THE 2006 ROTCH TRAVELLING SCHOLARSHIP
FINAL COMPETITION PROGRAM

SCIENCE AT THE URBAN FRINGE

Life science and research buildings have become important elements of the urban landscape. Within the Boston metropolitan area, there have been important urban developments focused on life science in the Kendall Square | MIT campus area, in the Longwood Medical area, on the BU campus and several are projected for Harvard's expanded campus in Allston. Requiring massive floor space, these buildings often end up as being autonomous object, paying little or no attention to their neighbors, and concerned mostly with their own internal logic.[1]The challenge for the designers is to conceive a building that fulfills the needs of the scientific community while also contributing to the urban environment.

[1] Charles Correa, "The Logic of Complexity", an essay from *Building Blocks of the Mind* published by the McGovern Institute for Brain Research at MIT, October 2005.
http://web.mit.edu/evolving/buildings/bcsc/correa.html

I. THE PROJECT

Harvard University is considering the creation of a new science building as the first step towards an expanded campus in the Allston section of Boston. The site and size of the first science facility have not been finalized yet, however, for the purpose of the Rotch final competition, a program has been developed for the new science initiative and a site selected south of Western Avenue.

It is important to emphasize that the program and site for the first science facility, described in the following pages, have been defined for the purpose of the Rotch competition only and remains fictional. Harvard University does not endorse nor is it involved in assumptions made for the purpose of the Rotch competition.

Harvard's new initiative in Allston represents a unique opportunity to reinvent the University. As demonstrated by the example of Harvard Yard, an enduring physical structure (as defined by buildings and open spaces) is crucial to establishing the character and life of a place. Harvard's first science building in Allston represents the beginning of a new built environment and an opportunity to cross traditional school boundaries and create a flexible, multi-disciplinary research facility.

The science facility will house about 1,000 workers including faculty, staff, graduate and undergraduate students. The building can be conceived as one structure or a series of interconnected buildings. Internal circulations, within a large structure or among the separate entities of a science complex, have to be designed as informal meeting places fostering exchanges among scientists. The science facility is meant to serve as a collaborative space where faculty, staff, and students from diverse fields of research meet. The sciences initiatives (3) will each house state-of-the-art labs, classrooms, offices, seminar rooms and related amenities. Common areas such as a daycare center, a café and a post-office will be provided. It is also expected that the Business School and the neighboring communities will use these amenities and they should be designed to allow for the intermingling of the building users, Harvard's affiliates and neighboring communities. The science facility should be designed to foster interaction among its users and convey that it is a unique place for Harvard and abutting communities.

The design project should investigate the overlap of the shared spaces designed for the scientific communities, and the "usability" of the public spaces designed for the larger Harvard and Allston communities. The common science facilities and circulation network should be designed to nurture a collegiate, interdisciplinary experience. The designer should think strategically about the place, the amenity, and what factors will make people interact better.[2] The science building type, with its large floor plate and moderate height requirements, needs to be reinvented to fit within the urban context. The open space should be integrated with the building design, as together they will convey the institutional character of the science facility while providing a major contribution to a neighborhood lacking basic green space.

[2] Chris Larsen, "Putting Humanism Back into Architecture" (an interview with Sydney architect Richard Huxley), *Urban Land*, November/December 2005, page 176

II. CONTEXT [Harvard in Allston]

As expressed in Harvard's interim report[3], Harvard seeks to shape an active and animated environment in its planning for Allston; one that fosters both community interaction and scholarly interchange. Its design will need to respond successfully to its changing surroundings. Upon its completion, in the absence of a supportive urban context, the science facility will function somewhat autonomously. Transforming the industrial environment, it should be a vibrant, successful "place" contributing to the establishment of Allston as an attractive destination. Over time, as surrounding parcels and streets are developed, the first science phase will have to be integrated into the larger science community, Harvard's campus community and into the North Allston Community[4]. The challenge is to conceive an architectural project that will adapt to changing conditions.

III. THE SITE

The site selected for the competition is one of the three sites identified for sciences in Harvard's Master Planning process[5]. The site is 3.7 acres with street frontage on the south side of Western Avenue. It is a large parcel that will be visually connected to the abutting neighborhood via the extension of Kingsley Street. On the west side, the adjacent site is currently used for an auto dealer but could be used, in the long-term, for a new Harvard Museum. On the east side, the site is abutted by WGBH, a public radio and television station, that will move out in the next few years and this site is targeted for the expansion of the science campus. The two smaller parcels south of the site are planned for graduate housing and will act as a threshold between academic functions and the residential neighborhood, where the dominant housing type is a triple-decker. On the north side of Western Avenue, there is the Charlesview apartment complex and, to its east, the Harvard Business School campus. The HBS has the most significant concentration of neo-Georgian architecture on the Harvard campus[6]. The unique character of the HBS campus is perceived as a critical component of the school's identity. Consequently, while it is understood that the expanded campus will be contemporary in its architecture, it is also expected that it will show its affiliation with Harvard's traditional architecture.

[3] Cooper Robertson and Partners Interim Report for Allston Master Plan [http://www.allston.harvard.edu/vision/crp.htm]
[4] North Allston Neighborhood Plan, Presentation: Vision for North Allston, June 21, 2004 [http://www.ci.boston.ma.us/bra/pdf/publications//NAllstonSFPfinalDraft.pdf]
[5] Allston Exhibit Room [http://www.allston.harvard.edu/allston_room/room_public.htm]
[6] For an analysis of the Harvard's architectural style see the section on "Architecture" of Harvard Patterns [http://www.hpai.harvard.edu/pp/patterns/harvard_patterns.htm]

IV. THE PROGRAM

Science program:

- 3 research initiatives [minimum 35,000 nsf each]
  - [24] "interchangeable boxes" of 40'x25'laboratory modules. (For model of laboratory modules refer to the website of the National Research Council of Canada http://www.bri.nrc-cnrc.gc.ca/labspace/modules_e.html)
  - [5] 1,000 nsf, minimum, for lobby, lounges & informal meetings, coatrooms and personal storage for staff (including white boards, sciences magazines display, coffee stations, etc. The lounges could be combined with circulation spaces.)
  - [10] 150 nsf offices for principal investigators in proximity to lab modules. (Visual connections with lab modules are desirable.)
  - [15] 100 nsf offices for support staff, i.e. secretarial staff.
  - [6] 300 nsf restrooms
  - [1] 1,000 nsf for support space
- Shared sciences facilities
  - [1] tiered classrooms. (Seating capacity: 90)
  - [2] experimental flat classrooms. (Seating capacity: 30)
  - [1] 600 nsf scientific library and science magazines room. (Can be combined with café and/or athletic facilities.)
  - [1] 4,000 nsf vivarium. (To be located in the basement. Access to be controlled.)
  - [1] 2,000 nsf for scientific specialized equipment. (To be located in the basement taking into consideration the weight of the equipment. Access to be controlled.)
- Service facilities
  - [3] 100 nsf freight elevators
  - [1] 100 nsf emergency response room per floor
  - [1] 500 nsf sterilized room per floor

Common facilities

- Daycare Center [approximately 5,000 nsf]
  - [6] 600 nsf classrooms for infants, toddlers and preschool
  - [1] 500 nsf kitchen, staff lounge & offices
  - [1] 300 nsf lobby/"cubbies" room for children
  - [1] 200 nsf unisex bathrooms
  - [1] approx 400 nsf for support space
- Athletic facility [approximately 1,000 nsf]
  - [1] 500 nsf Nautilus room
  - [1] 500 nsf for a multi purpose room for yoga and/or aerobics
  - [2] 500 changing rooms with lockers, restrooms and showers
- Café [approximately 3,800 nsf]
  - [1] Dining area. (Seating capacity: 100)
  - [1] 800 nsf serving area. (Counter space, "thematic" workstations, e.g. pasta, grill, ethnic food etc., and self-serve area.)
  - [1] 800 nsf kitchen support and preparation area
  - [1] 800 nsf for support space (administrative office, staff changing room and lockers)
  - [1] 200 nsf public restrooms
  - [1] 200 nsf storage
- Post office [approximately 1,000 nsf]
  - [1] 500 nsf service counter, reception and waiting
  - [1] 500 nsf support space and storage

Mechanical Requirements

- Floor to floor height of 18 feet to allow for mechanical space from ceiling to floor.
- An additional floor/ roof top of 20 feet is to be provided to house mechanical equipment. (The mechanical floor can be integrated to the building or treated as a roof structure with a screening system.)

Circulation

- Circulation spaces, including corridors, elevators lobbies, staircases, should be designed to be habitable spaces fostering informal exchanges and communications.

Support Facilities

- Drop-off area for day care facility
- Bicycle parking. (30 spaces secured and weather protected.)
- 100 vehicle parking spaces. (Below grade parking.)
- Two 30' truck access with 500 nsf loading dock. (Can be underground.)
- Weather protected waiting area for Harvard shuttles

Support facilities can be located within the building envelope or as outdoor/on-site facilities.

Exterior spaces:

- Exterior play area for Daycare Center (8,000 gsf)
- Exterior-informal play area for scientists (e.g. volleyball court)
  Exterior café / terrace (seating capacity: 40)

V. DELIVERABLES

The presentation is limited to four 30"x40" boards to be displayed side-by-side vertically. No models or projections from the boards are permitted although model photographs or drawings may be mounted on boards. Drawings should be clearly labeled but no descriptive text shall exceed 100 words.

The following drawings constitute the minimum required documentation for the project:

- Site plan [scale 1/200]
- Ground level floor plan and typical floor plan(s) [1/32" or larger]
  The floor plans should illustrate flexibility in reassigning the research spaces along the building's spine/core made of the common and shared spaces.
  The ground level plan should illustrate interior and exterior spaces contributing to the building(s) public spaces and common spaces.
- Longitudinal building section [1/32" or larger]
- Lateral building section [1/32" or larger]
  Sections should illustrate the connections between the shared scientific spaces, the public interior common spaces and the open spaces/streetscape.
- Three-dimensional representation(s) of science building within the urban context [1 minimum]
- Three-dimensional representation(s) of the interior common spaces [1 minimum]
- Sample (photographs or renderings) of material and color palette for the building exterior material(s)
  Three dimensional representations and material/color palette should illustrate the competitor's intents in representing the institutional character of the proposed research building.

Please note that:

- The jury has no preference for electronic renderings or hand drawings.
- Finalists should be prepared to provide PDF files — high resolution — of submitted drawings. The Rotch Committee reserves the right to use the drawings for publication.

VI. CRITERIA FOR EVALUATION

1. **Adaptable design:** design for a flexible program that will allow the built environment to adapt to new uses and evolve over time. The design should provide spaces where informal as well as formal interactions can take place among different kinds of users. To encourage interdisciplinary research, teams need to be able to form and co-locate quickly. For example, the program specifies labs for 3 research initiatives of equal size. It is very likely that, in the near future, the number of research initiatives will change and their size may also be modified according to changes in grant allocation, faculty, academic focus, etc. The planning/disposition of the laboratory modules should be conceived to allow for reallocation or regrouping that reflect these changes.

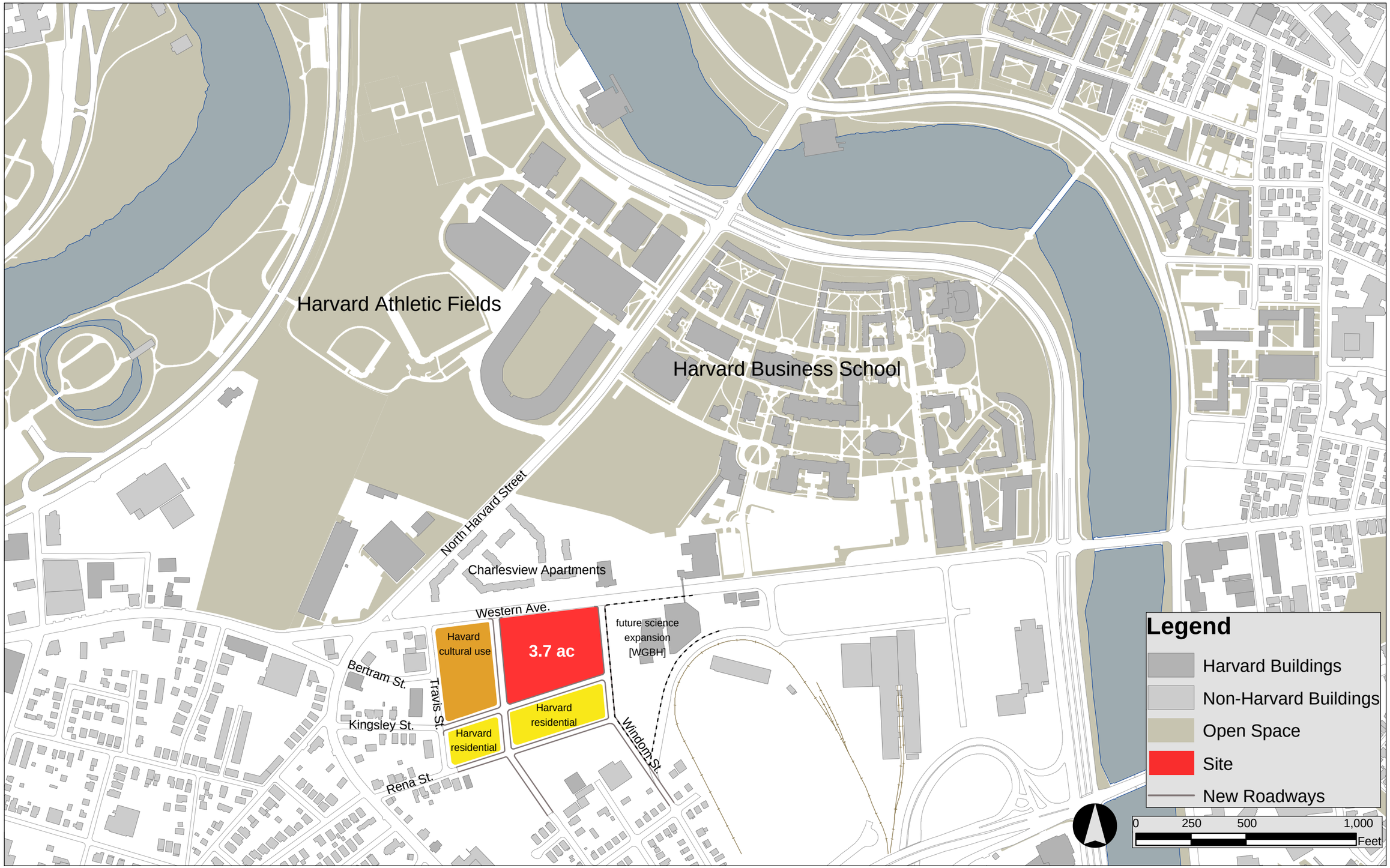
2. **Sense of place:** establish a setting that provides for a sense of place. The "sense of place" has to be created for the scientific community that will inhabit the "space" with the typical idiosyncrasy in relation to time (a 24 hour day campus) and enhance the "student life" within the expanded campus. It also has to fulfill the University's commitment to improve the urban environment along Western Avenue. The urban design proposal and its integration with the project will be critical for selecting the winning entry.

3. **The building's architecture:** create a formal and spatial language that recalls and considers Harvard's traditions while setting a direction for the future. The main challenge is to create a science research facility that will express in its built form the University's vision for its new academic program in interdisciplinary sciences. The proposed science project has to reflect its high-tech research function while also conveying its institutional affiliation.

4. **Presentation criteria:** provide a credible "story board"/narrative to explain how the proposed building would be experienced by all users. Quality, completion, clarity and effectiveness of presentation will be key in selecting the winning entry.

VII. ATTACHMENTS

1. Site plan __ *Base map source: Harvard University Planning Resources.*
2. Aerial picture __ *Base map source: Harvard University Planning Resources.*
3. Oblique view of Western Avenue _ *Base photography source: Allston Initiative, Harvard University. © Peter Vanderwarker*
4. Ground level view of the site from Western Avenue __ *Base photography source: Allston Initiative, Harvard University. © Peter Vanderwarker*



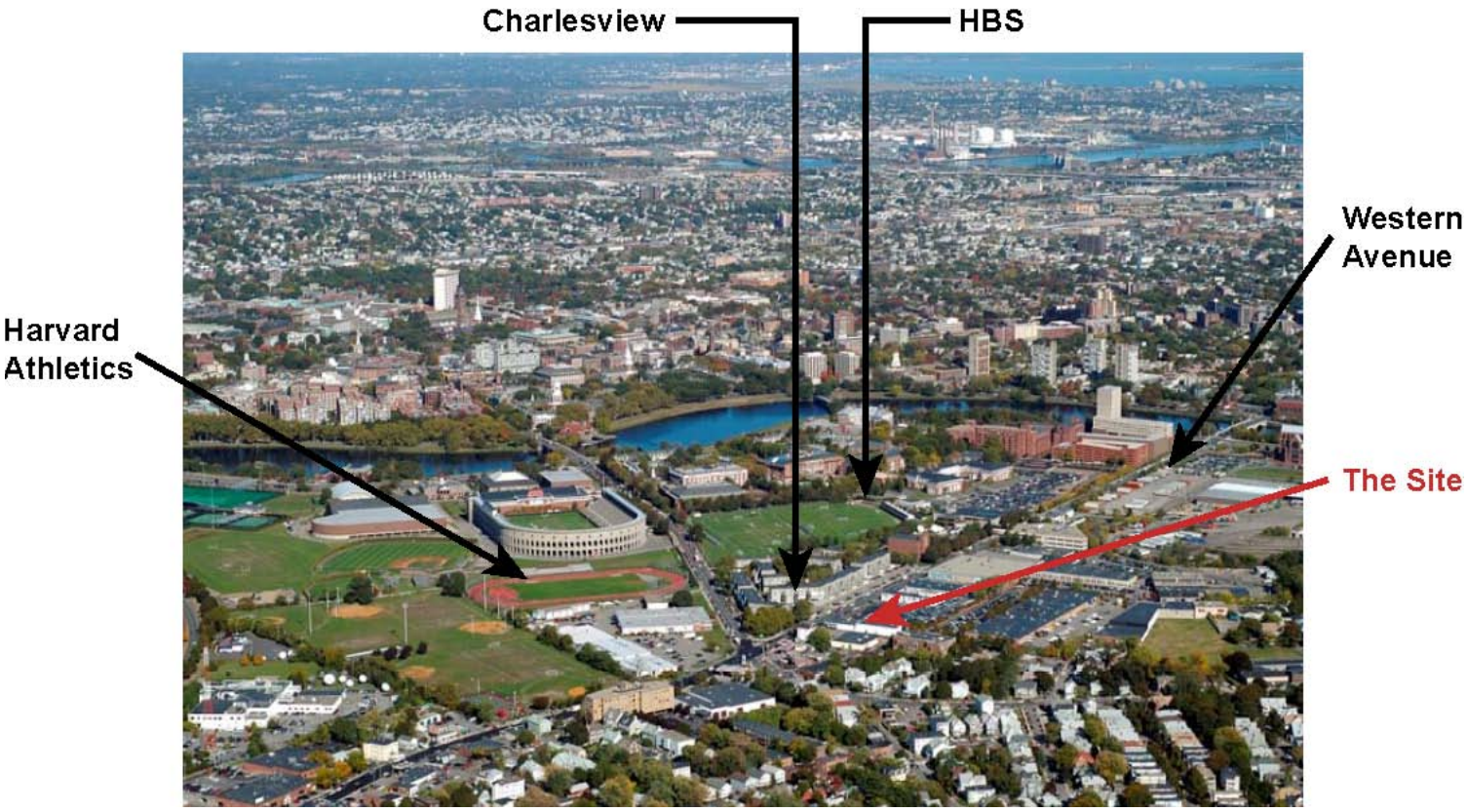
Site Map

Base map source: Harvard University Planning Resources
Site and context added for the purpose of the Rotch Competition

Aerial Picture

Base map source: Harvard University Planning Resources
Site and context added for the purpose of the Rotch Competition

Attachments 3 & 4



Oblique view of Western Avenue

The site seen from Western Avenue (looking west)