

EAST CAMPUS / MIT GATEWAY

Alternative Approaches

Prepared by The Design Committee

July 19, 2013

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Alternative Approaches

This report lays out strategic options for design and program of the MIT East Campus and a new Gateway to the institute in the Kendall Square area. Its purpose is to define principles for the planning and design of this critical area of the campus, in light of the recent up-zoning approval given to MIT by the City of Cambridge, and the intention of the MIT Investment Management Company (MITIMCO) to construct approximately 900,000 sq ft of commercial office and laboratory space on the campus south of Main Street. The report examines alternative approaches to achieving this amount of development that will also result in a high quality campus environment, mesh with the broader public realm of Kendall Square and the Charles River, and serve student and future academic needs.

This brief report and design study was prepared by a Design Committee of architecture, urban design, and planning faculty in the School of Architecture and Planning. The Design Committee was appointed by Provost Chris Kaiser and Executive Vice President and Treasurer Israel Ruiz following a recommendation of the faculty Task Force on Community Engagement in 2030 Planning on Development of MIT-Owned Property in Kendall Square. The Task Force was charged by the provost in 2012 with reviewing the Kendall Square project, and recommending whether to go forward. In the process, the Task Force raised concerns about the conceptual diagram put forth for development of the area, which had been prepared by MITIMCO. The Task Force agreed to “support moving forward with MIT’s submission of the rezoning petition provided that ... A comprehensive urban design plan for East Campus is conducted and completed after the petition is approved but before anything is built in the area covered by the petition. The plan needs to consider alternatives to the current MITIMCo diagram for commercial building sites, floor plates, program, heights, and scale of development ...” guided by a set of design principles articulated by the Task Force.

Design Committee

Adèle Santos (Chair), J. Meejin Yoon (Coordinator)

Nader Tehrani, Alexander d’Hooghe, Dennis Frenchman,

Anton Garcia-Abril, Carlo Ratti

Design Principles

The work of the Design Committee is aimed at opening up alternative approaches to the design and programming for East Campus and the MIT Gateway. It is also intended to inform the work of a subsequent campus planning consultant, which MIT will retain in the fall of 2013 to prepare a formal East Campus / MIT Gateway Plan.

In examining the situation and preparing alternative approaches, the Design Committee was guided by and fully supports the Design Principles articulated by the Task Force. These are excerpted and included in full below, followed by a list of additional, more detailed guidelines that the Design Committee considers to be important in moving forward.

Principles defined by the Task Force to guide development of the area include:

“Design Principles, Criteria. ... Kendall Square, with its Red Line MBTA station, clearly has the potential to serve as a new gateway to MIT, similar to the function now served by 77 Mass. Ave. to the west. Equally important, much of the property that would be developed for commercial tenants could house MIT uses at some point in the future. Therefore, it is critical that these buildings and the space they create on the ground be considered first as a part of the campus designed to support our students, faculty and staff...

- **There must be a gateway to MIT worthy of MIT and its aspirations, mission and standards of design excellence.** *The gateway should not just be an entrance, but a physically promi-*

nent node of activity, equivalent to the function of MIT's Lobby 7, containing destinations relevant to the MIT community and helpful to visitors (e.g. an information office) linked to clearly recognizable spaces that support learning and research (e.g. laboratories, studios, classrooms, study and meeting spaces accessible to the public). It should connect MIT directly to Kendall Square with minimal physical barriers or gaps. The gateway should be welcoming to residents and visitors.

- **East Campus buildings and spaces must create and convey a campus feeling that serves the needs of the MIT community in ways that attract people to the area across the broad band of hours that typifies the rhythm of student, faculty, and staff life.** *This means, for example, providing amenities and services for students, faculty, staff and residents, with a minimal corporate presence (on the campus side), and well-defined public space for people to gather, affordable places to eat, bicycle parking, and access, etc. To ensure this, the ground floor space on all buildings should be primarily reserved for inviting academic, student life, or retail uses, and not have a “gated,” privatized character.*
- **Any commercial space in Kendall Square should serve as an extension of the campus and not the other way around.** *The businesses invited to locate there should complement and support the mission of MIT to promote innovation and start-ups and allow maximum access to students and faculty for research, class projects, and other mutual learning opportunities. Kendall Square should not just be a commercial or corporate office location that happens to be adjacent to a university.*

- **The portion of the development intended for commercial use should generate an appropriate financial return to warrant investment of MIT endowment funds.** However, given the location of this development on campus and the need to support academic and student life, it may not be reasonable to expect the same level of return as that from commercial property developed in sites removed from the campus. Alternatively, it would be appropriate for the Institute to consider investing a portion of the income from the Kendall commercial development into developing the campus spaces, facilities and academic environment planned for the area.
- **Design of commercial development should proceed only in the context of a comprehensive plan for the future of the East Campus, including its public realm, academic, student life, transport, and recreational functions, taking into account potential disposition of all property between Main Street and the Charles River.** It is not sufficient or prudent to design commercial buildings in the absence of a systematic analysis and clear understanding of how the remainder of the East Campus is intended to evolve. It is important that ample space for future academic expansion be reserved in the up-zoning petition. We have not studied this issue in sufficient depth to reach a conclusion about how much space at this point, and, therefore, it is another issue for further review and discussion in the post-up-zoning design phase and plan for East Campus.

“Flexibility: Envelope versus Constraints. We have heard from the Cambridge City Manager, MITIMCo, and others that the up-zoning petition would create an “envelope” that would allow for considerable flexibility in design and development options going forward... Among the options that should be considered are:

- Less commercial development in the area shown as Site 3 on the MITIMCO plan, providing the potential to develop a significant gateway to the campus.
- A better defined campus space connecting to Eastgate and Sloan that is more closely associated with Main Street, so there can be sufficient interaction and permeability to support campus activity. This space should also facilitate interaction with the rest of the Institute, which is vital to achieving the goal of a “One MIT” campus culture.
- More space for academic development and student life.
- Reallocation of height and massing to the edges rather than heart of the campus area, or a smaller commercial project overall.
- Alternate sites for commercial office and housing development that reduce impact on the campus.”

Design and Development Guidelines

Based on its analysis of the East Campus and alternative approaches, the Design Committee believes that the following more specific guidelines should be added to the above to guide the work of the campus planning and design consultant on the East Campus / MIT Gateway:

- **Gateway spaces** – will have a 21st century character, be humanely scaled, defined on the edges by buildings, planting or other elements, include inside (or covered) as well as outside public space, to accommodate for the climate, and connect directly to Main Street and the Kendall T Stop. Digital media may be incorporated to engage the public with MIT, reveal hidden content, animate, and define the place, providing a sense of MIT and the future.
- **Gateway programs** – will incorporate activities and uses that engage MIT, students, faculty, research, and culture with the larger community, creating an integrated public realm. Examples of appropriate programs discussed by the Committee include: MIT admissions information center, MIT Museum, Edgerton Center (engaging elementary school kids), DUSP Science Teacher Education Program, CoLab, MITx production studios and outreach, ILP, MIT Press, Coop, card center, travel office, community meeting spaces, cafes, restaurants. In the long run, an MIT Performing Arts Center (inviting the public) could provide an anchor for the gateway.
- **Infinite Corridor** – will connect through to the gateway space and Kendall T stop, extending on to Sloan. To enhance the connection, alterations to Buildings 23-25 and or Carleton Street may be considered.

- **River Connection** – will be established to enable direct physical and visual access from the gateway to the Charles River. It is possible to achieve this with minimal effort between 100 Memorial Drive and Building E-51, which is explored in the alternatives.
- **Sloan School Connection** – will be an important part of the spatial network and movement system on East Campus. It is envisioned as a defined public space, with activities along, that terminates in, and helps to create an appropriate entrance space to the Sloan School campus.
- **Phasing** – of development will occur over time, anticipated to be approximately 15 years. Phasing should be guided by a vision, but able to accommodate changes in program – such as the need for additional academic space or housing – as MIT's requirements evolve in the future. However, the project needs to be spatially complete at each stage to ensure the integrity and usefulness of the whole East Campus throughout the development period.

Additional considerations and guidelines are developed graphically in the report, and should be considered integral with this list.

PROJECT GOALS

1. Enhanced Innovation Cluster

MIT's success in innovation is dependent on external **interactions** with the extended academic and business world and **collaborations** within the Institute itself. The Institute has helped attract to land adjacent to campus a multitude of life-science and technology companies, ranging from start-up, venture backed firms to well established giants such as Novartis, Pfizer, Sanofi-Aventis, Takeda, Schlumberger, Microsoft, and Google. This fertile environment has enhanced research collaboration both within the Institute and between the Institute and industry, resulting in the creation of a highly productive discovery environment, a powerful economic engine, an extremely effective talent magnet, and one of the world's most highly recognized life-science and technology centers. All of this helps MIT recruit and retain the best faculty, students, and staff. MIT's Kendall Square Initiative should provide new space to allow this **powerful academic-industry innovation dynamic** to grow.

Provide space for both new innovative academic initiatives and commercial enterprises.

2. Lively Urban Environment

Despite the excitement of the creative intellectual developments in and around Kendall Square, the physical environment is still not **reflective of a world-class institution**, leading **innovation cluster**, or **vibrant city square**. Kendall Square has only a budding sense of excitement and identity and lacks fundamental amenities such as basic retail services and places to entertain, meet and assemble that are critical to a **successful urban interactive place**.

Create a destination gathering place with amenities and services and active streetscapes.

3. Vibrant Gateway

The Infinite Corridor, the major pedestrian thoroughfare through campus, ends well before Kendall Square and leaves the Sloan School disconnected. The revitalization of Kendall Square provides an opportunity to extend the Infinite Corridor and establish a **major new gateway** at the east end of the campus where it meets the central business district and the neighboring community.

Establish a vibrant gateway and connective link between the Institute, the central business district, and the Cambridge community.

4. Feasible Development

Achieving the vision of a revitalized Kendall Square will require a significant financial investment by MIT. However, to ensure that MIT does not need to divert precious academic resources from critical Institute initiatives such as faculty research and student scholarships, **the plan should be economically self-supporting** in addition to being viable under market, physical, and legal/political considerations. Furthermore, to ensure city support, the plan should generate **increased tax payments** to the City of Cambridge to provide funds to help it achieve its policy objectives, such as maintaining a low residential tax, creating more affordable housing units, and improving the school system.

Create an overall development plan that is economically viable

Elkus/Manfredi Architects Scheme



Aerial Perspective



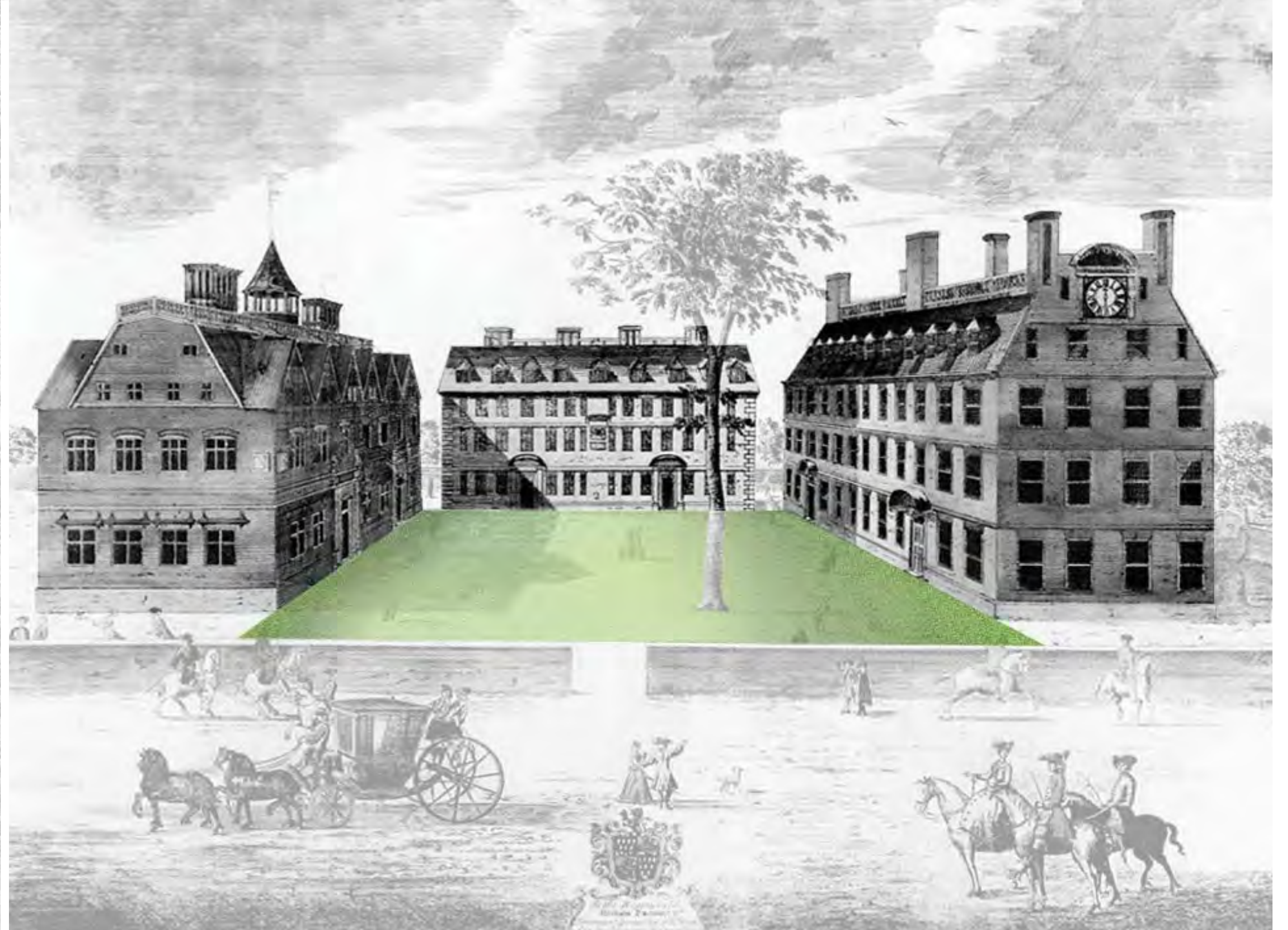
Elkus/Manfredi Architects - Site Plan

CAMPUS

Campus Prototypes



Joseph Jacques Ramée - Architectural plan of Union College (1813)



William Burgis - View of Harvard College (1726)

Harvard University



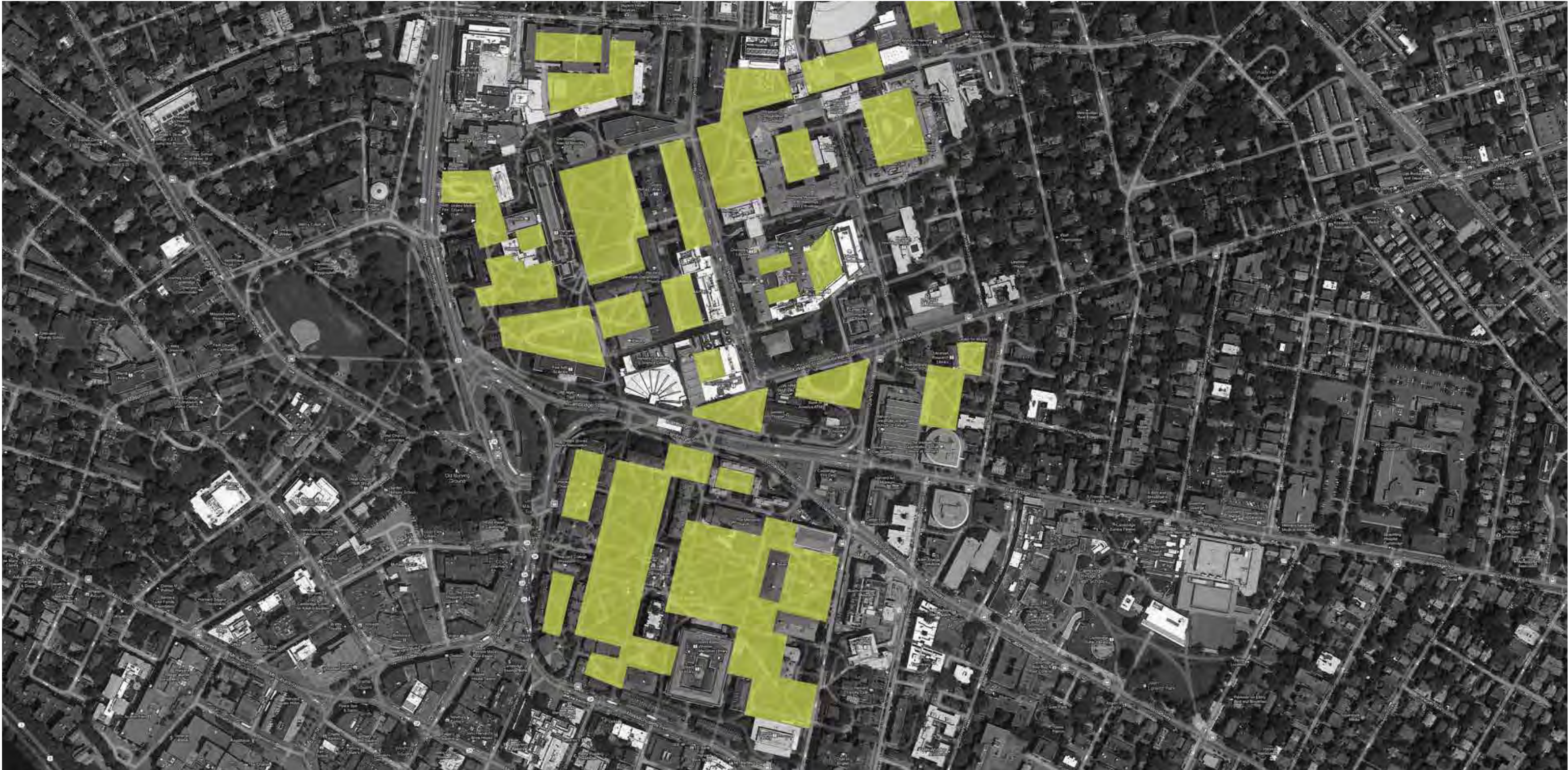
Site Plan

Harvard University



Site Plan

Harvard University



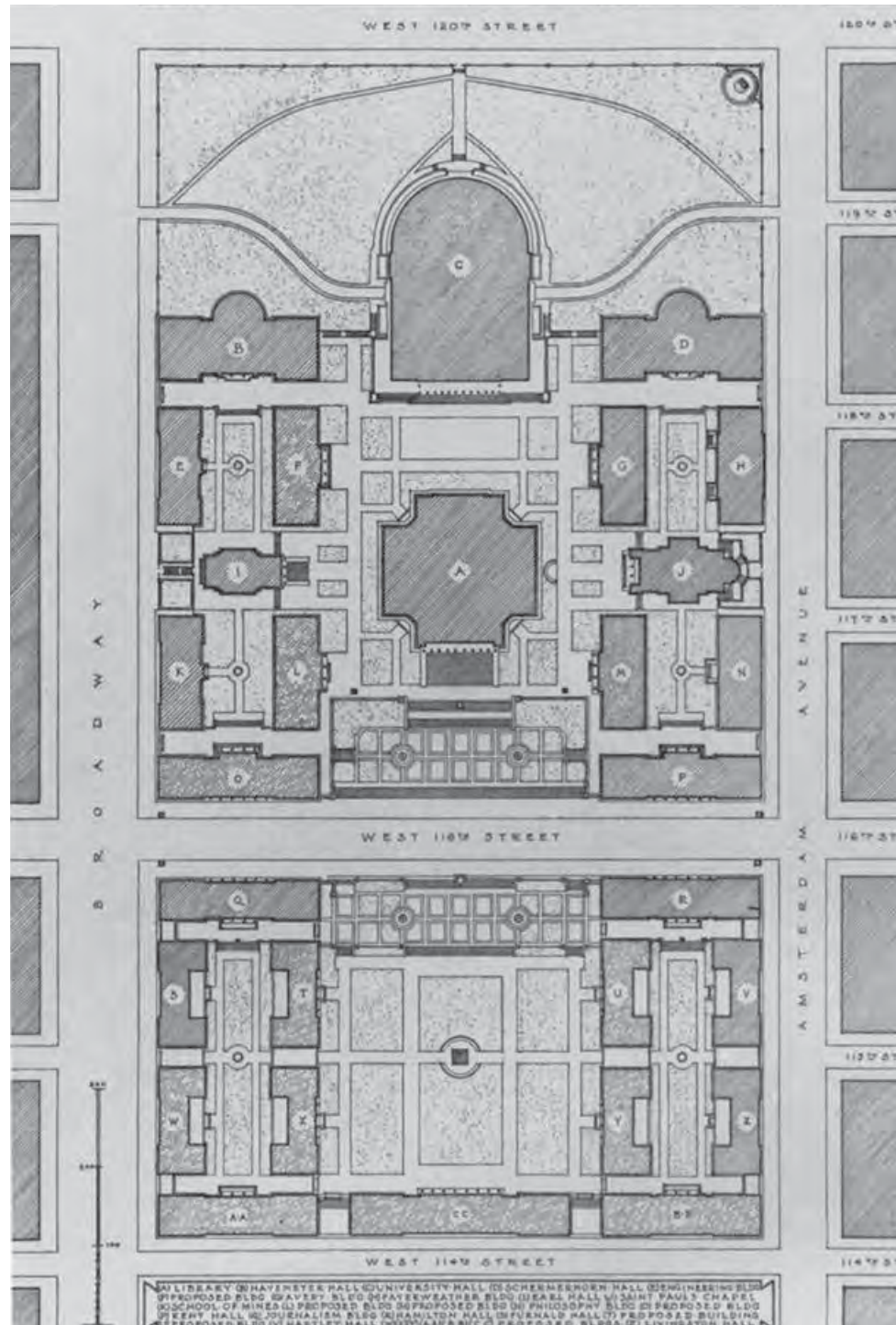
Harvard Yards

Harvard University



Harvard Yards

Columbia University



McKim, Mead & White - Columbia University (1903)



W.A Boring - Project for a skyscraper completion to University Hall (1932)

Columbia University



Site Plan

Columbia University



Site Plan

Columbia University



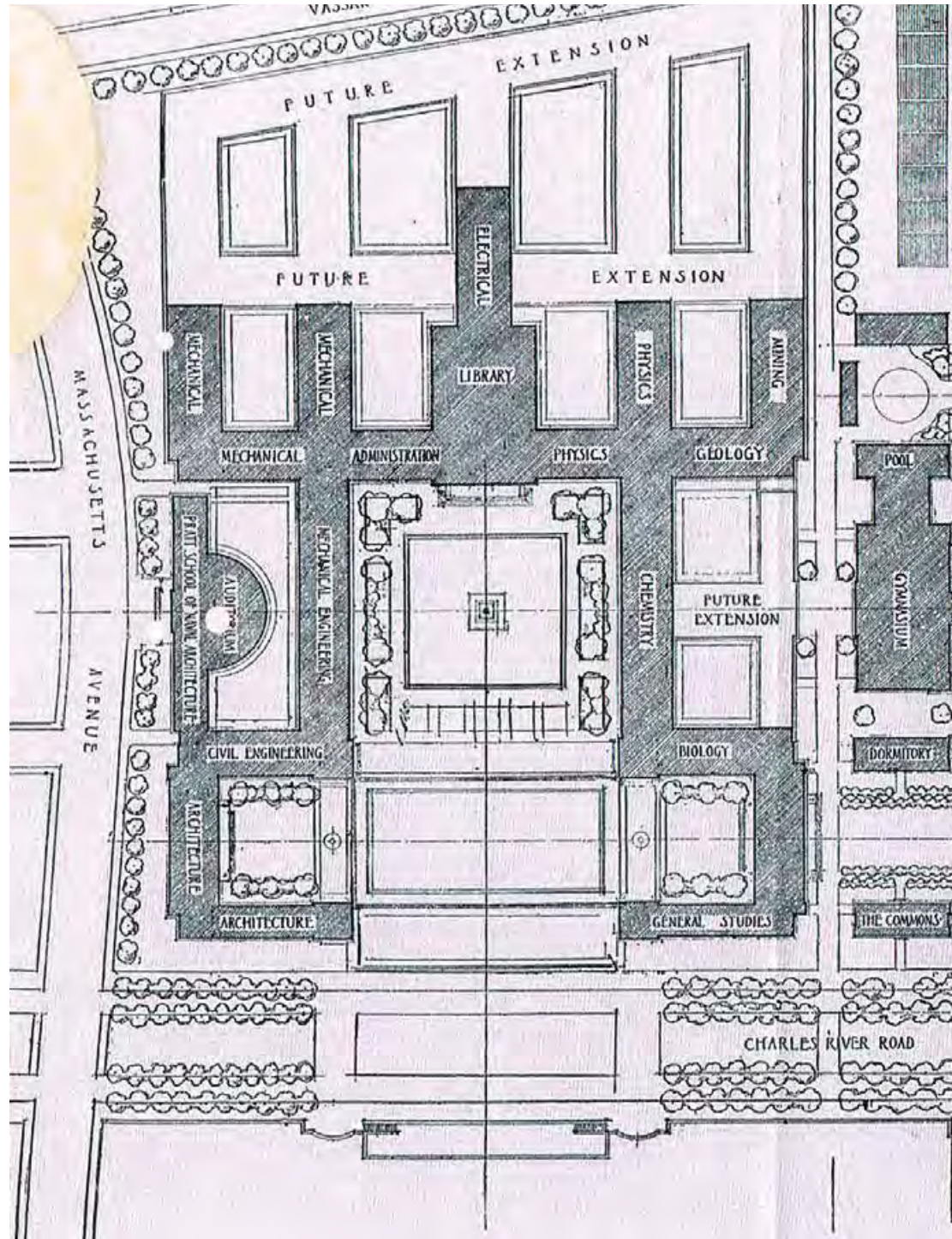
Site Plan

Columbia University

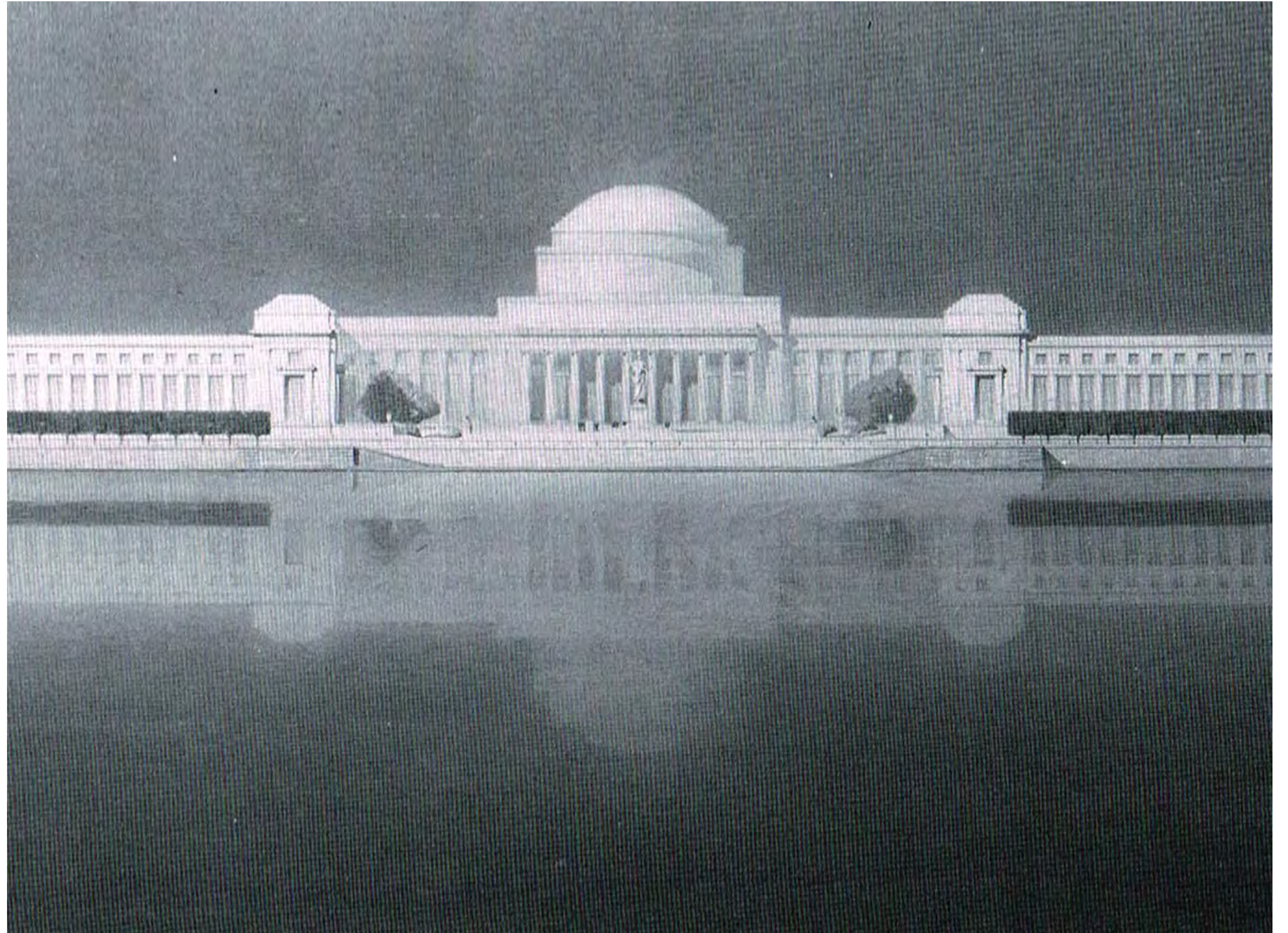


Columbia University Lawn

MIT



Plan of the proposed buildings for MIT (1913)



William Welles Bosworth - Proposed MIT Academic Building



MIT Site Plan



MIT Site Plan



MIT Site Plan



MIT Courts



MIT Site Plan

MIT - 1920



MIT Site Plan

MIT - 1950



MIT Site Plan

MIT - 1970



MIT Site Plan

MIT - 1990



MIT Site Plan



MIT Site Plan



MIT Site Plan

MIT CAMPUS BUILDINGS



BUILDING + BUILDING + BUILDING ≠ CAMPUS

Frank Gehry - Ray and Maria Stata Center



BUILDING + BUILDING + BUILDING ≠ CAMPUS

Steven Holl - Simmons hall

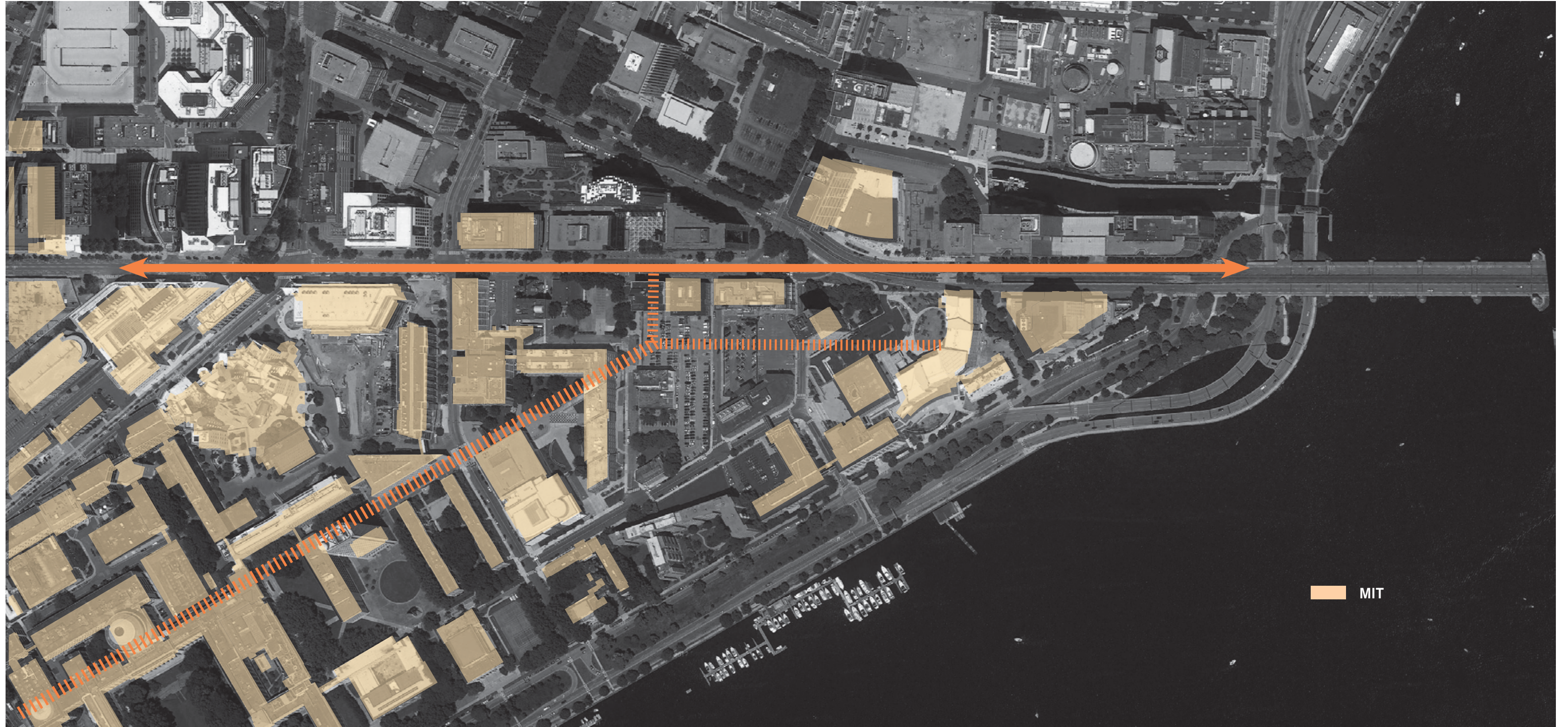
EAST CAMPUS

East Campus



East Campus Site Plan

East Campus



East Campus Site Plan

East Campus



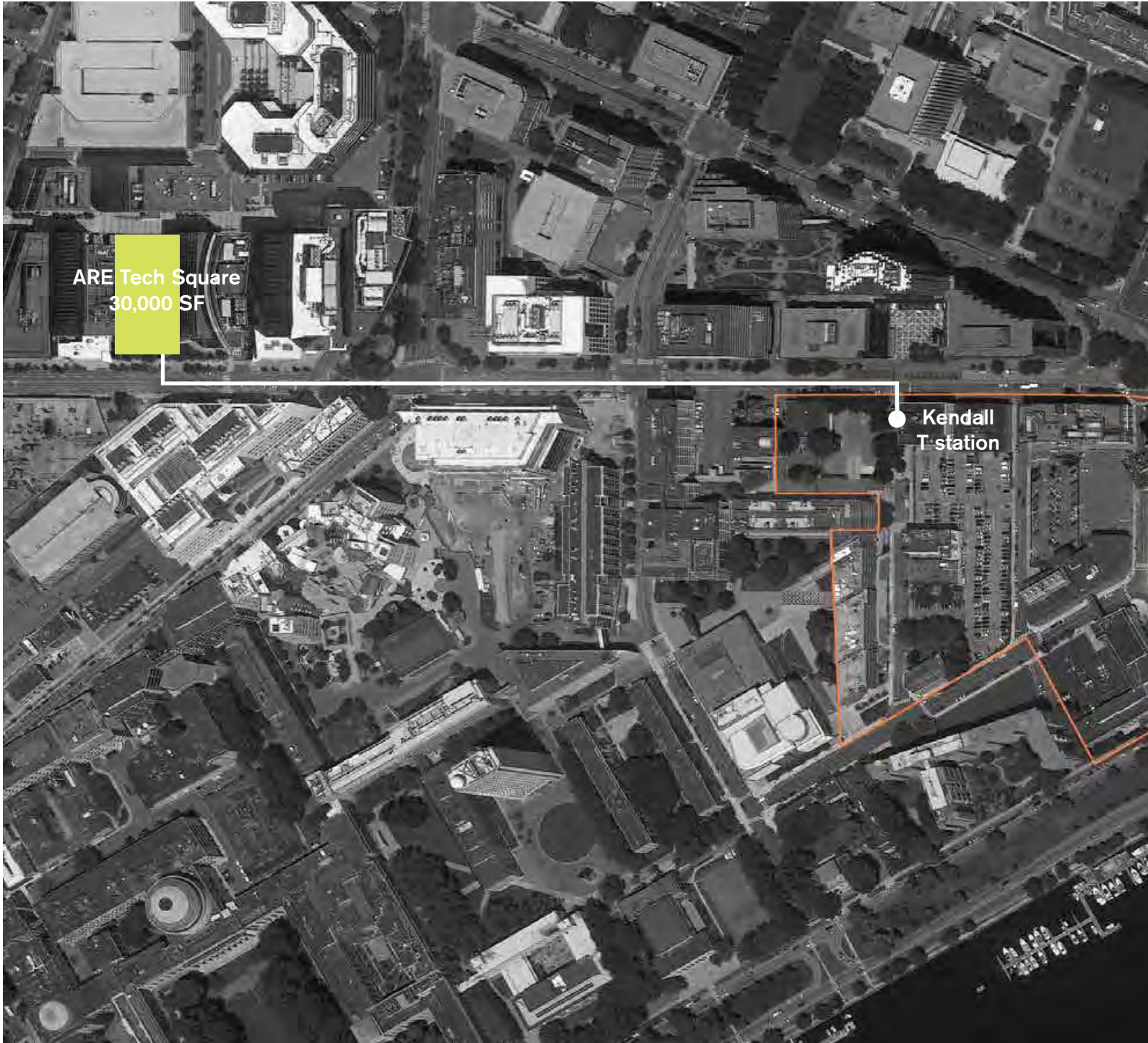
East Campus Site Plan

East Campus



East Campus Site Plan

ARE tech square



Höweler + Yoon Architecture - Study for ARE Tech Square

SCALE COMPARISON

Scale Comparison



MIT East Campus

Scale Comparison



Comparison with Killian Court

URBAN CAMPUS

Novartis, Basel Headquarters



Novartis, Basel Headquarters - Aerial Photo

Novartis, Basel Headquarters



Novartis, Basel Headquarters - Public Spaces

Coherence



Novartis, Basel Headquarters - Campus Buildings

Connection



Novartis, Basel Headquarters - Connections

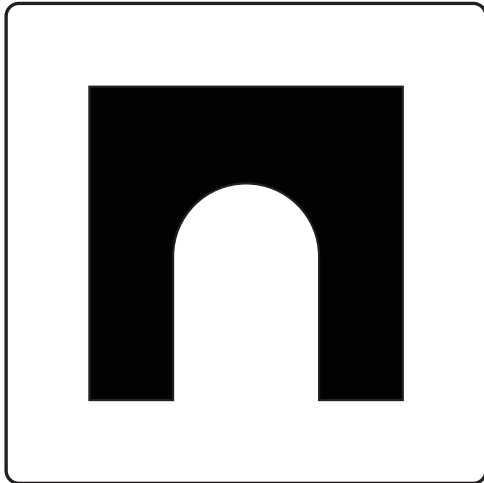
Public Spaces



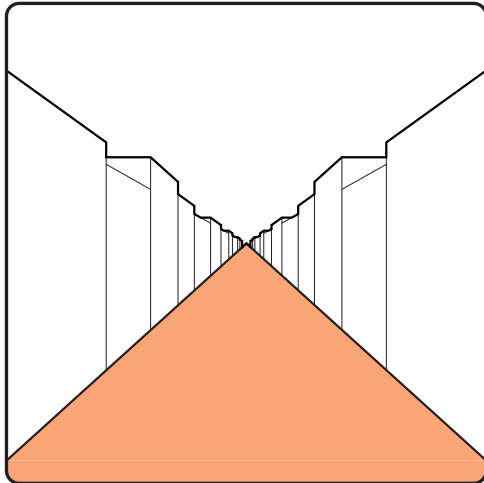
Novartis, Basel Headquarters - Public Spaces

CRITICAL CONCEPTS

Critical Concepts



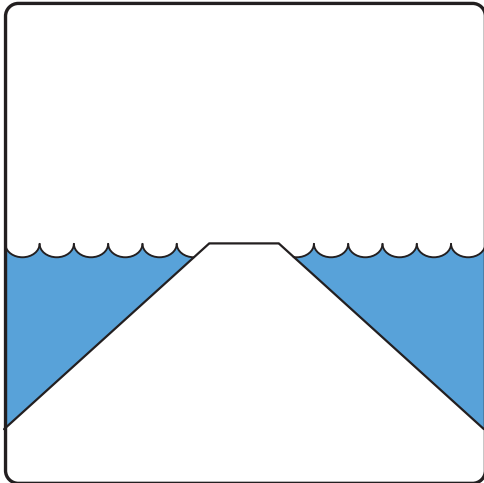
GATE



INFINITE CORRIDOR



CONNECTION



WATER

Gate



Infinite corridor



Connection

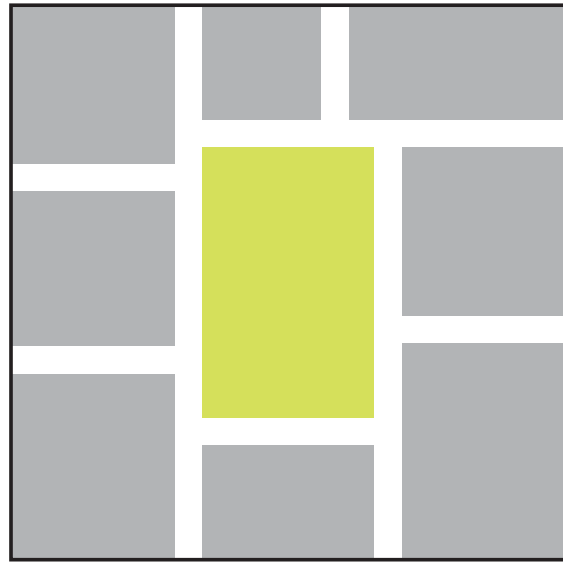


Water

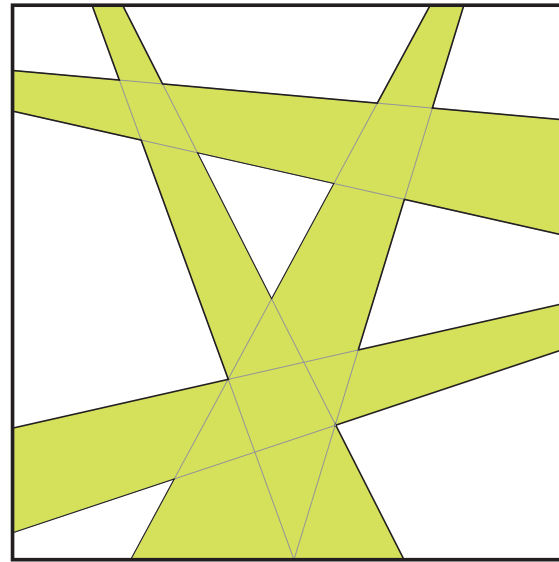


STRATEGIES

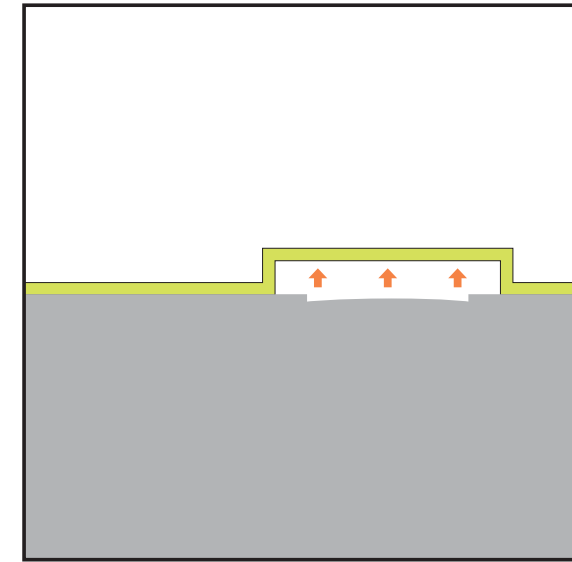
Strategies



STRATEGY 1
East Campus Gateway as
Public Space

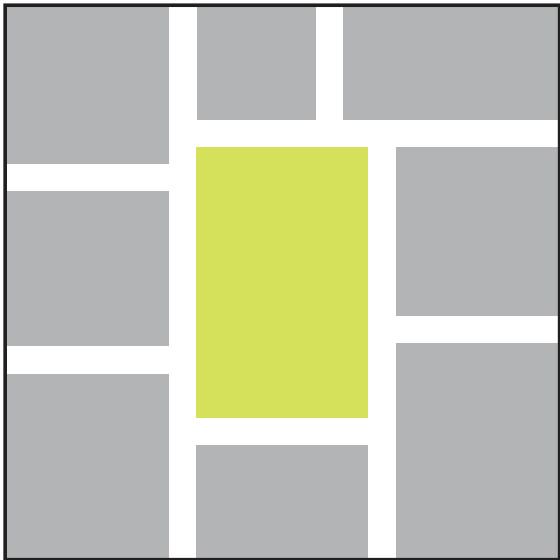


STRATEGY 2
East Campus Gateway as
Network



STRATEGY 3
East Campus Gateway as
Infinite Corridor extension

Strategy 1 - Gateway as Public Space



STRATEGY 1
Gateway as
Public Space

Strategy 1 - Gateway as Public Space



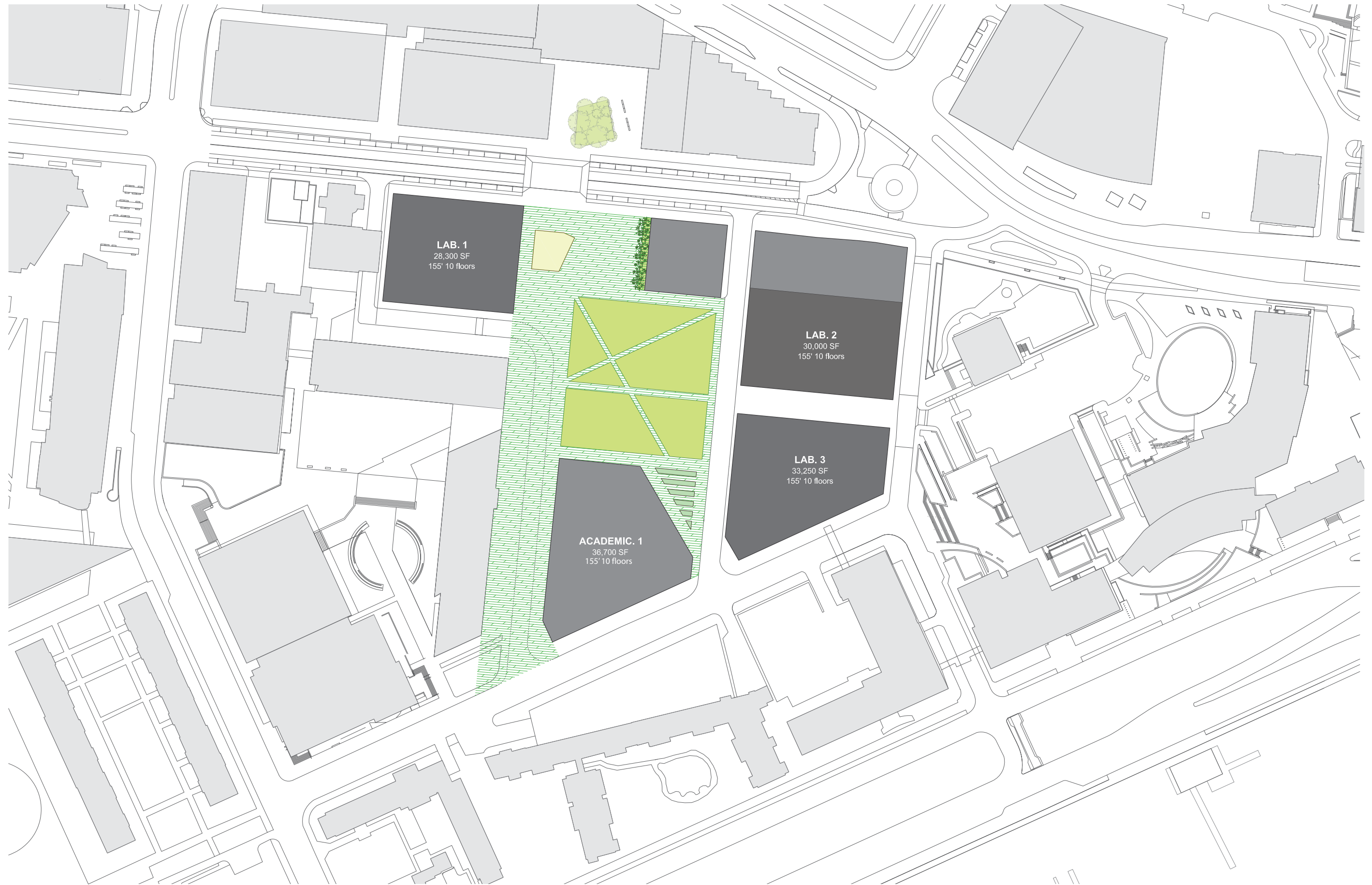
MIT Court Yards

Strategy 1 - Gateway as Public Space

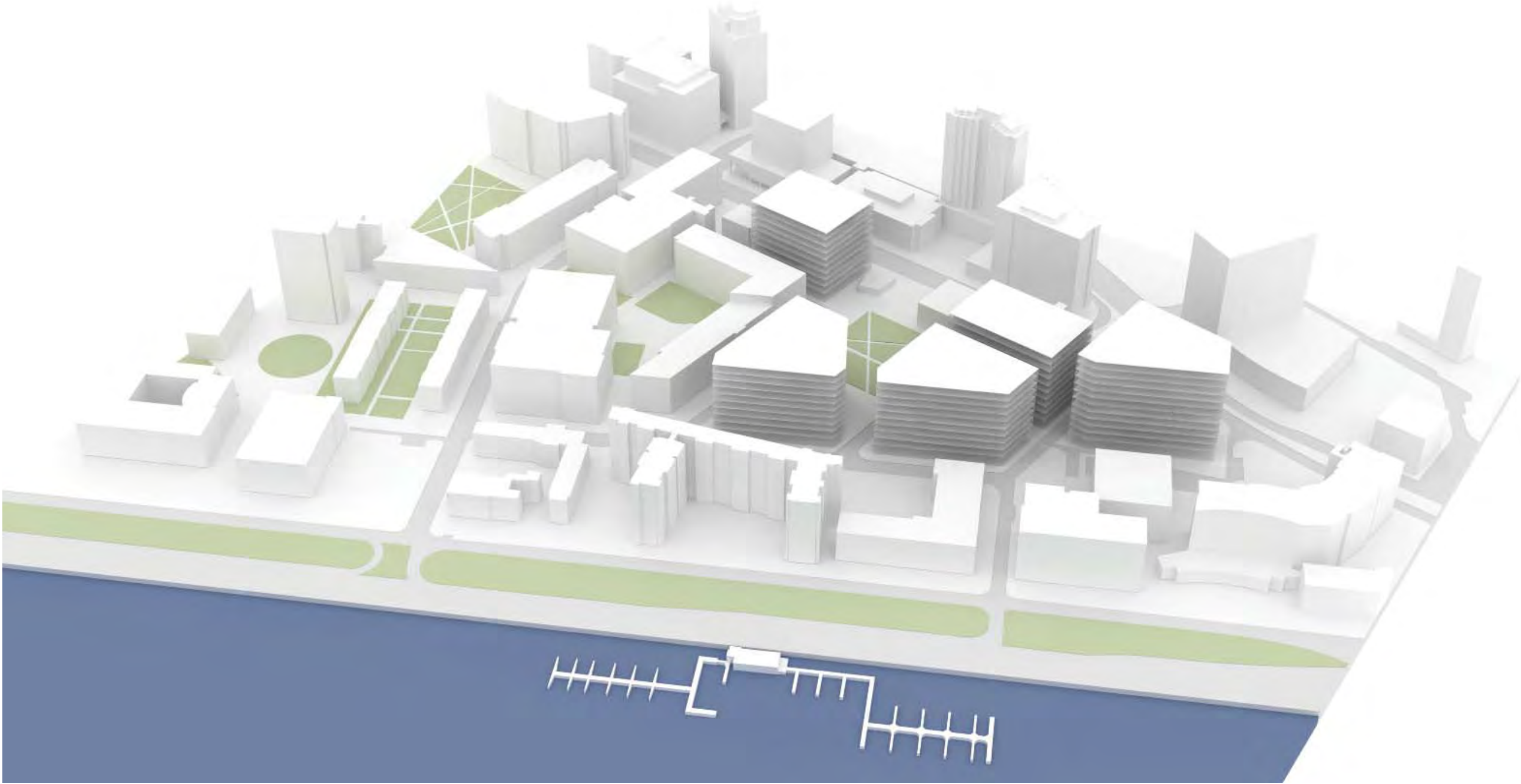


Scale Comparison

Strategy 1A - Grand Lawn



Strategy 1A - Grand Lawn



Strategy 1A - Grand Lawn



top left : Parc André-Citroën, Paris
bottom left : DS+R - Hypar Pavilion, New York
right : Bryant Park, New York

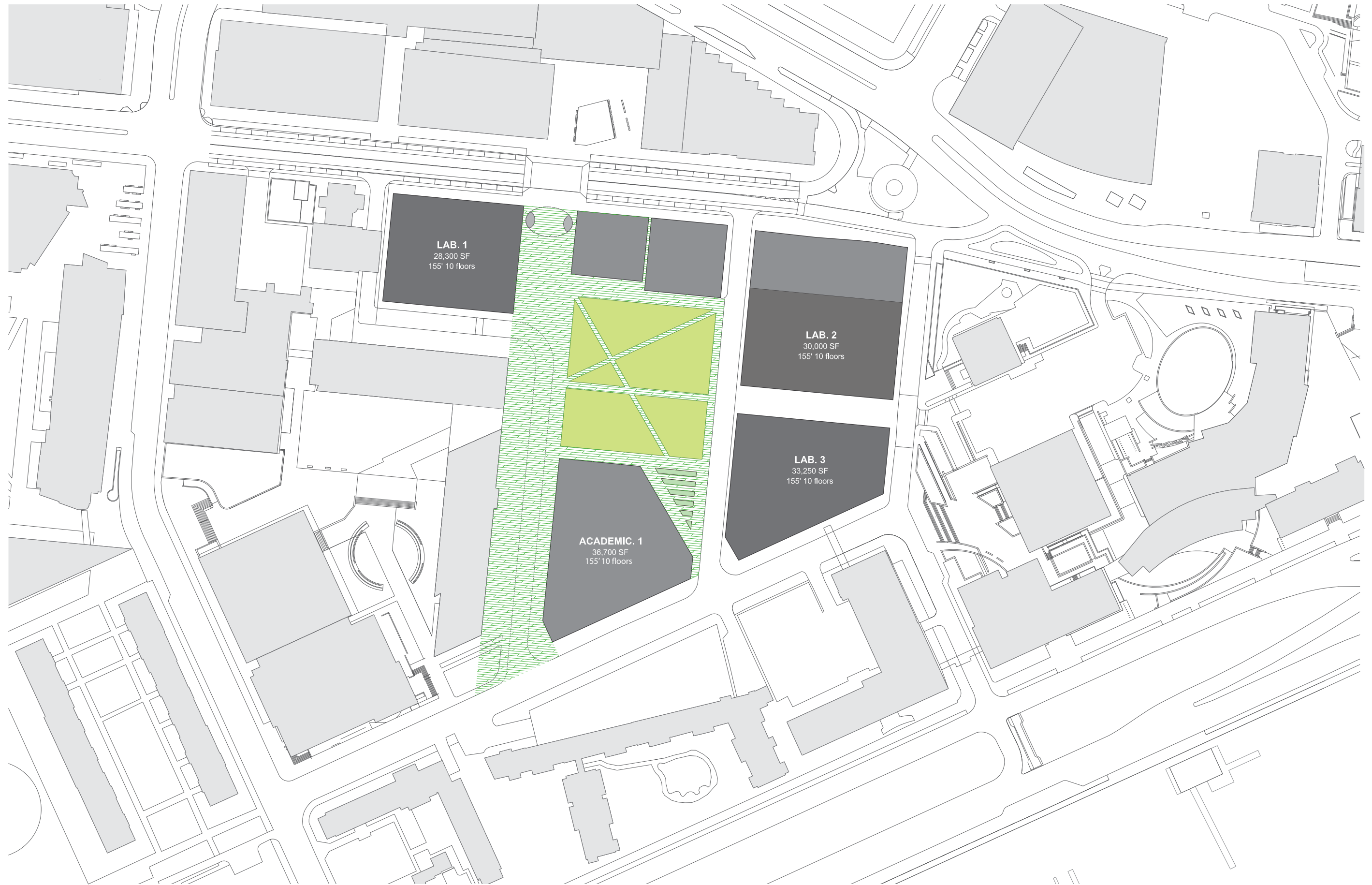
Strategy 1A - Grand Lawn



Michel Desvigne - Keio University, Tokyo

Chyutin Architects - BGU University Entrance Square & Art Gallery, Israel

Strategy 1A - Grand Lawn



Strategy 1B - Grand Canopy

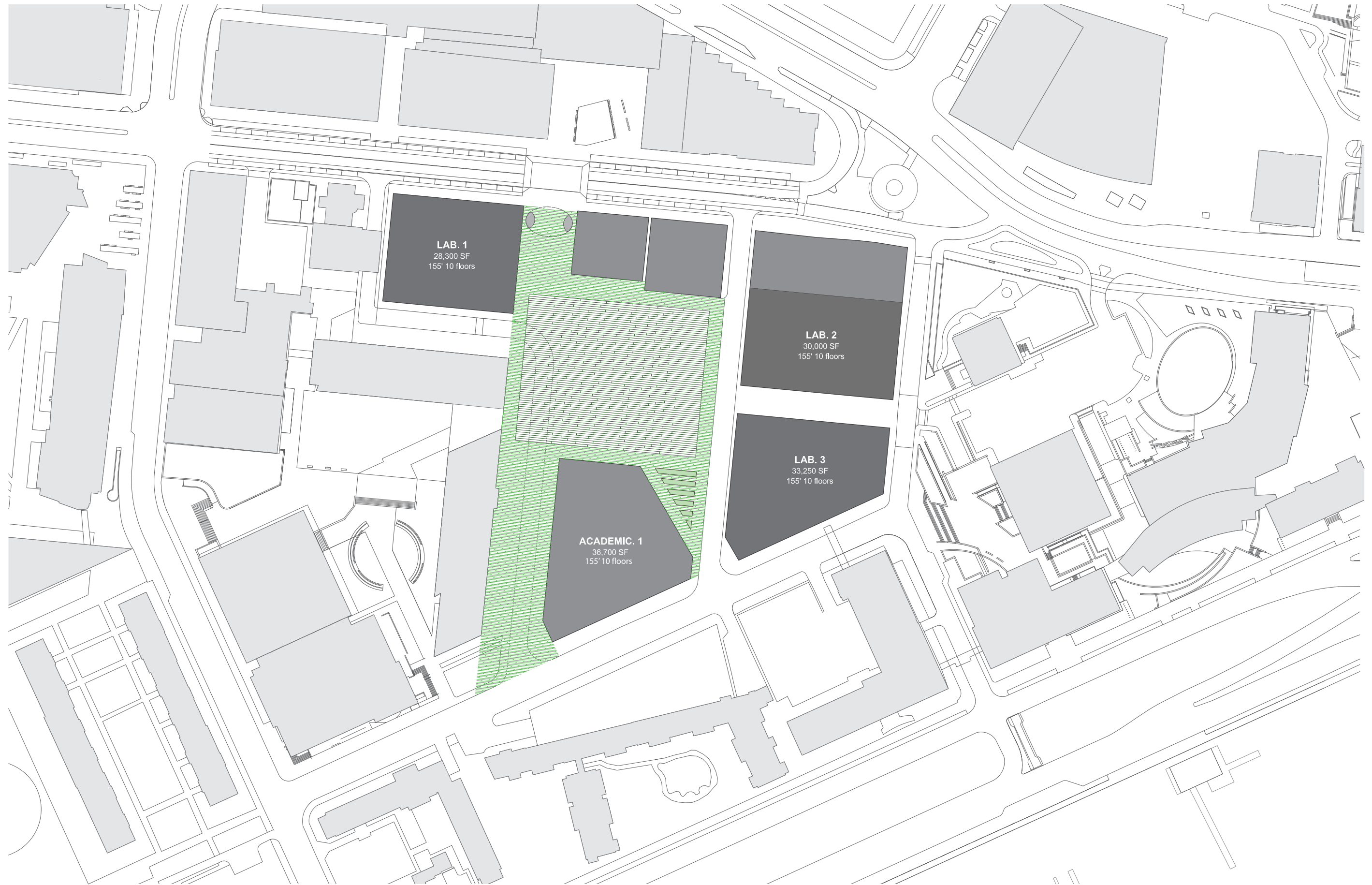


Anish Kapoor - Cloud Gate, Chicago

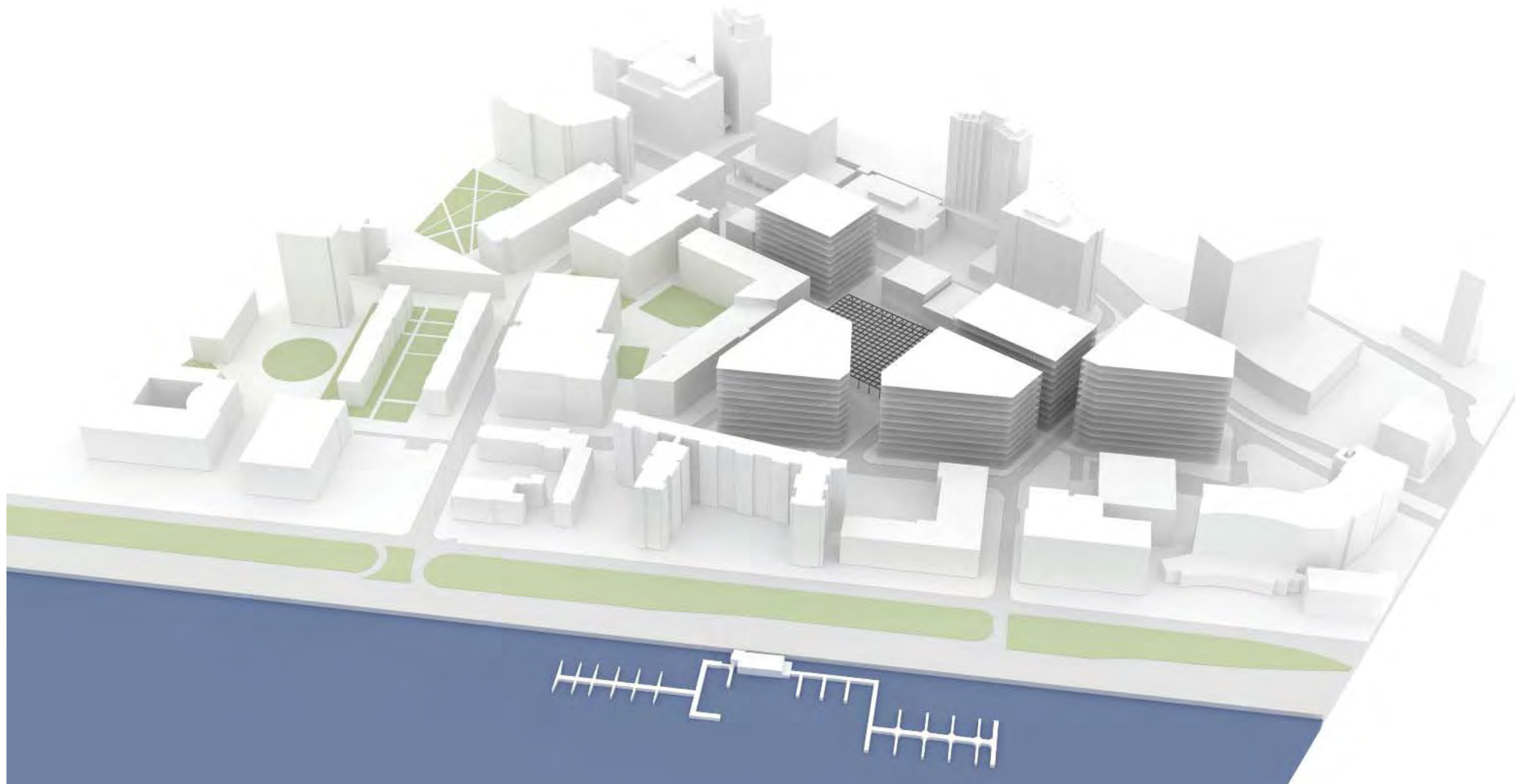


Buckminster Fuller Dome

Strategy 1B - Grand Canopy



Strategy 1B - Grand Canopy

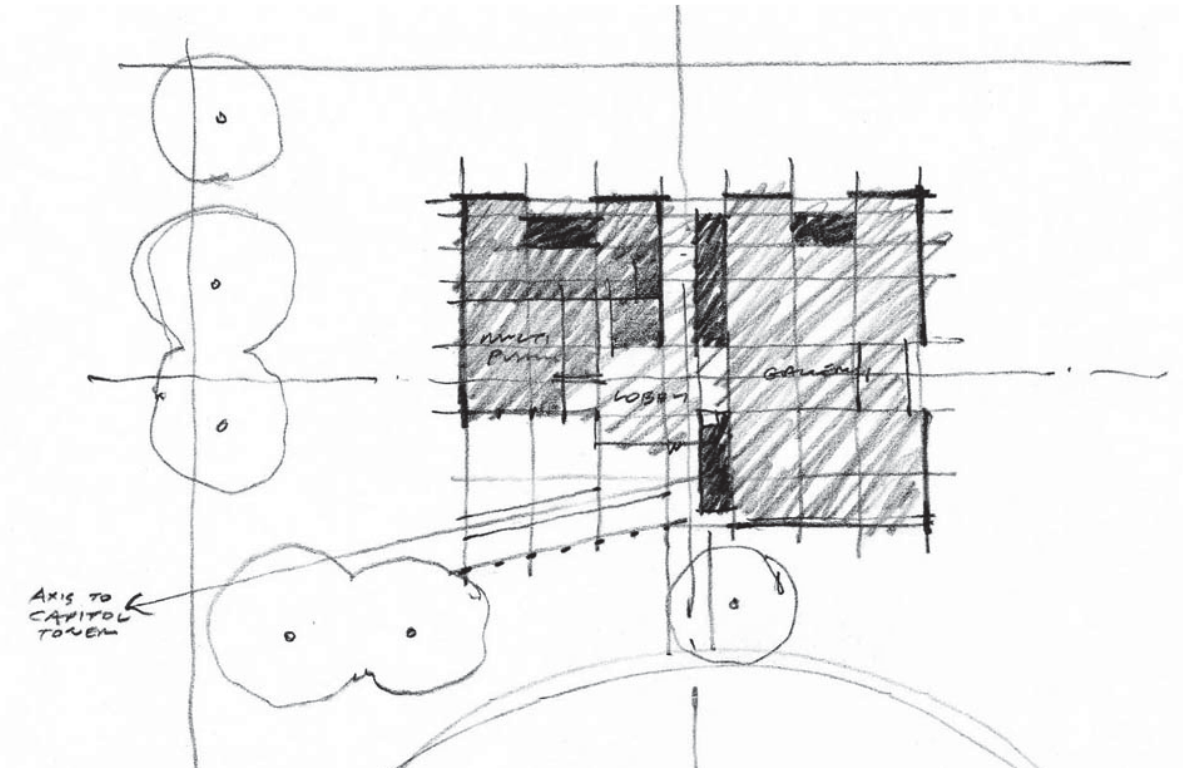


Strategy 1B - Grand Canopy



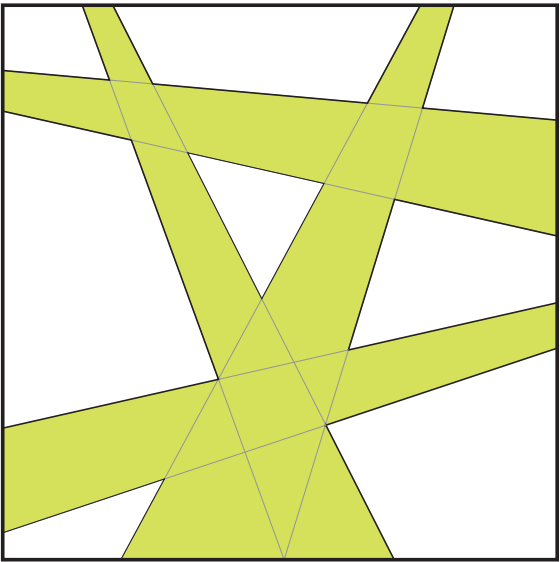
top left, right : Peter walker - University of texas at Dallas
bottom left : Norman Foster - Petronas University of Technology, Malaysia

Strategy 1B - Grand Canopy



Eskew+Dumez+Ripple - Louisiana State Museum

Strategy 2 - Gateway as Network

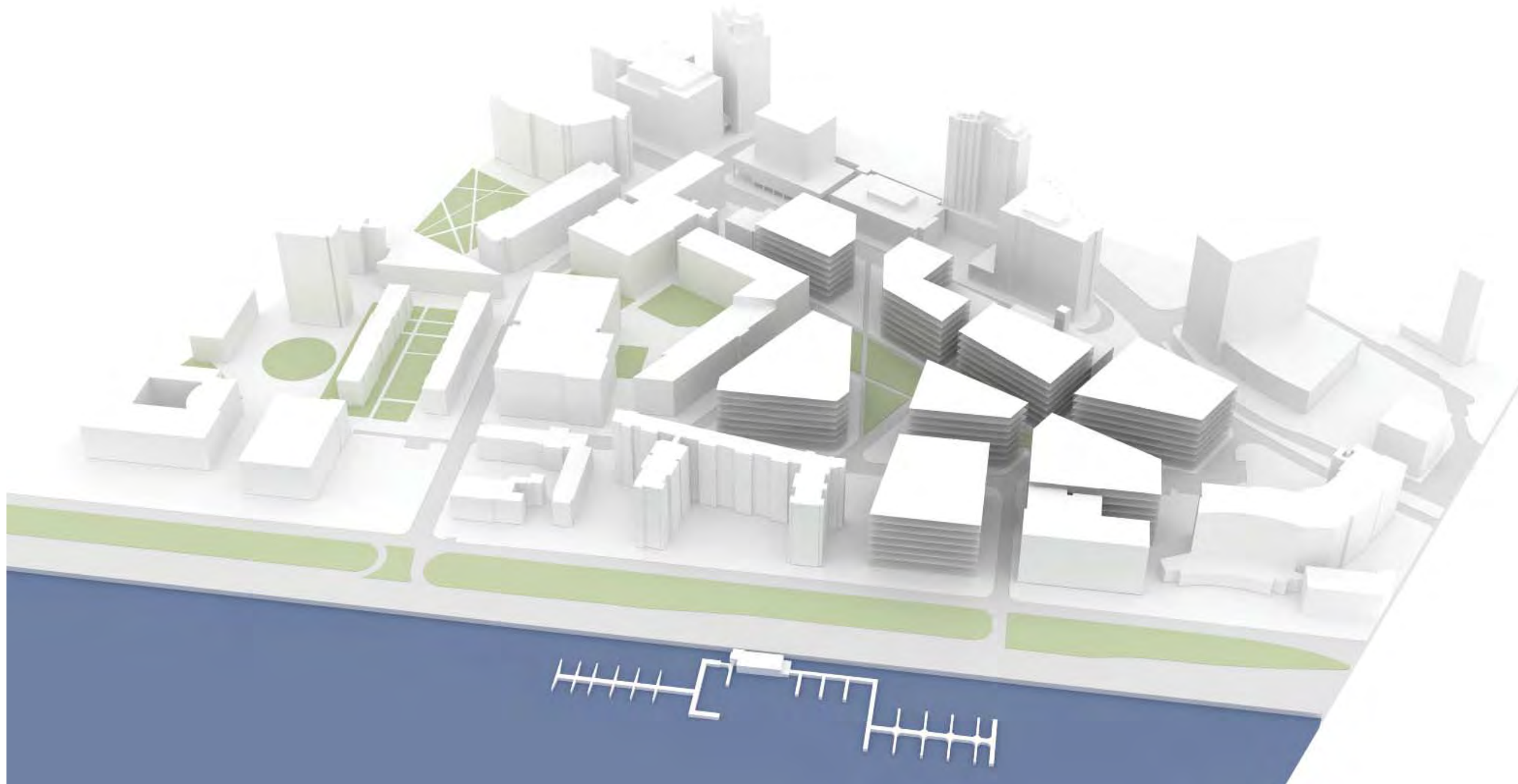


STRATEGY 2
Gateway as
Network

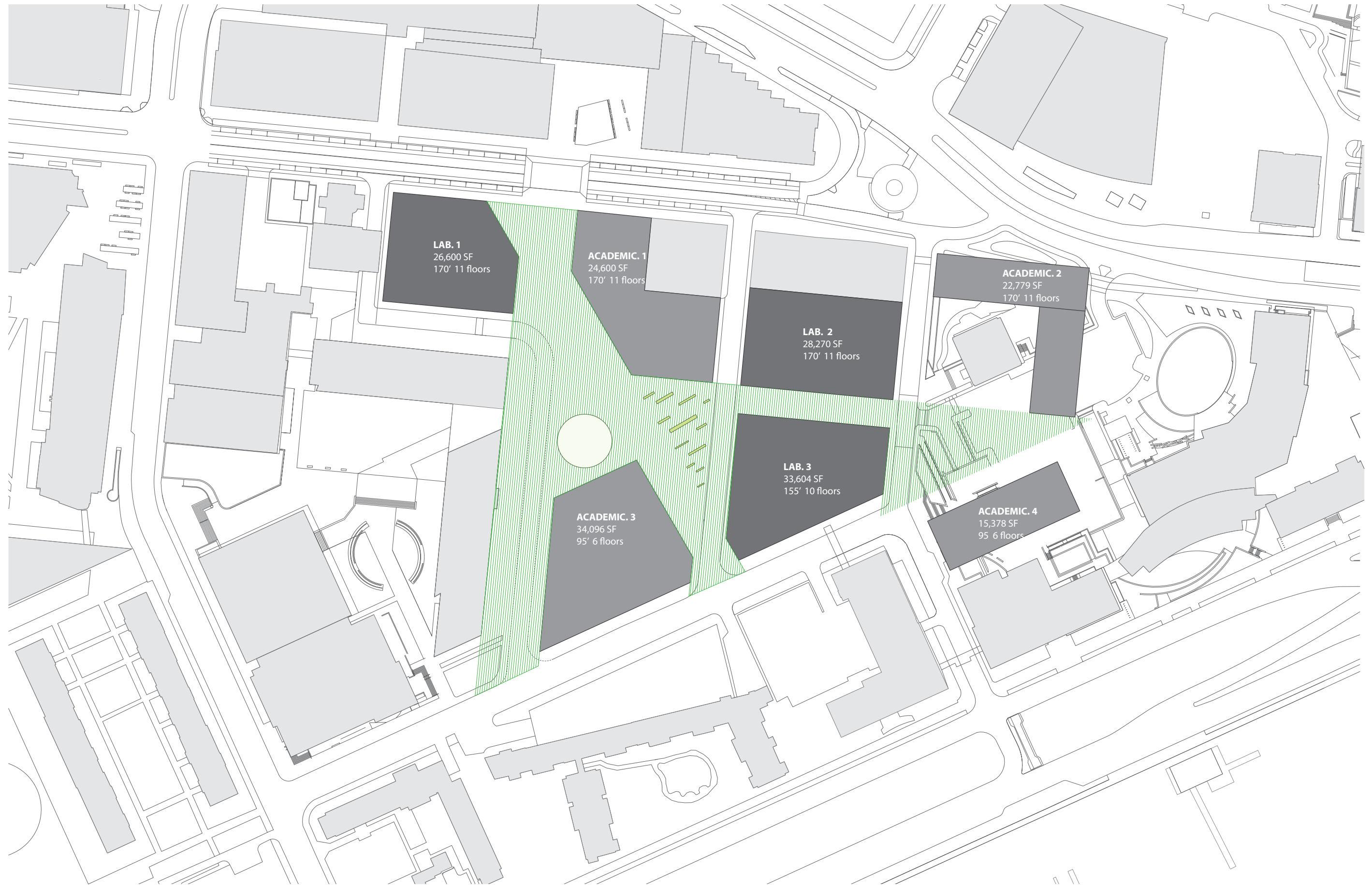
Strategy 2A - Gateway as Network



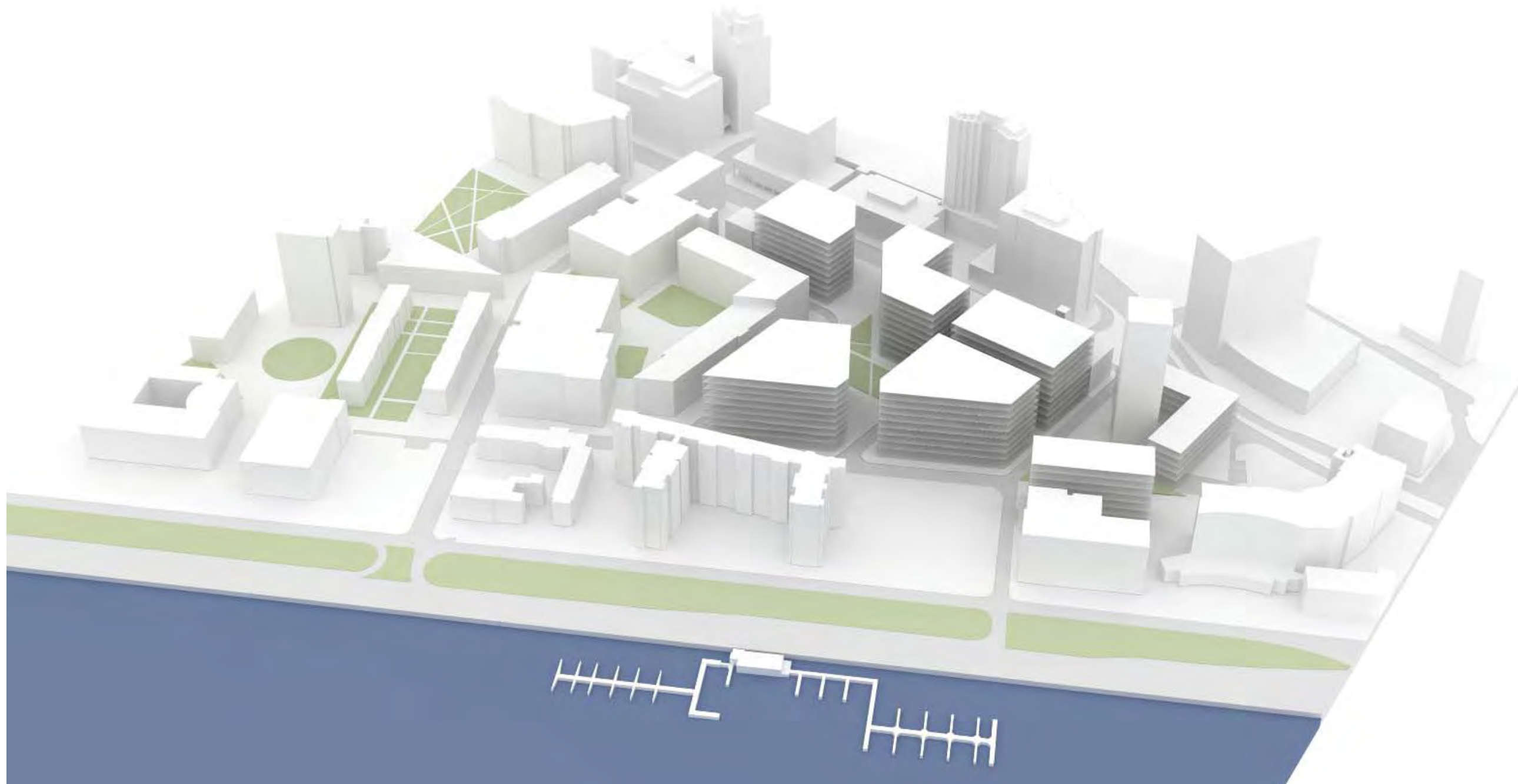
Strategy 2A - Gateway as Network



Strategy 2B - Gateway as Network



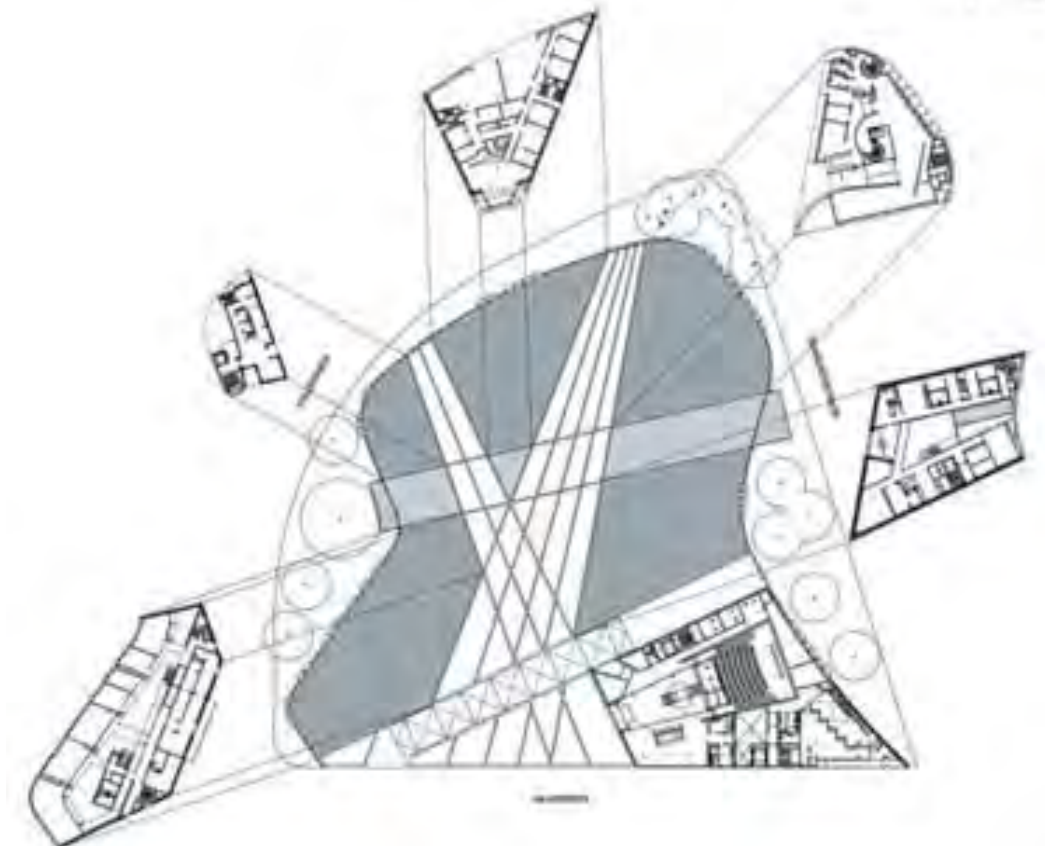
Strategy 2B - Gateway as Network



Strategy 2 - Gateway as Network

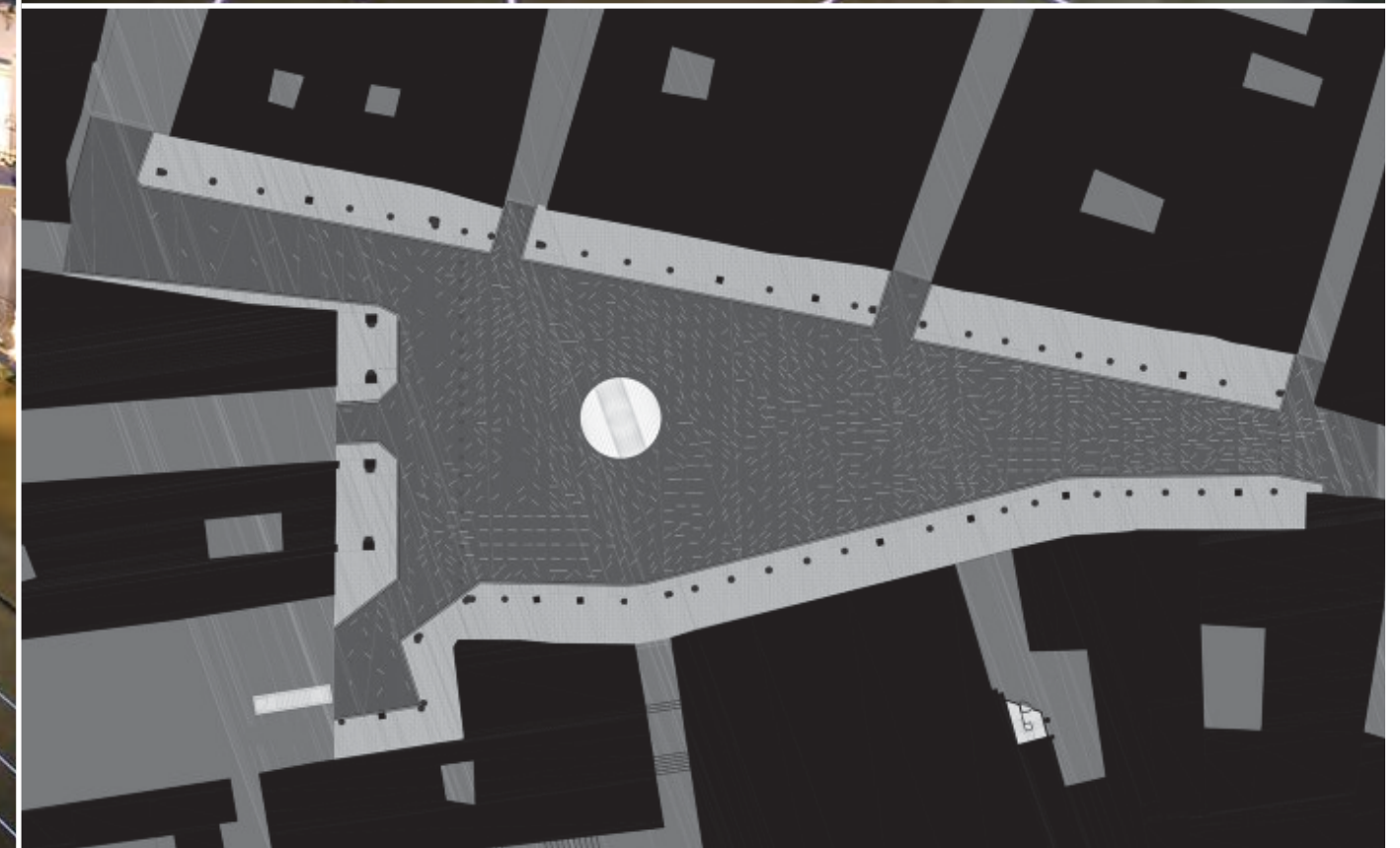


University of Illinois Desire Line



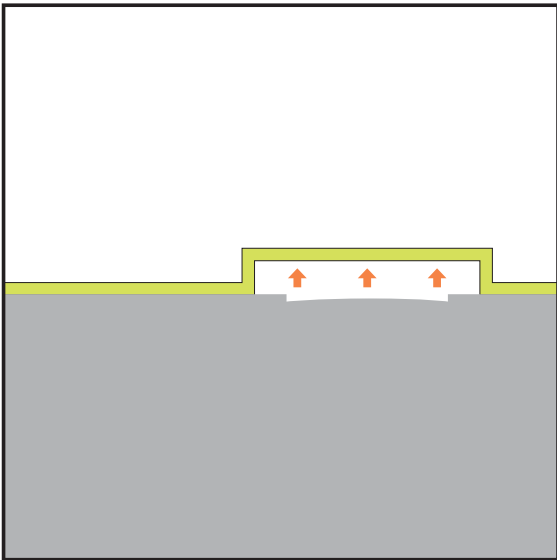
Berger + Parkkinen - Nordic Embassy Complex, Berlin

Strategy 2 - Gateway as Network



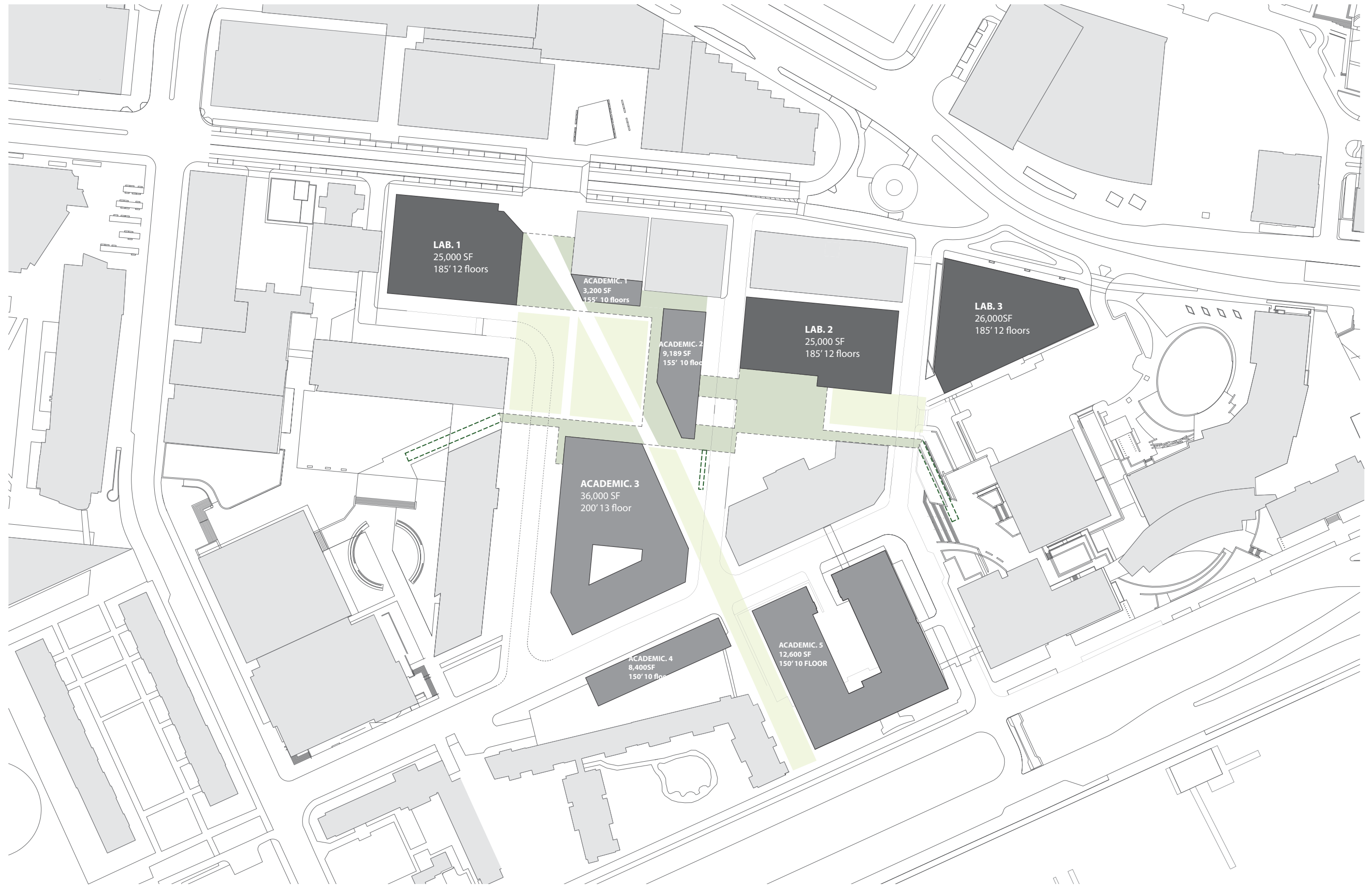
Fermin Vazquez - Torico Square, Spain

Strategy 3 - Gateway as Infinite Corridor extension

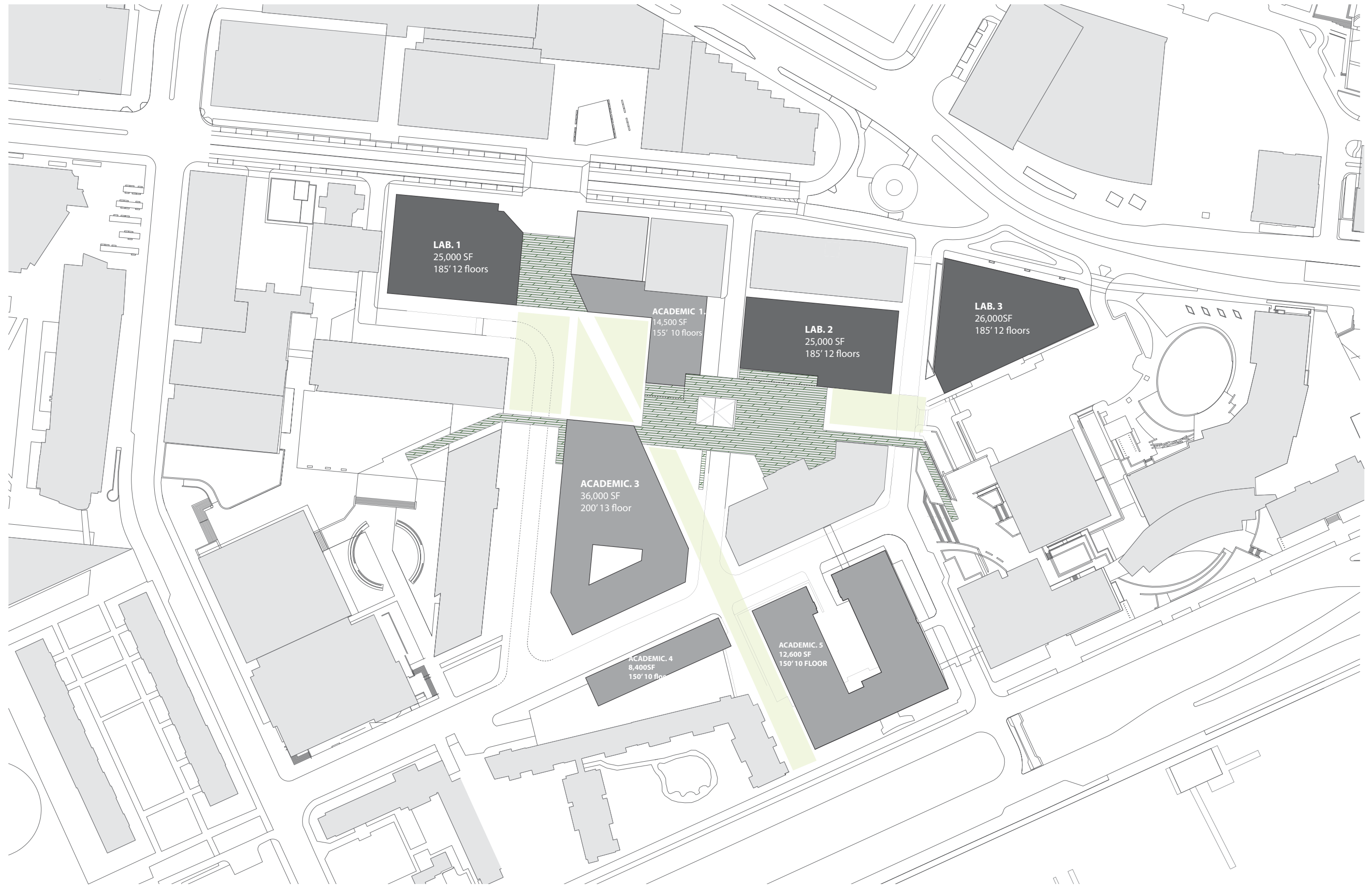


STRATEGY 3
Gateway as
Infinite Connection

Strategy 3A - Gateway as Infinite Corridor extension



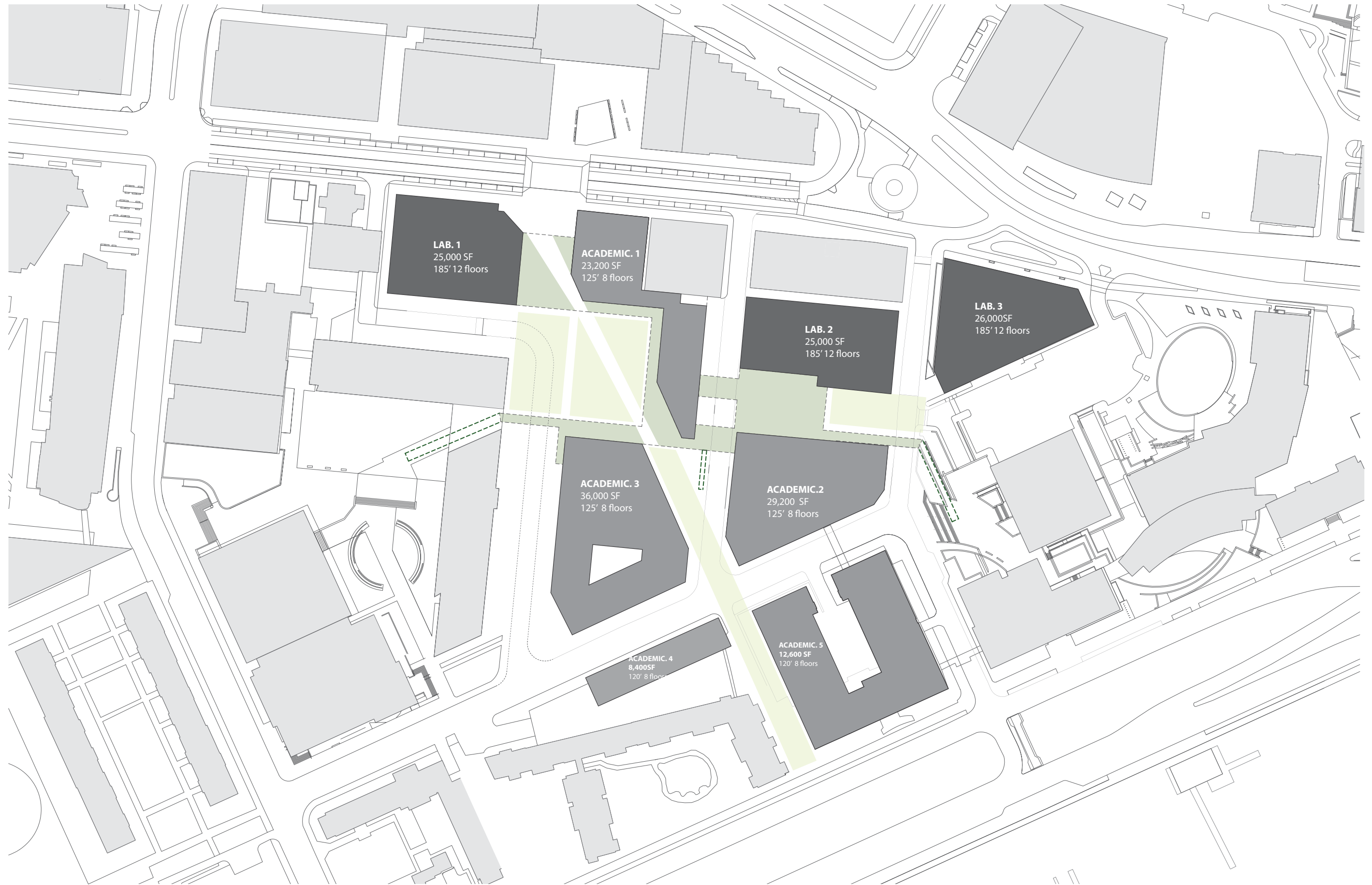
Strategy 3A - Gateway as Infinite Corridor extension



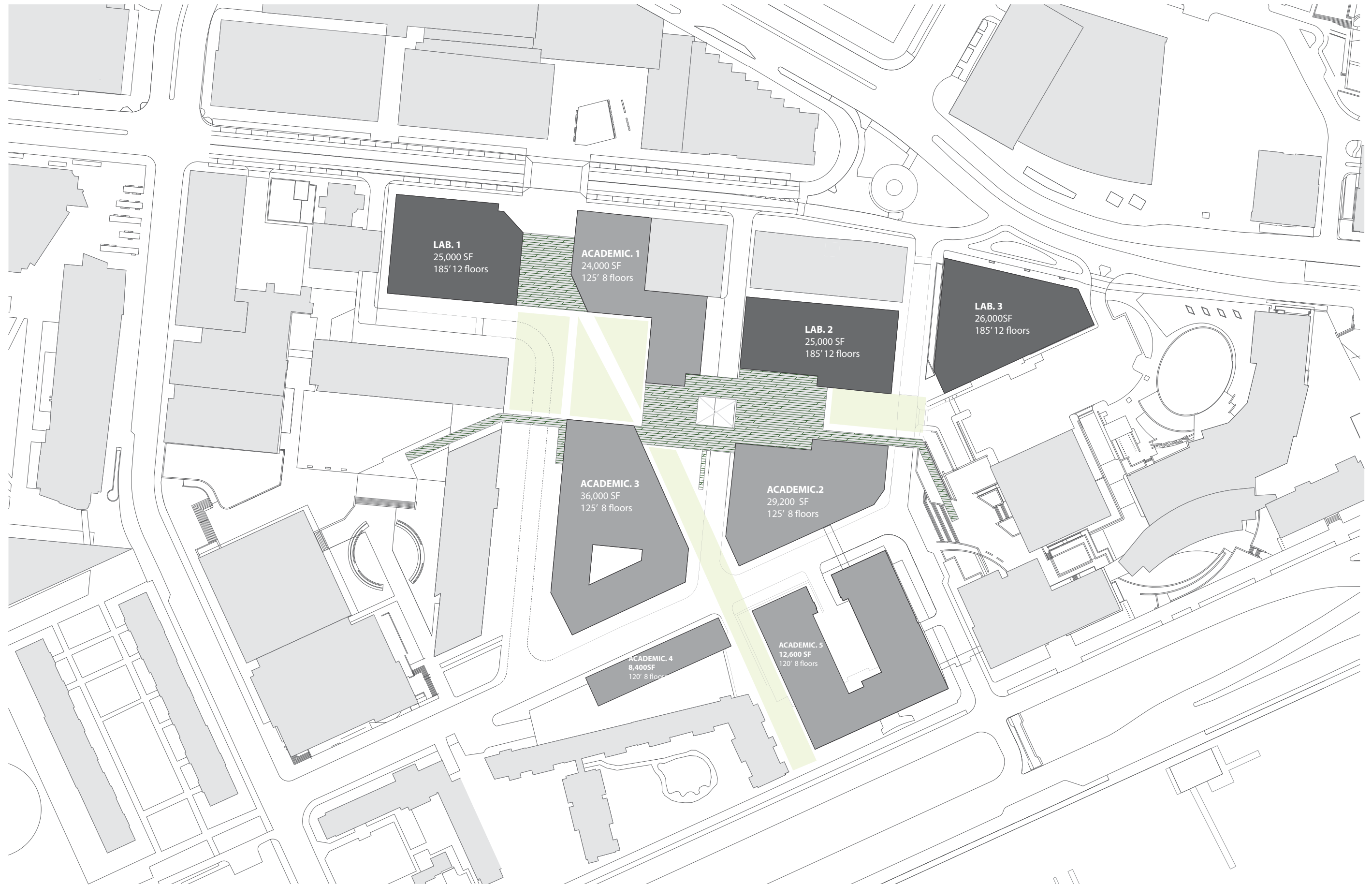
Strategy 3A - Gateway as Infinite Corridor extension



Strategy 3B - Gateway as Infinite Corridor extension



Strategy 3B - Gateway as Infinite Corridor extension



Strategy 3B - Gateway as Infinite Corridor extension



Strategy 3 - Gateway as Infinite Corridor extension



Weiss Manfredi - Olympic Sculpture Park, Seattle

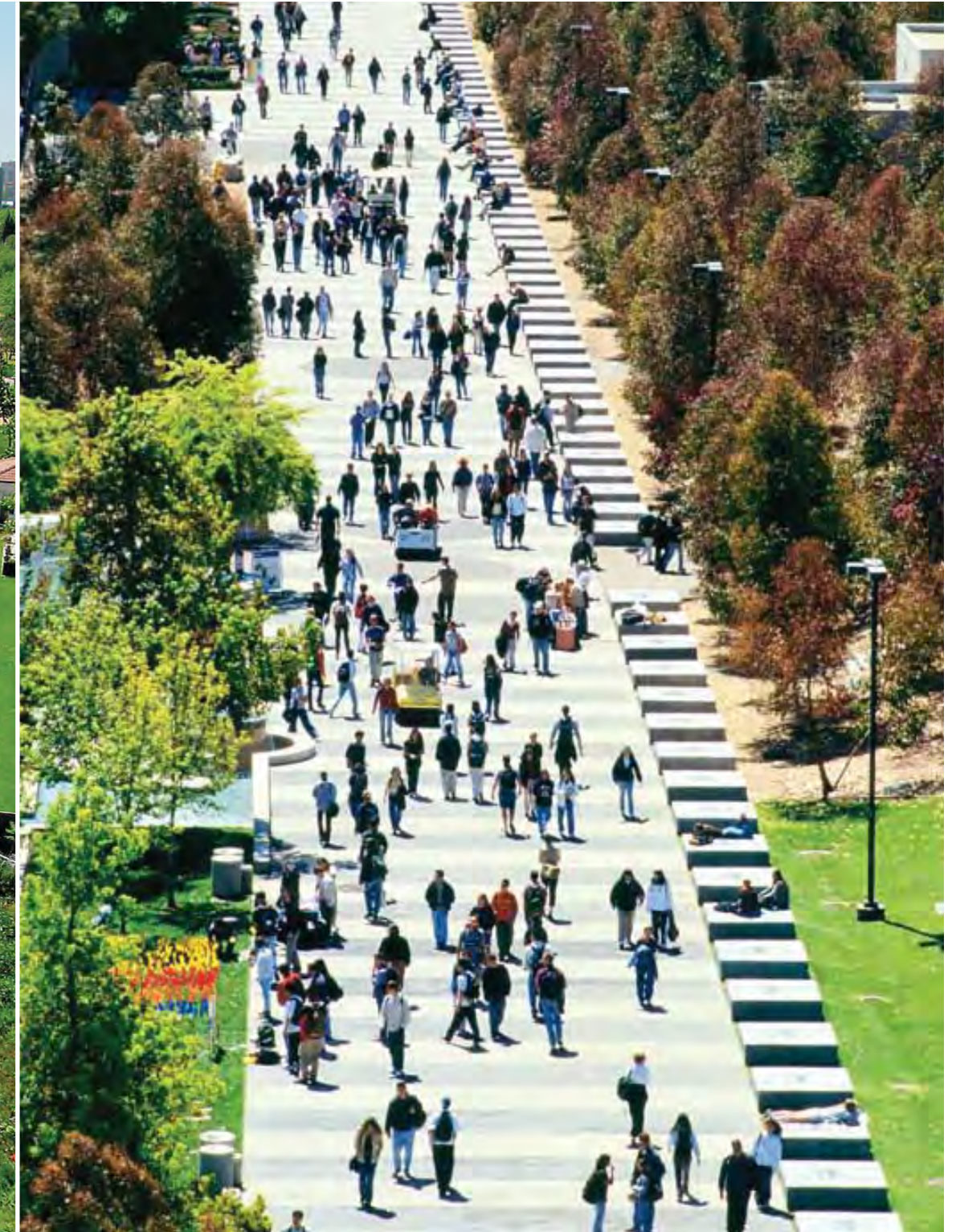


DS+R - High Line, New York

Strategy 3 - Gateway as Infinite Corridor extension

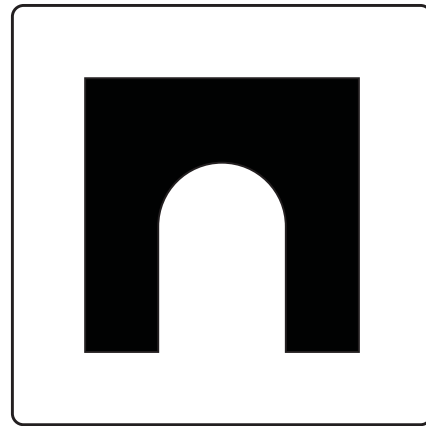


West 8 - Avenida De Portugal, Madrid

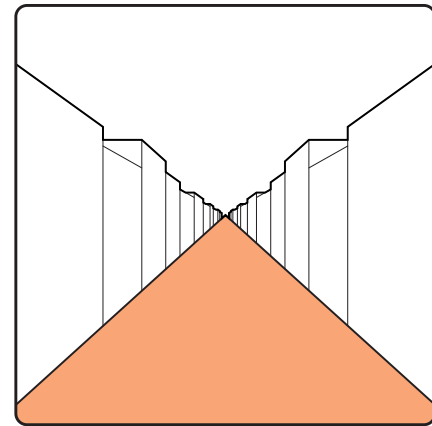


Peter walker - University of california Library Walk, San Diego

Critical Concepts



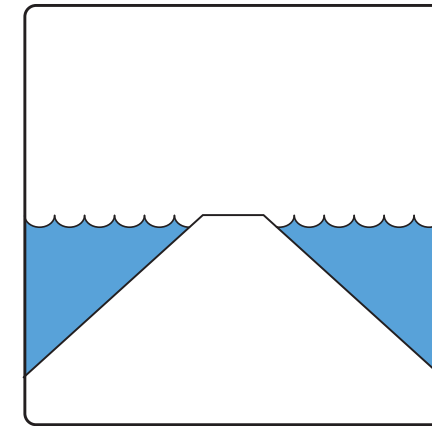
GATE



INFINITE CORRIDOR

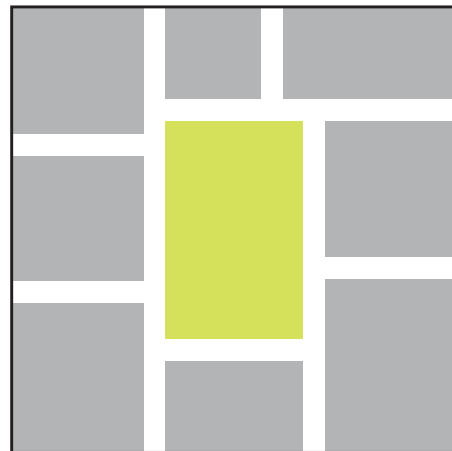


CONNECTION

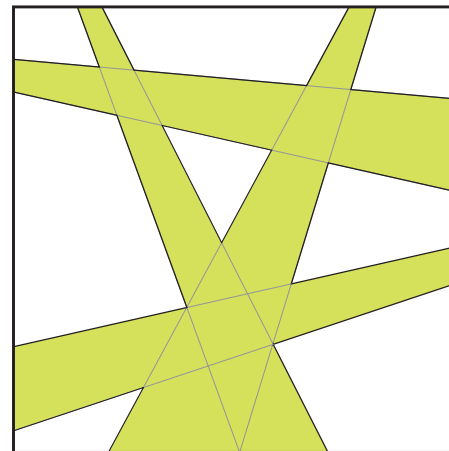


WATER

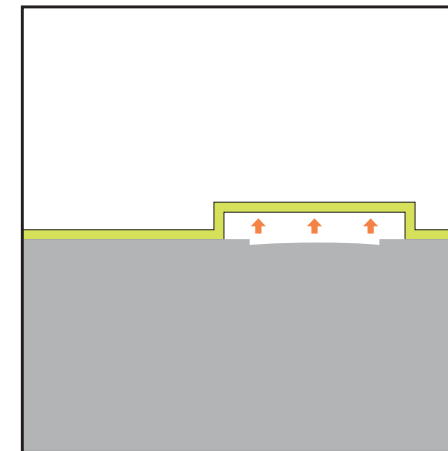
Strategies



STRATEGY 1
East Campus Gateway as
Public Space



STRATEGY 2
East Campus Gateway as
Network



STRATEGY 3
East Campus Gateway as
Infinite Corridor extension

