Suite 600
Boston, MA 02114

Massachusetts Division of Marine Fisheries

Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

Massachusetts Historical Commission

Brona Simon, Executive Director
Massachusetts Archives Building
220 Morrissey Boulevard
Boston, MA 02125

Massachusetts Water Resource Authority

Attn: MEPA Coordinator
Charlestown Navy Yard
100 First Avenue, Building 34-2
Boston, MA 02129

Metropolitan Area Planning Council

60 Temple Place, 6th Floor
Boston, MA 02111

CITY OF BOSTON

Mayor's Office

Honorable Thomas M. Menino, Mayor
Boston City Hall
One City Hall Square
Boston, MA 02201

Jay Walsh, Director
Mayor's Office of Neighborhood Services
One City Hall Square, Room 708
Boston, MA 02201

Mitchell Weiss, Chief of Staff, Mayor's Office
Boston City Hall
One City Hall Square, 5th Floor
Boston, MA 02201

Boston City Council

Stephen J. Murphy, President
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor Michael P. Ross
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor Felix G. Arroyo
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor Ayanna Pressley
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor John R. Connolly
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Boston Environment Department

Bryan Glascock, Director
Boston Environment Department
One City Hall Square, Room 805
Boston, MA 02201

Ellen Lipsey, Executive Director
Boston Landmarks Commission
One City Hall Square, Room 805
Boston, MA 02201

Executive Secretary
Boston Conservation Commission
One City Hall Square, Room 805
Boston, MA 02201

Boston Public Health Commission

1010 Massachusetts Avenue
Boston, MA 02118

Boston Redevelopment Authority

Peter Meade, Director
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201

Erico Lopez, Project Manager
Boston Redevelopment Authority
City Hall Plaza, 9th Floor
Boston, MA 02201

Boston Transportation Department

William Conroy
One City Hall Square, Room 721
Boston, MA 02201-2026

LIBRARY

Boston Public Library

Boston Branch
700 Boylston Street
Copley Square
Boston, MA 02116

Boston University Community Task Force

c/o Joseph Walsh
Boston University
121 Bay State Road
Boston, MA 02215