



**Architecture in the
Fourth Dimension**

**Methods + Practices
for a Sustainable
Building Stock**

November 15 - 17, 2011 / Boston, Mass., USA

THE MID-POLIS

The 2011 Open Building Competition Challenge v.2011.05.31

We are pleased to announce the following competition sponsors:

Baumschlager&Eberle
Suntly
Siemens
CannonDesign
HOK
Ascension Health
Herman Miller
Paul Lukez Architecture

The Design Challenge

As metropolises around the world continue to mature, the zones between their inner (historic) core and their outer (suburban) fringe evolve and mutate in many forms. This *mid-polis* condition represents a fruitful opportunity to re-define urban connections between center and edge. With that in mind, we have selected a site that is ripe for such a new intervention. The site is located in Somerville, Massachusetts, an “inner suburb” also closely tied to the City of Boston through history, future transit connections and existing infrastructure. This is the context for the competition challenge.

The competition asks entrants to consider how familiar and new urban patterns and building typologies can serve to redefine this mid-polis site. The selected urban pattern and building types for this site will face significant challenges in the 21st century. They must be at the same time stable, lovable, energy effective infrastructures of space and form, adaptable to inevitable changes of use or function. How will the proposed urban morphology and building types support changing programmatic, economic and societal forces over time while maintaining a coherent built form that does not become functionally and stylistically obsolete in 30 – 50 years? Thus, the key issue in this competition is the design of an urban fabric and more detailed design of one building type of enduring quality – so excellent that over 50 or more years, the uses and functions in the urban spaces and inside the buildings can change as cells are replenished in a living organism. That is the design challenge.

Jury

A distinguished, international jury will judge the submissions.

Andres Mignucci (Andrés Mignucci Arquitectos Puerto Rico)
Renee Chow (UC Berkeley, USA)
Paul Lukez (Paul Lukez Architecture, Boston, USA)
Zhang Lei (Nanjing University, China)
Shigeru Aoki (Tokyo Metropolitan University) and Shinichi Chikazumi (Japan)
Jaehoon Lee (Dankook University, Korea)
Phil Astley (UCL/Bartlett, London, UK)
Paul Strohm (HOK Architects and Planners, USA)

Awards *rev.2011.05.31

Winning entries will be awarded monetary prizes and stipends for travel and will be recognized during the conference. The Eberle Open Building Award will recognize the competition winner, and the Sunty Open Building Award recognizes the second prize winner.

The Eberle Open Building Award (First Prize): \$3000

The Sunty Open Building Award (Second Prize): \$2000

Third Prize: \$750

Two Citations: \$250 each

All student prize- and citation winners will be offered an \$800 stipend to help cover the costs of attending the conference should they decide to attend. In addition to the stipend, student prize-winners attending the conference may attend all lectures and conference sessions without paying the conference fees. See 'Distribution of Awards' later in this document for information regarding the travel stipend and the distribution of award money in the case of team entries.

Designing in the Fourth Dimension

The competition challenge is focused on two important functions of contemporary neighborhoods: housing and healthcare/wellness. In the Somerville site, the housing stock requires greater variety and levels of affordability. Furthermore, the current social structure demands conveniently located built spaces and open spaces to support health care and wellness. Both housing and healthcare, however, are expected to undergo constant change, and thus require architectural and urban infrastructures that offer a high degree of flexibility over time. The challenge is to conceive an urban architecture independent of specific functions - an ordinary high quality architectural typology with its own character, sense of place and morphology that can effectively and happily accommodate changing uses on the variable cycles of urban transformation. In considering this imperative, we expect that strong consideration will be given to natural illumination deep inside built space the result being that a narrow-floor-plate building morphology may be the dominant built-form theme.

The challenge asks entries to envision an initial scenario of uses and functions, and another that will gradually transform this site. These are articulated in the "Competition Program" below. One scenario will be implemented in the initial build-out of the site. The second scenario is envisaged for 30 - 50 years in the future. In the first instance, there will be a very strong focus on healthcare facilities (see details below), because the aging population is increasingly in need of a wide range of health and wellness services, not corralled in large stand-alone institutions but woven into the fabric of the everyday environment. In the second scenario, 30 – 50 years in the future, these healthcare functions will have been dispersed or consolidated to other locations, and housing and other urban uses will have replaced the healthcare functions in the same urban spaces and buildings. In this transformation of uses, the building stock itself will remain largely intact, mutating incrementally and partially to accommodate the changes of use. Boston's Fort Point Channel district, the Wharfs along the Boston Harbor and Boston's Back Bay in Boston are both excellent examples. Other examples in other countries include the fabric of Amsterdam's historic center, the historic fabric of Paris, or Bern, Switzerland, or the historic fabric of Kyoto, all of which have been subject to incremental and piece-meal transformation while retaining their traditional, thematic characteristics.

We recognize that living urban tissues constitute our enduring physical reality and only come into wholeness in time. Meanwhile, modes of living and technology are as dynamic as society in general. Therefore, what we build today will be extended and adjusted (and sometimes demolished). Buildings that are initially planted in the built field may change before the fields' structure. The same happens in buildings – we are learning once again to build a sustainable stock, while accepting that patterns of inhabitation change more quickly. As a result, use functions are becoming distinguished from architectural form. Therefore, some qualities of this ordinary built fabric are more stable and long-lived. An environmental hierarchy reveals itself when we observe these patterns of change, a hierarchy that makes it possible for this dynamism to be managed. This is the theory of the competition challenge.

The Site

The competition focuses on a triangular site of 48 acres (19.4 hectares) in Somerville, an "inner ring" suburb of Boston, with dense housing built around the turn of the 19th century. Somerville is a city whose topography has been altered repeatedly over time, as a way of accommodating new infrastructure systems and districts. Rivers, hills, wetlands etc. were re-configured through land filling and excavation, creating a new landscape, in many ways far removed from its bucolic past. Somerville's history is rich, and plays an important role in the American revolutionary war, as General Washington surveyed the position of British cannons protecting Boston from the heights of neighboring Prospect Hill. Much of Somerville is occupied by a dense mat of multifamily housing and mixed-use buildings dating from the 19th to the early 20th century, with 'double-decker' and 'triple-decker' housing serving as the primary typologies for housing alongside traditional row buildings in mixed-use nodes (such as Davis, Union, and Porter Squares). In the last decades, these low-cost apartments all over the greater Boston area have been converted into owner-occupied condos as

neighborhoods become gentrified and property values have increased. Greater property values have lead, in turn, to increased density in new construction and many new highly dense, mixed-use buildings have been built, especially in Cambridge. Boston is a city well-served by its mass transit system (the Massachusetts Bay Transit Authority, or MBTA), and transit-oriented development is common in the city and its surrounding communities served by the transit system.

Today the McGrath Highway, a major route to Cambridge and downtown Boston, is elevated on concrete piers as its cuts through the competition site; the highway divides the neighborhoods yet is an important economic feeder. In the near future, this highway will be rebuilt as a ground-level “boulevard” with landscaping and pedestrian-friendly features. Perhaps in response to the construction of the elevated highway, the adjacent neighborhoods of housing changed during the 20th century to industrial and big-box uses. The exceptions are a handful of brick industrial buildings that occupy the southern and eastern edges of the site, presumably built to take advantage of the railroads. Already some of these industrial buildings have transformed from industrial use to mixed use (loft housing, creative arts, and high-tech manufacturing) as modern occupants have taken over the buildings.

The scenario that will play out in the future of the site will begin with the demolition of the elevated highway. When it becomes a boulevard, land use patterns will change drastically as the accessibility to the core of the site changes and the value of the land increases in response to new connections to the main fabric of Somerville. A new extension to the MBTA’s Green Line (a rail-based transit line that is a combination subway/surface light rail/street car in various parts of the city) will serve the east edge of the site (marked on the map) and will result in increased pedestrian traffic between the nearby Union Square and the site, as well as a new demand for housing and services on the site itself.

Competition entrants are asked to consider these facts as part of their proposal. The existing street network within the site can be retained or reconfigured. The existing buildings within the site boundaries can also be demolished or some retained. Traffic access points to the surrounding streets must remain as they are shown on the site diagram below.

SITE BOUNDARIES



MAP KEY

- ① FUTURE MBTA GREEN LINE STATION
- ② BERMED RAIL (ELEVATED ON EARTH EMBANKMENT)
- ③ ELEVATED HIGHWAY (TO BE REPLACED BY ON-GRADE 4-LANE BOULEVARD W/ 3m PLANTED MEDIAN)
- ④ INDUSTRIAL AREAS
- ⑤ COMMERCIAL AREAS
- ⑥ RESIDENTIAL NEIGHBORHOODS

NOTE: MAPS ARE NOT SHOWN AT SCALE

Submission Requirements

Each submission must show

- a. An urban tissue weaving the Somerville site into the surrounding urban fabric, addressing transport, public services and private development. This can be designed in some detail, or alternatively, submissions can propose a “form-based code.” In all cases, question of “front” and “back” must be addressed; the problem of the “margin” between public space and private territory must be considered carefully; and the principle that deep floor-plate buildings are generally to be avoided must be followed (or said another way, natural light must be able to penetrate into at least 50% of each floor plate)
- b. From the urban tissue, one or more building types must be selected and developed with the dominant criteria being a demonstrated capacity to accommodate a variety of inhabitations (patterns of use) over time. Designers are asked to develop **at least one** of these building types in greater detail, showing how built form and architectural technology serve dual spheres of action: the shared architecture that is responsive to long-term community values and imperatives, and the individual interventions of use that are function-specific and thus more changing, such as interior fit-out (infill or tenant work) and elements of the facade. Because utility systems are a key part of such capacity, common utility systems must be designed with provisions for connectivity to changing individual use areas within the building type selected for more detailed design.
- c. **The building type (or types) developed in detail and sited in the tissue should accommodate the following program/space scenarios, intended to occur at two periods during the life of the building(s):**
 1. **First scenario space requirements for the first 30 years:**
 - Medical office space: 80,000 sq ft in 4 units of 20,000 sq ft each with:
 - 1000 sq ft public space*
 - 1000 sq ft service space*
 - 18,000 sq, ft clinical space*
 - Assisted Living: 60,000 sq ft in 3 units of 20,000 sq ft each with:
 - 3000 sq ft public space*
 - 15,000 sq ft residential space*
 - 2000 sq ft support space*
 - Specialty clinical: 80,000 sq ft in 4 units of 20,000 sq ft each with:
 - 1000 sq ft public space*
 - 1000 sq ft service space*
 - 18,000 sq, ft clinical space*
 - Fitness/wellness/rehab center 20,000 sq ft.
 - Retail 20,000 sq ft
 - General office 60,000 sq ft
 - Parking One car for each 1000 sq ft of occupied space
 - Residential Dwelling units in buildings of generally 4 to 5 floors
 - Appropriate public and private green space/parks/public amenities
 2. **Second scenario space requirements for beyond 30 years:**
 - Medical office and specialty clinical space is reduced by 50% (i.e. 80,000 sq ft becomes 40,000 sq ft)
 - Assisted living and other residential, office, retail, entertainment, educational uses fill the space vacated by the departing medical office and clinical functions. It is up to the designer how to adapt these newly introduced uses into the retained building shells; it may be necessary to rethink the way in which these uses (residential, office, etc.) share space, while allowing public and private spaces to remain clearly defined.
 - Entrants should consider how fit out and façade adaptations meeting the needs of both the first and the second scenarios can be accommodated in the architectural design of the building type.

In meeting the challenge, entrants are encouraged to investigate, adapt and re-invent the principles of Open Building as a point of departure. See www.open-building.org for a detailed explanation of and literature about the tenets of Open Building: change, levels of intervention, and distributed design.

Question and Answer Period *rev. 2011.01.25

Competition entrants have the opportunity to pose questions regarding competition intent, details, submission requirements, and provided competition background. Questions may be submitted to openarch@bsu.edu, using the subject line “Competition Question” in the e-mail message. Questions will be accepted until **March 21** and answers will be posted by **April 10**.

Important Dates *rev. 2011.01.25

LAST DAY TO SUBMIT QUESTIONS:	March 21*
ANSWERS POSTED ON WEBSITE:	April 10*
SUBMISSION DEADLINE:	July 15
WINNERS ANNOUNCED:	September 1, 2011

Competition and Site Files rev. 2011.01.25

A site plan in PDF and DWG format will be available for download, as well as a pdf containing diagrams and other information to assist entrants in interpreting the site and its history.

These documents will be furnished within a single .zip files downloadable at the address below:

<http://www.open-building.org/conference2011/competitionpacket.zip>

To download, open the link or copy into your browser and choose "save as" or "save target as."

Distribution of Awards

Prizes will be issued as checks or wire transfers originating from a Ball State University account. Teams will receive a single award and must distribute it according to the team's discretion.

Travel stipends are intended for reimbursement, and will be presented to the winner(s) at the conference venue, during the conference. The travel stipend is not available for winners who do not attend the conference. Teams will receive the same stipend amount as individual award winners and must decide how to use the stipend in the reimbursement of travel expenses if an individual or a group elects to attend the conference.

The designers or design teams of winning entries will be required to verify that they are students at the time of submitting their entry, prior to issuance of an award. The competition organizers will request an official letter originating from the college, department or academic unit of the award winner(s) that must contain copies of college-issued identification papers for project designers as well as a signed letter, on official letterhead, from a dean or department head identifying the winners as students.

Format

Entries shall conform to the following formatting requirements. The competition organizers reserve the right to recognize ONLY properly formatted entries for review by the jury.

Entrants shall submit their competition entries as a single, multiple-page PDF document, consisting of the following pages or sheets:

Page 1 – Entrant information, in list format

- Project Title
- Complete names of all entrants and advisors if applicable
- School/university name and department of entrant (or each team member)
- Degree program and graduation date for entrant (or each team member)
- E-mail, telephone (including international prefixes), and mailing address for the entrant. In the case of a team project, a *primary contact* shall be selected by the team who shall provide this information and remain responsible for communication with the competition organizers.

Note that no graphic material shall appear on this page.

Page 2 – Project presentation board

- Project Title
- 250 word project description, summarizing the project's strategies in meeting the design challenge
- Project graphics at discretion of designer. Graphics should clearly represent the design of the urban tissue, as well as the detailed design of the building type(s) (described in 'c' and 'd' of the submission requirements). Use appropriate architectural scales for drawings, and diagrams as needed to describe the interrelationships among design components and their transformation over time.

Note that NO information which identifies the project entrants/designers or academic affiliation shall appear on this page, other than the project title.

PAGE SIZE AND ORIENTATION

Page 2 shall be sized as a single A0 sheet, oriented horizontally. Page 1 will not be reproduced and therefore may be included at a size convenient to the entrants.

NOTE ON BOARD CONTENT

All text and entrant information shall be provided in English

Entrants should note that their entries will be reviewed by an international jury and a clear presentation of the project is imperative. Language shall be clear and concise. Discrete labeling of images and drawings is highly recommended.

Entrants should also note that the entries will be judged based on their application of Open Architecture concepts as described in the competition brief on the first page of this document, and that presentation content which addresses these concepts is essential.

Submission Procedure and File Naming

The file name of the submitted PDF shall be formatted, using the entrant's name, as follows:

Surname_Givenname_EOA_COMPETITION_ENTRY.pdf

In the case that the project has been submitted by a team of students, the team's primary contact shall be name contained in the filename.

Submission of entries will be electronic and must be received before 5:00 PM EST (GMT-05:00) on the day of the submission deadline. Entries shall be sent as file attachments to the following e-mail address: competition@sp2007.bsu.edu

Entries shall conform to a size limit of 4 MB. The receipt of entries exceeding 4 MB cannot be guaranteed.

AGREEMENT TO EXHIBIT OR PUBLISH:

By submitting entries in the competition, authors shall agree to permit the organizers of the EOA conference to exhibit and/or publish the entered projects, images, and descriptions in the conference proceedings and as part of future publications, exhibitions, and presentations. The organizers of EOA and associated organizations agree to fully credit authors and institutions cited as part of the competition entries in any instance where work is represented. Authors retain all rights to submitted work.