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Volvo Museum of Automotive History: Boston Massachusetts

C. Patrick McCabe

Roger Williams University, cmccabe262@g.rwu.edu

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volvo **m**useum of **a**utomotive **h**istory

Boston, Massachusetts

Independent Project Submitted to Roger Williams University SAAHP
In fulfillment of the requirements of the B. Arch degree
April 2009

C. Patrick McCabe
Class of 2009

Hasan Uddin-Khan
Distinguished Professor, RWU School of Architecture, Art & Historic Preservation

Stephen White
Dean, RWU School of Architecture, Art & Historic Preservation



volvo **m**useum of **a**utomotive **h**istory

Boston, Massachusetts

C. Patrick McCabe
Independent Thesis Project Design
Roger Williams University
December 2007
April 2009



VMoAH

volvo **m**useum of **a**utomotive **h**istory

simultaneous exploration of personal interaction and material product

The Volvo Museum of Automotive History places people and product in direct physical contact. The visitor travels on a path towards a closer personal relationship with the product understanding its history components and underlying generative concepts. Visitors will gain valuable information about Volvo's products but they will not feel forced to purchase anything. They may later decide to purchase a Volvo because they have reached a total understanding of the product and recognize it as a logically optimal solution to a personal need.



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The automobile is a critical element in the life of its owner. People who own a vehicle and rely on it in their everyday lives develop a degree of personal relationship with this machine, whether positive or negative. Why spend time in a car that does not fit your personal needs, shares with you no emotional connectivity, and that you know little to nothing about?

The heavily commercialized automobile market has become centered upon the accelerated "sign and drive, no money down" method of reeling customers in quickly and sending them back out the door with keys to a vehicle that they have not properly researched. Snap decisions like these are the catalyst of an unsuccessful car-to-driver relationship that can be avoided if proper personal and empirical research is conducted on the automobile first, in a stressless environment amongst others who are striving towards the same goal of successful vehicle selection.

The root of the problem of improper vehicle selection lies in the inability of a vehicle everyday should have the opportunity to logically choose an appropriate vehicle that suits them both physically and emotionally. This opportunity can be born in an organization that offers historical background, current achievements, conceptual ideas, and a strong emphasis on personal interaction and discovery. A place that provides a way to properly research and familiarize oneself with an automobile prior to purchase will result in more people bringing "the car" home.

There is a need for a place that will tangibly replace the countless hours spent motionlessly, solitarily, and impersonally online researching something that the consumer will physically interact with. The automobiles within the **Volvo Museum of Automotive History** will act as 'vehicles' for personal interaction and discovery.



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the vehicle as the facilitator of human interaction

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[problem statement/themes]





The Internet is now aiding in consumer automotive research, something that was once an entirely physical endeavor. Research tasks that were once materially interactive are now being completed while seated, staring impersonally into a static computer screen. People sit in voluntary solitary confinement as they select and purchase essential products that they rely greatly upon in their daily lives before ever laying a finger on them.

The result is an elevated potential for dissatisfaction in the purchase. This dissatisfaction may go unnoticed in small-scale purchases, but in the case of something so substantial in terms of monetary cost, frequency of use, and high level of reliance (such as an automobile) it will become glaring over time.

The chosen solitary confinement that people commit themselves to when researching potential purchases not only forfeits the possibility of interpersonal interaction in the task, but can also allow manufacturers to sell products based solely on the image that they create for them, rather than the quality, function, and efficiency of the product itself.

Should an individual purchase an expensive suit without first having it tailored to exact fitment specifications?

The automobile may not be something that is worn, but it is the container in which the average automobile owner will spend a large amount of hours per week.

A product so physical and financially substantial needs to be fully investigated and experienced by the consumer before it is committed to. Leasing has become very popular, and this may be related to a lack of a developed personal connection with the automobile. If the proper vehicle is chosen, the consumer should have developed a deep level of personal attachment to it as to not be so eager to rid their life of it after a mere three years.

Traditional dealerships are profit-driven enterprises that exist only to usher in and out product. A new method of vehicle research is necessary in order to bring people in close contact with the product prior to feeling forced to purchase it, and to spark discussions and explorations with others who may be able to aid them in a better selection.

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DIRECT physical interaction with people and material is necessary for an individual to best understand and interpret consumer research. Reliance upon impersonal positive consumer reviews—either read in print or online [which could have been generated by an individual with varying standards from your own] as a tool for product selection is a flawed process. Physical testing of the prospective object for purchase, observation of its history and the methods in which its key features were generated paired with live, physical discussion with other potential buyers/researchers are the only ways to ensure that a total understanding of such an influential product in daily life [automobile] has been achieved before purchase.

A new place for automotive learning, exploration, and discovery is the answer for this problem. Why pay \$300+ per month only to lack the complete satisfaction that might have been overlooked, every time you get behind the wheel?

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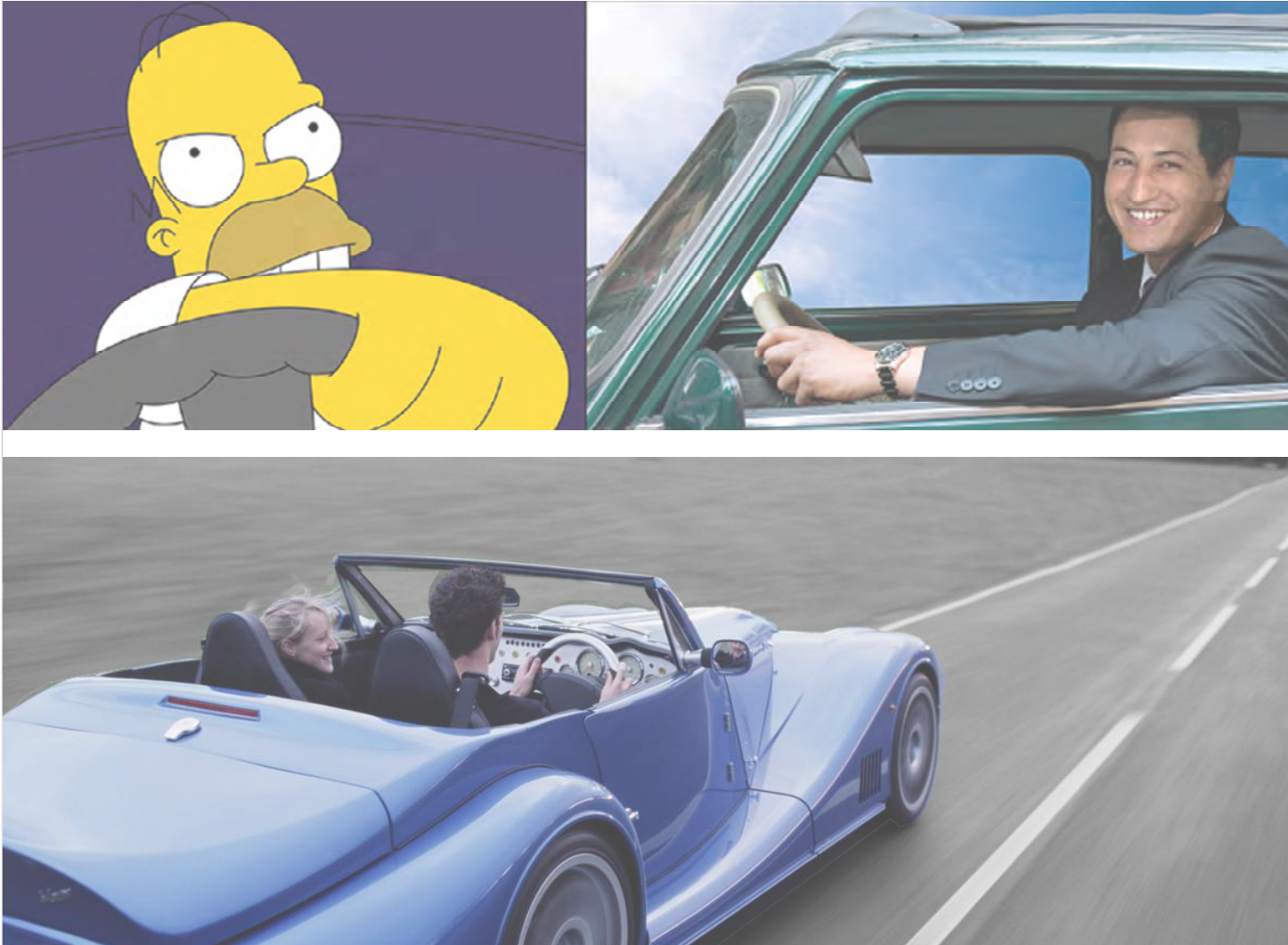
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the car can bring happiness [driving is freedom]

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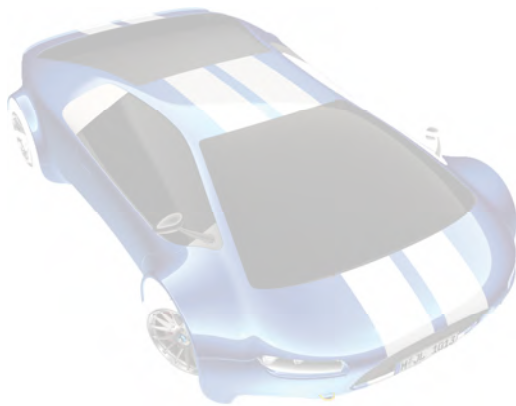
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[project statement/intentions]



The Volvo Museum of Automotive History is a culmination of many generations of the carmaker's vehicle design and development, paired with currently-produced vehicles and developmental concepts. This combination of programmatic elements in one space is an effort to take Internet research, review, exploration, and purchase of an automobile and re-insert it all into a physical and social environment. The project will place the potential consumer in direct contact with the brand of vehicle that he or she has chosen to research and/or buy, as well as other human beings who are there for similar reasons.

People will work together, in a sense, in the research of the vehicles housed in the building. The context of a physical building occupied by humans for this research rather than a faceless computer screen will give the potential customers and curious explorers alike a much richer experience of automobile research.

The VMoAH will not be pushy; it will not be suggestive of purchase, instead it will exhibit historical precedents and mechanical evaluations of the product, as well as current production models available for purchase in dealer showrooms throughout the country. The goal will not be to sell; the goal will be to display beautiful vehicles and innovative conceptual design, and if a visitor is appreciative of what they see and has been planning on purchasing a vehicle, the VMoAH may become their gateway to a Volvo purchase.

The building is a machine for research and exploration that also houses machines. The programmatic function of the VMoAH is solely **museum**, and there is nothing for sale within the structure.

Current auto dealerships are awkward settings for vehicle research and exploration. These cluttered, pushy, and uncomfortable places can be avoided by first visiting the VMoAH. From the labyrinth-like parking lot to the high-pressure sales and lack of interaction among customers, today's typical automobile dealership is a failure. The VMoAH isn't a dealership, but it is a museum that contains the products of a dealership in a relaxed museum setting.

[...the museum exists more as an evolving idea than a treasure house.]
-Lowry,¹⁰

project themes and intentions

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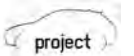
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The VMoAH is an automobile world that will encourage personal interaction and is conceived and designed from a functionalist standpoint of efficient circulation and vehicle exhibition. It is not decorated with any excessive ornament, and although a designated path through the galleries is intended, it is not forced upon visitors. Entry is clear, and all accessible levels to the public are easily differentiated and their programmatic functions clearly recognizable.

Vehicles are situated in cylindrical masses through the building leaving no level of the structure without an automobile presence of some degree. Constant visual interaction between levels is possible, as well as observation of others exploring other parts of the program.

The VMoAH provides consumers with an opportunity to investigate automobiles as well as each other in an environment that is clear, relaxed, and unified.

The intention of a visit to the VMoAH may be to view historic vehicles or to research the purchase a new one, but the results of the visit will most-likely be more informative than intended. Vehicles within the program act as conversation pieces between people who are investigating them. Opinions on new cars, theories on past designs, suggestions for concepts of the future can all be discussed amongst visitors of the museum. Upon exit, visitors will either have met a new understanding of the carmaker, the desire to purchase a new Volvo of their own, or the acquaintance of a new person.

The VMoAH negates the need to research Volvos at a dealership. It is a socially interactive place infused with learning and discovery. The Washington Street facade of the building is fairly transparent in gallery areas in order to display the contents of the museum in an effort to spark the interest of the potential visitor.

[... it appears that in the end, there can be no generally applicable rules for the architecture of the museum, which of course must meet a series of functional requirements. The claim on the one hand to represent a place in which special things from the past will be shown and conserved for the future, and on the other hand, to adequately represent the present in an ambience unique in each case requires a specific amount of inventiveness per se, one that goes beyond the limits of that which can be regulated.]
-Naredi-Rainer, 9

[Architecture- its social relevance and formal invention- cannot be dissociated from the events that "happen" in it.]
- Bernard Tschumi

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interaction intertwines around and within the automobiles on display

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[program outline]





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The intended client/user profile is inclusive of the entire citizen population of the world.

it is possible to see the origin of the conceptual design in the form of current vehicular models

Approaching the site of the newly constructed Volvo Museum of Automotive History, the lack of parked cars that used to flood the site is evident. Where have the cars gone, and what is this building which has consumed this public parking lot? Upon nearing closer to the building old and new vehicles contained within varying levels of the transparent facade beckon to be explored. It looks like a fragmented showroom that sells pristine vintage automobiles. Or is it a museum that exhibits new vehicles alongside old? It is a culmination of both. Can a new vehicle showroom also be a museum? It can, and it is, for this is a new kind of museum... a "showseum" if you will, a promenade through varying vehicle types and themes leading as a historical trail of bread crumbs to the treasure at the end that exists as the advanced new vehicles awaiting perusal and exploration. A large plaza and cafe exist at ground level as a billboard to spark potential interest. The building is welcoming. You do not feel pressured to enter; you want to enter.

The lobby is spacious and the volume extends through all levels of the building. There are plenty of spaces to relax and peruse the program literature of the functions that surround you on varying levels. Each public level penetrates the lobby in some way through the open-air penetration of one piece of program into another.

The museum program begins immediately adjacent to the lobby and cafe. Automotive exploration begins there and winds its way through the different exhibits until the concept gallery is reached.

Overall the mood of the building is calm, with none of the stresses of a typical dealership showroom.



[...its ability to treat its galleries as a kind of laboratory in which to engage the public with its programs and ideas.]

--Lowry/O

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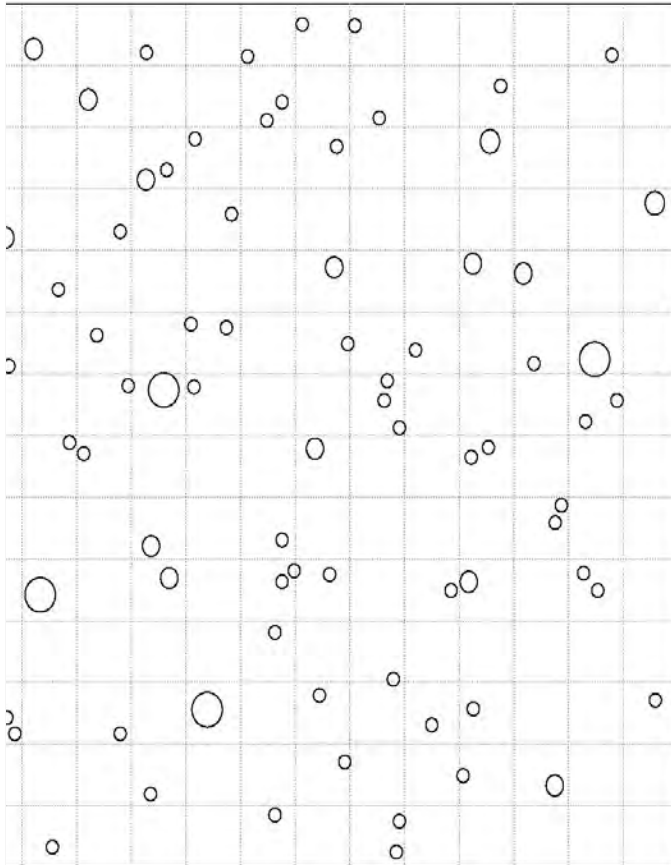
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[“ The function of the museum as a place in which the special is conserved and at the same time exhibited has certain consequences: firstly for the design of the entrance area. In the representative museums of the nineteenth century, more or less distinctive formulae of dignity from architectural history’s canon distinguish the entrance, which almost always lies something in the building axis, and in that way indicates that the interior contains something extraordinary.]

-Naredi-Rainer, 39

The [**west plaza**] opening onto Washington is easily permeable from the sidewalk. It is a welcoming, light and open area that provides a haven to pedestrians who have become interested in the building. The role of the plaza is to generate a portal between the street and entry lobby in which visitors may prepare to explore the contents of the building, and gather informational literature that will aid in the process.

The [**lobby**] is the first interior space that is entered by the visitor. This space will be flooded with the necessary information required to thoroughly utilize the exhibits within the building.

The [**coat room**] offers a safe and convenient area for patrons to check coats and other valuable belongings that they do not wish to carry with them while traversing the building.

The [**bathrooms**] are located adjacent to each gallery in order to provide patrons with easy access to facilities.

The [**information center**] is located within the lobby and provides literature that will give the visitor the direction he or she needs to begin exploration of the exhibits of the VMoAH.

The [**vehicle galleries**] are arranged as a physical timeline of all decades of Volvo automobiles beginning with the 1920s up to the present date and into the future. These decades range from distant history, to current production vehicles, to conceptual prototypes. The galleries as a whole act to highlight the major trademarks of Volvo’s strong design heritage and dedication to safety.

Each decade’s vehicle gallery is flanked by a [**vehicle component gallery**] that exhibits items of marked importance from that decade of Volvo’s vehicle development. These exhibits range from mechanical items such as engines, and brakes, to safety items like seatbelts and airbag technology.

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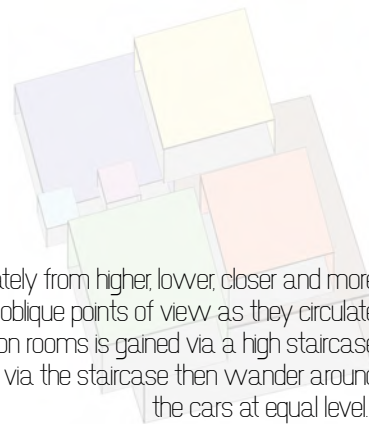
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The [**cafe/shop**] is accessible to visitors even if they do not wish to travel through the museum galleries. The cafe' will offer light fare such as sandwiches, soft drinks, and coffee, while the museum shop contained in the same area, will feature Volvo brand items such as apparel and small-scale models of the vehicles on display in the galleries

The [**administration**] spaces housed in the building are located on intermediate levels between gallery floors. These areas are accessible by separate elevators and keyed access doors for employees and any other cleared personell. Contained on administration floors are offices, break rooms, conference rooms, projection rooms, restrooms, and balconies. Each floor of administration is linked by a pedestrian [**skybridge**]

The [**parking level**] is located directly below-grade beneath the eastern half of the building, and acts as parking for museum staff as well as storage of gallery vehicles not currently on display. A security office is located on this level. Also contained in the parking level are mechanical cores and storage rooms.

A [**vehicle elevator**] extends from the parking level up to each gallery floor and allows for vehicle circulation throughout the entire museum.



["Visitors see the cars alternately from higher, lower, closer and more distant, frontal and more oblique points of view as they circulate around. Access to the collection rooms is gained via a high staircase - you enter at the higher level via the staircase then wander around the cars at equal level"]

-Van Berkel, 3

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{Inside the museum, the circulation generated by the arrangement and linking of the individual spaces determines the quality of the museum experience to at least as great an extent as the form or character of the individual spaces.}

[The entrance to the museum, which is the seam between inside and outside in a way represents the architectural interface between the public and the content of the collection, triggers in the visitor a certain attitude of expectation, which is confirmed, modified or corrected by the foyer or the entrance hall.]
-Naredi-Rainer, 40

[The motto of the competition design was 'Love it- Live it'. This phrase is meaningless, but says something about the wish to make an intense, joyous, all-encompassing building; a museum for people to move through, dream, learn, look and let themselves be oriented by fascinations, light and space..]
-Van Berkel, 53



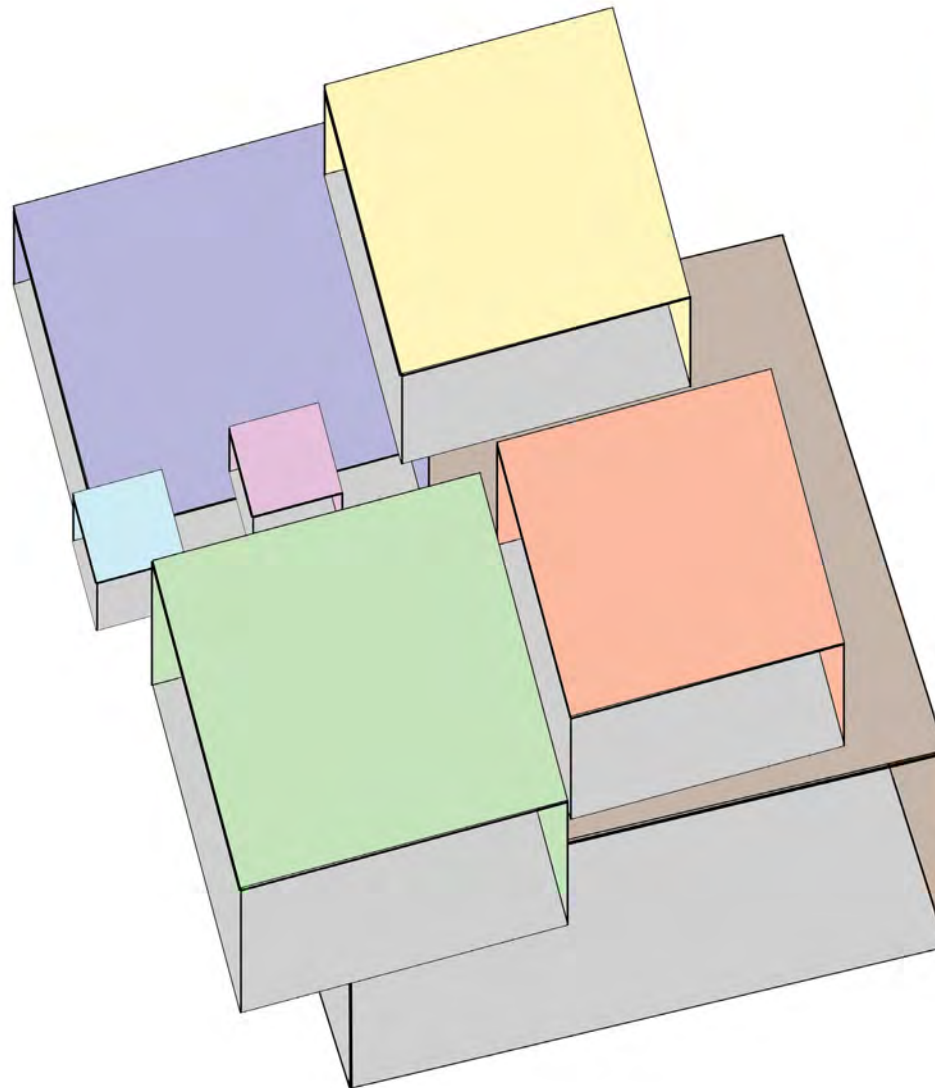
[The visitor is an active element in the exhibition, he uses his hands to provoke nature and contemplates with emotion the way in which nature responds" ...To come out of an exhibition with more questions (with more doubts, even) than the ones that existed when entering is, precisely, a good way of sizing up the value of an exhibition. To have something to resolve, to hit upon a new analogy, to detect a paradox or a contradiction, to glimpse a new idea, to suffer the assault of a new suspicion, to register a new datum, to plan a new experience- all this will trigger activity between the mind and reality by way of reflexion. Reflecting is conversing with oneself. Or even conversing with another visitor. The idea is to understand. In a museum it's even possible to stimulate sudden understanding.]
-Wagensberg, 37

Below Grade Level	Ground Level	2nd Level (ADMIN)	3rd Level (MUSEUM)	4th Level (ADMIN)	5th Level (MUSEUM)	Roof
parking 16275 storage 3672 mech 808 egress 473 elev 236 security 100 total 21915	Service egress stairs 802 restrooms 563 stock room 460 delivery 455 elevators 337 vehicle elevator 300 mech 380 exit 200 storage 73 security 65 total 3525 Cafe cafe seating/shop 2800 outdoor cafe 766 cafe/counter 555 cafe work space 250 cafe prep 180 cafe office 100 total 4659 Museum vehicle gallery 800 outdoor piazzas 524 component gallery 3030 entry piazza 1625 lobby/info 800 lobby/casual room 640 computer area 600 projection room 342 total 2046 total 28682	Service egress 618 lav 366 mech 208 elevator 90 storage 80 total 1362 Admin prod/dev/free space 2472 sky bridge 562 shared office 435 large office 315 projection room 275 conference room 250 single office 180 break/lounge 140 total 4659 total 6021	Service egress 602 lav 545 elevator 336 vehicle elevator 300 storage 290 mech 280 total 2553 Museum vehicle gallery 9900 component gallery 5430 balcony 520 lounge 485 total 16265 total 18818	Service egress 618 lav 366 mech 208 elevator 90 storage 80 total 1362 Admin prod/dev/free space 2472 sky bridge 562 shared office 435 large office 315 projection room 275 conference room 250 single office 180 break/lounge 140 total 4659 total 6021	Service egress 802 lav 545 elevator 336 vehicle elevator 300 storage 290 mech 280 total 2553 Museum vehicle gallery 9900 component gallery 5430 balcony 520 lounge 485 total 16265 total 18818	green roof 5588 photovoltaic 3836 egress 618 elevator 348 mech 307 total 11127

PROJECT	
Below Grade Level	21915
Ground Level	28682
2nd Level (ADMIN)	6021
3rd Level (Museum)	18818
4th Level (ADMIN)	6021
5th Level (MUSEUM)	18818
Roof	11127
PROJECT TOTAL	111,402



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- entry
- museum
- showrooms
- design center
- vehicle repair
- cafe'
- parking

32' 64'

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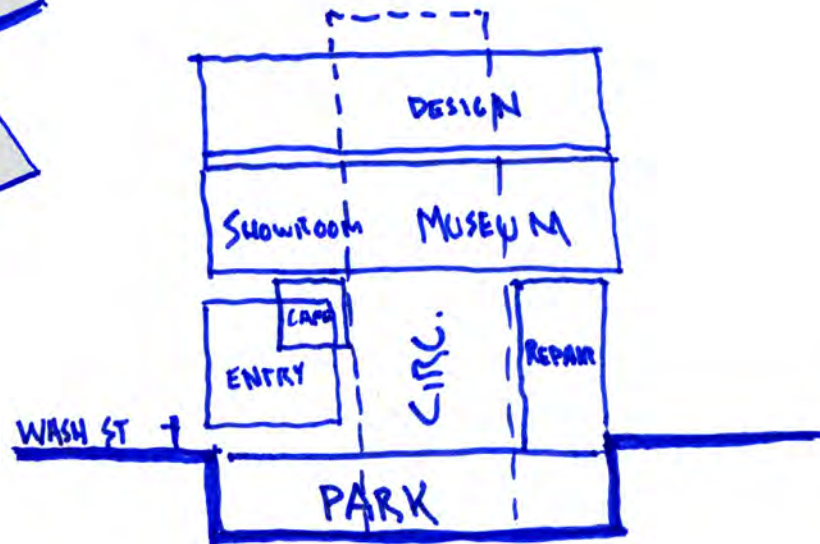
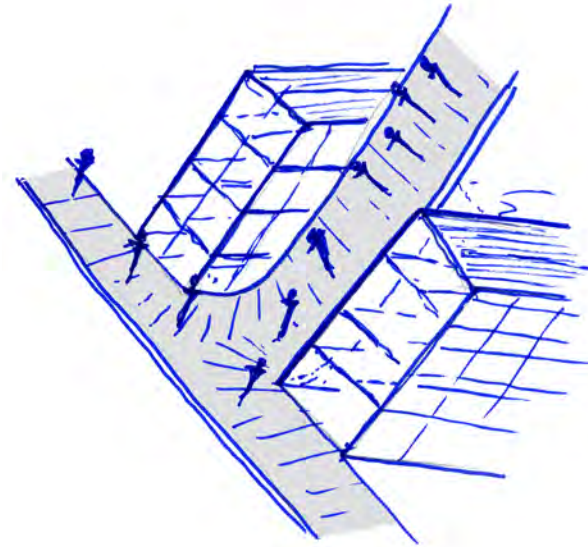
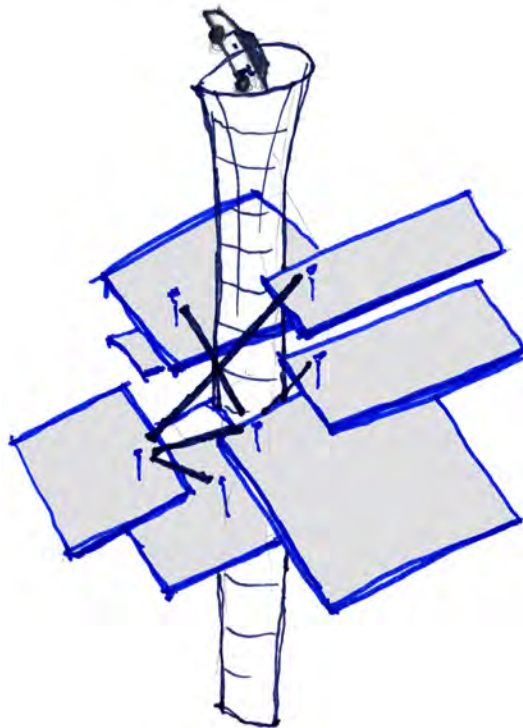
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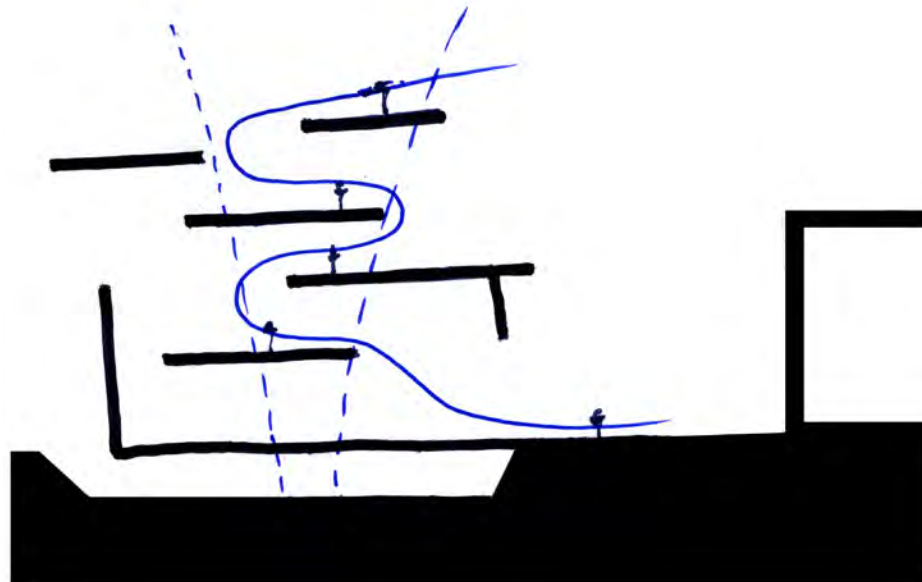
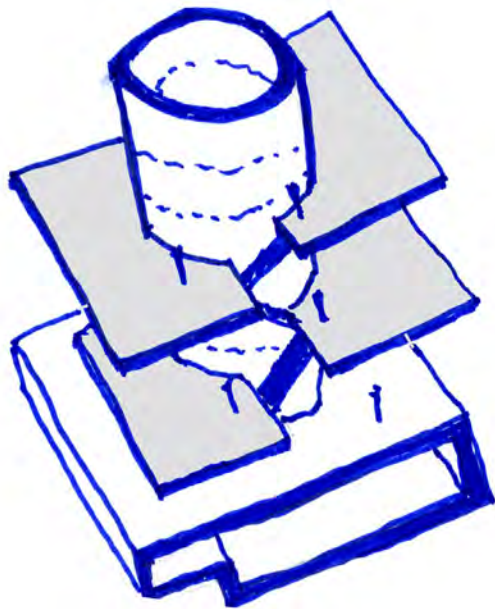
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the building is a intertwining showcase of the automobile from historical origin to future concept

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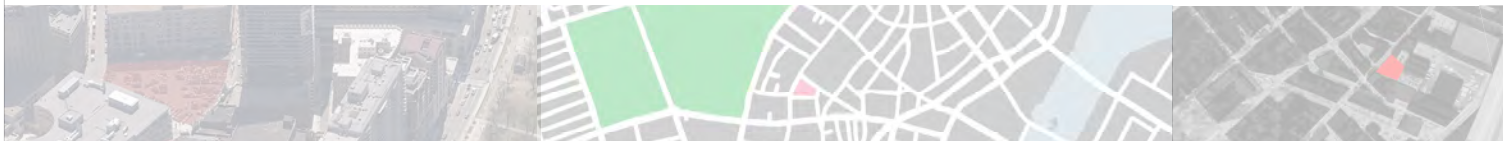
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[site information]



["Boston is the largest city in New England, the capital of Massachusetts, and the dominant metropolis of the northeast corner of the United States. An old Atlantic seaport, founded in 1630, it grew up with the country. The metropolitan area's population is 2,870,000, making it the ninth largest in the country. The city of Boston itself, population 574,000, lies at the coastal center of a ring of cities and towns. More than that of most cities in America, its present condition is the result of continuous reworking by successive generations who have drained, filled, leveled, planted, built, and rebuilt the 48+ square miles that lie within its municipal boundaries.]
-Krieger, 3

The site is located within walking distance of the downtown area of Boston. Currently, the site located at 575 Washington Street is a parking lot. The current public and private usage of the parking lot will be preserved.

Access to the site from beyond the extent of the city travelling on I-93 is a straightforward process, [illustrated in diagram] only requiring a few turns of the steering wheel. Pedestrian access from within the city is facilitated by the main axis of Washington Street.

A site located directly within the busy downtown area of Boston would be optimal for pedestrian access, but since the program involves a vehicle repair facility, automobile street access needs to be possible.

Since the Volvo Museum of Automotive History involves a public museum component, it requires a location which is nearby to active art galleries. It is intended that the visitors who peruse those galleries will find their way to the VMoAH.

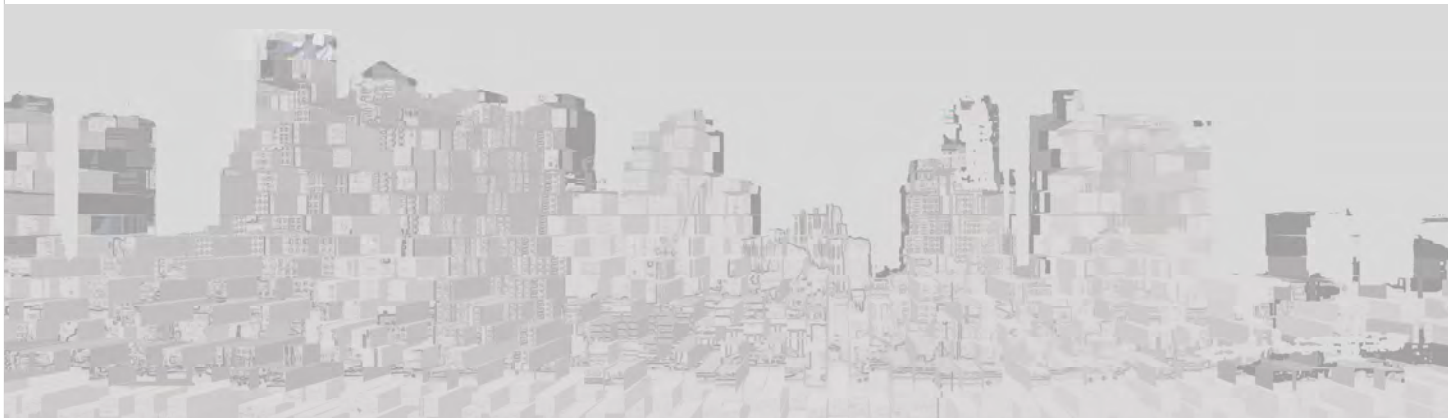


Pedestrian exposure to the building is critical for success. Currently utilized pedestrian paths in the city of Boston pass directly in front of the proposed site [see diagram], which will give the VMoAH the pedestrian presence that it needs.

Parking within the Midtown and Chinatown areas of Boston in which the site is embedded offer public parking in garages located near to the site, and in spaces parallel to city streets.

Public transit stops are located within close walking distance to the site, which will enable visitors to reach the building with ease and clarity.

This large site will adequately accommodate the large necessary amount of programmatic square footage of the VMoAH as illustrated in Program analysis.





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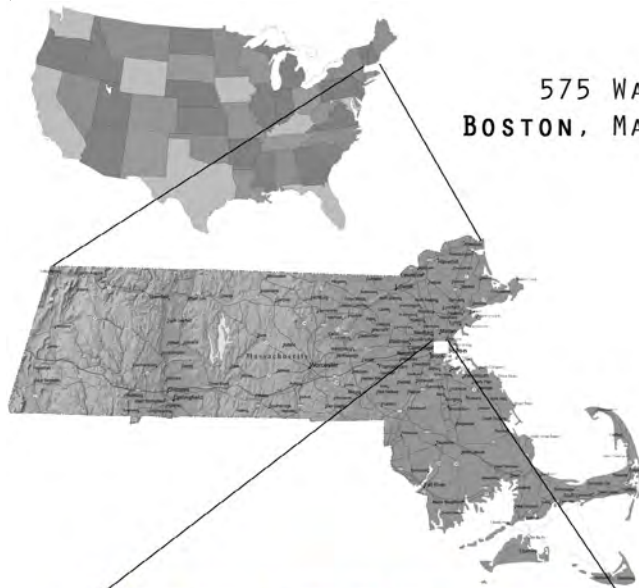
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575 WASHINGTON ST
BOSTON, MASSACHUSETTS



country-to-site location focus



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driving approach from the South to 575 W Washington St, Boston, via I-93 and Kneeland Ave



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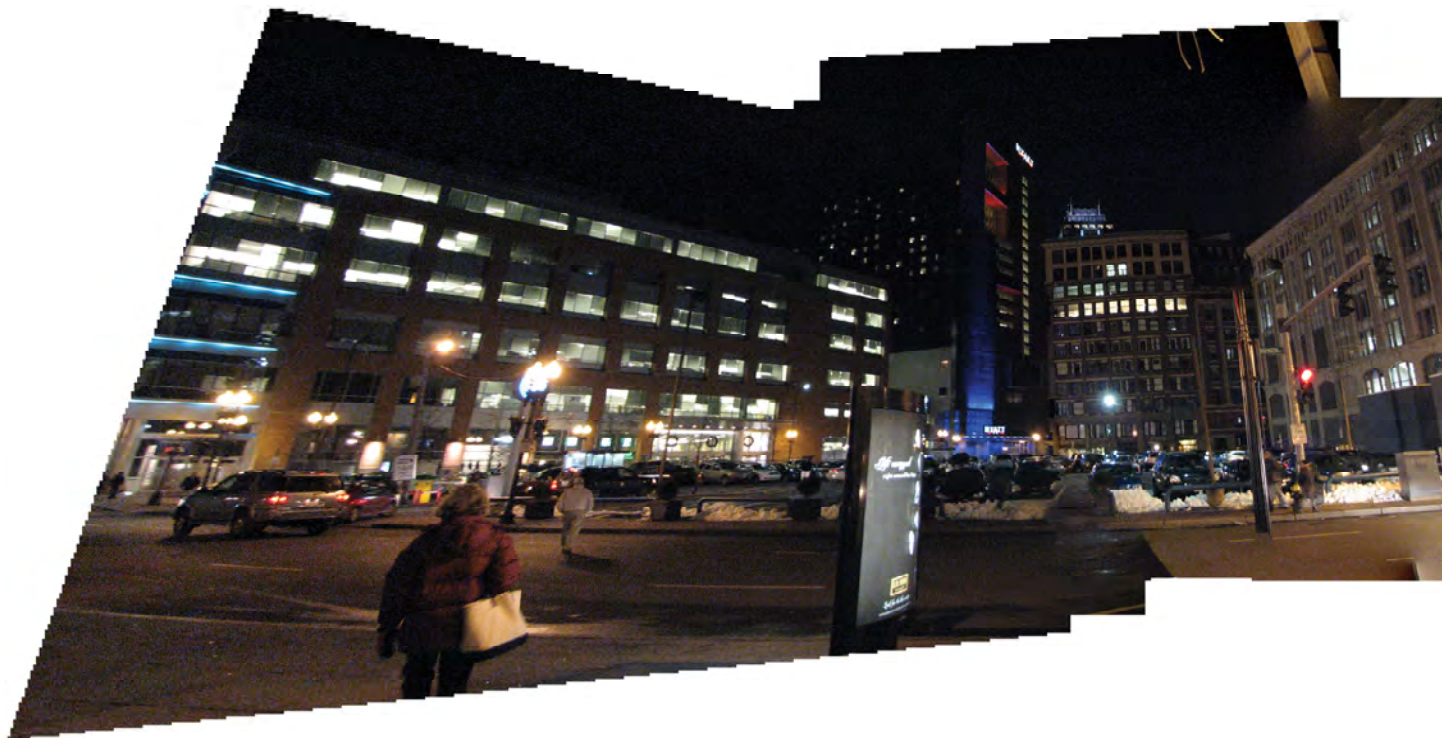
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panoramic view of site from pedestrian eye level



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evening (6pm Saturday Dec. 8) panoramic view of site from pedestrian eye level

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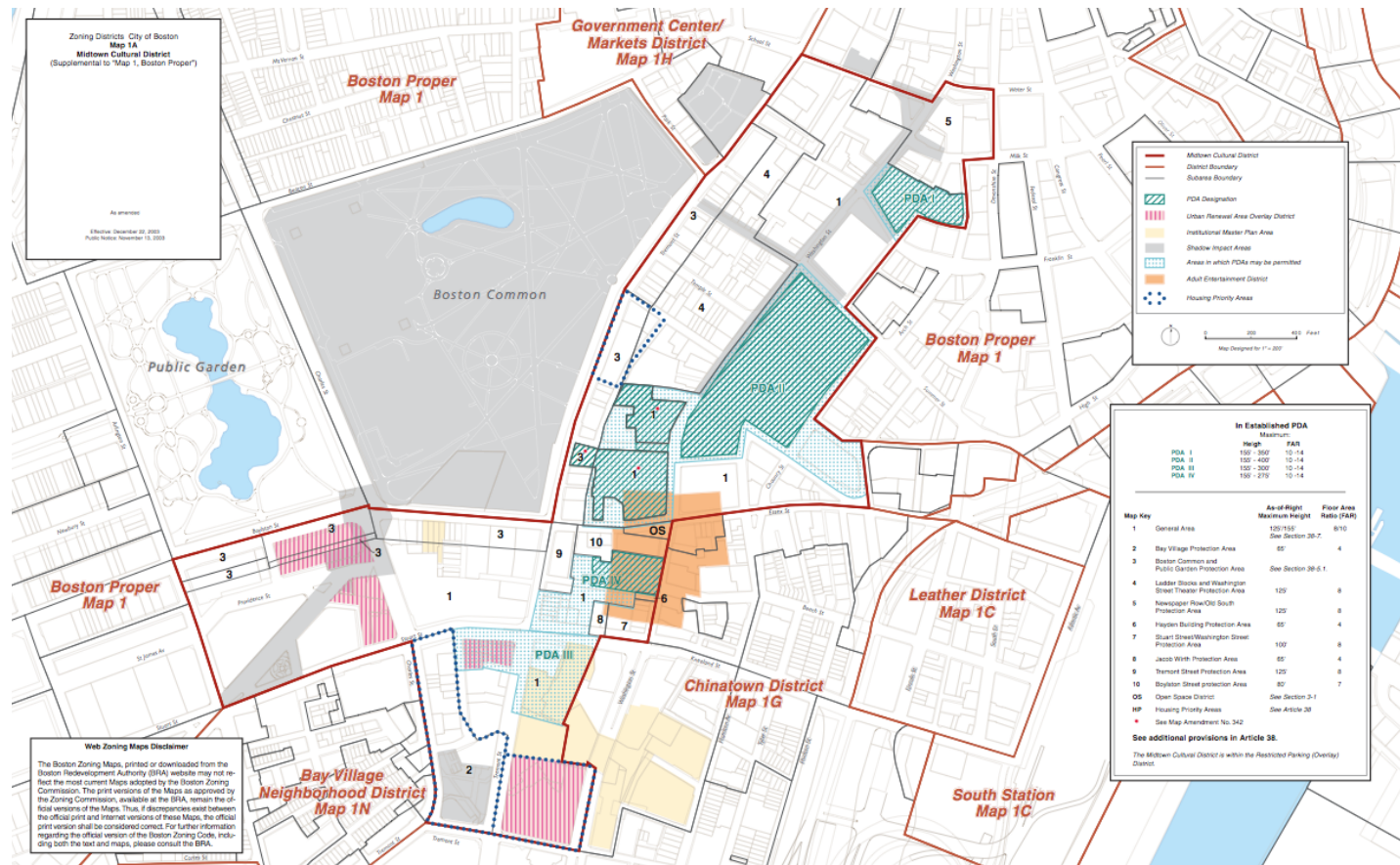
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Boston perimeter growth 1630-2000

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[■=site] [■=Washington Street public realm]

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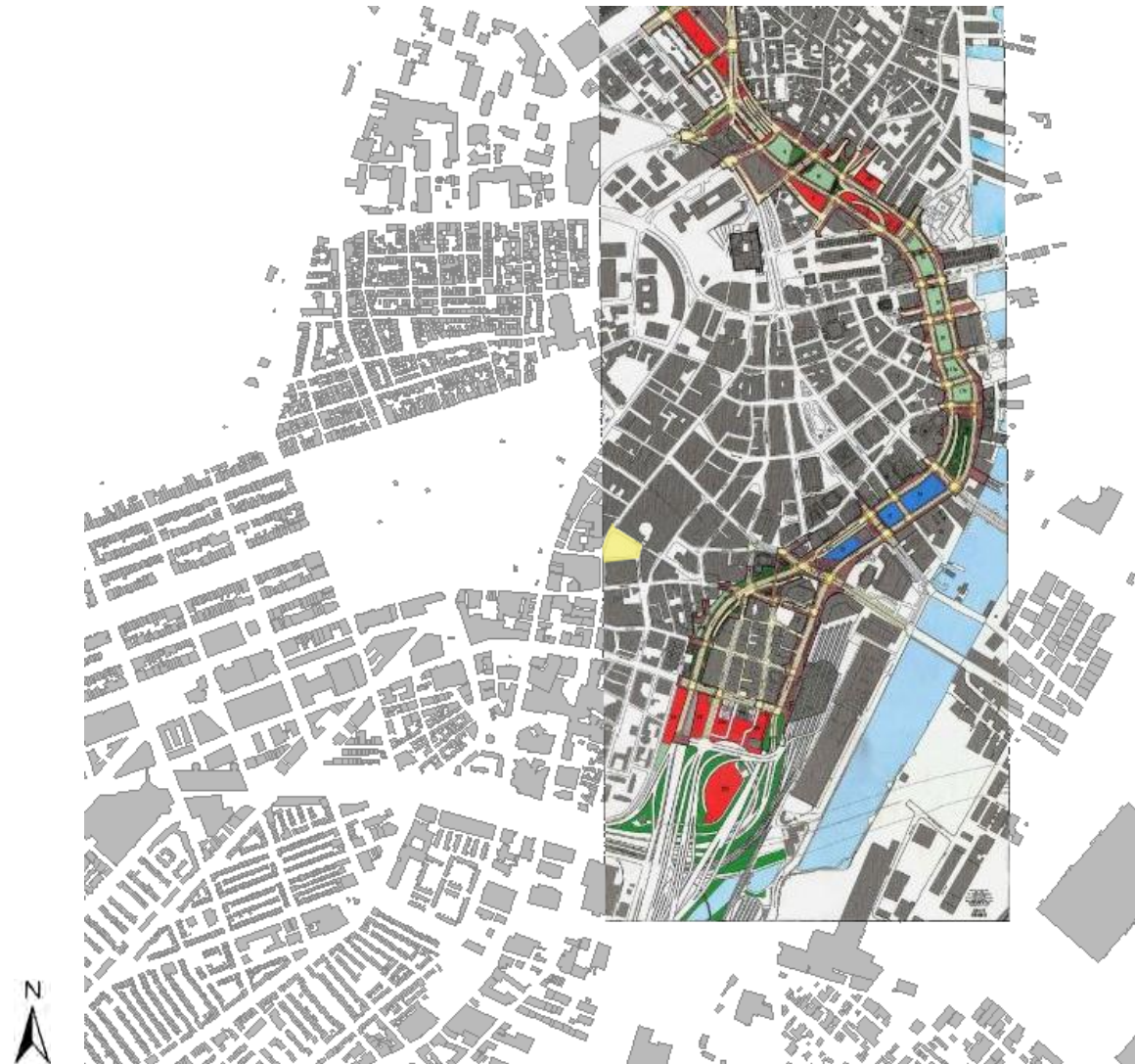
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[=site] Big Dig parcels as of 2006. Site is unaffected by planned subterranean development

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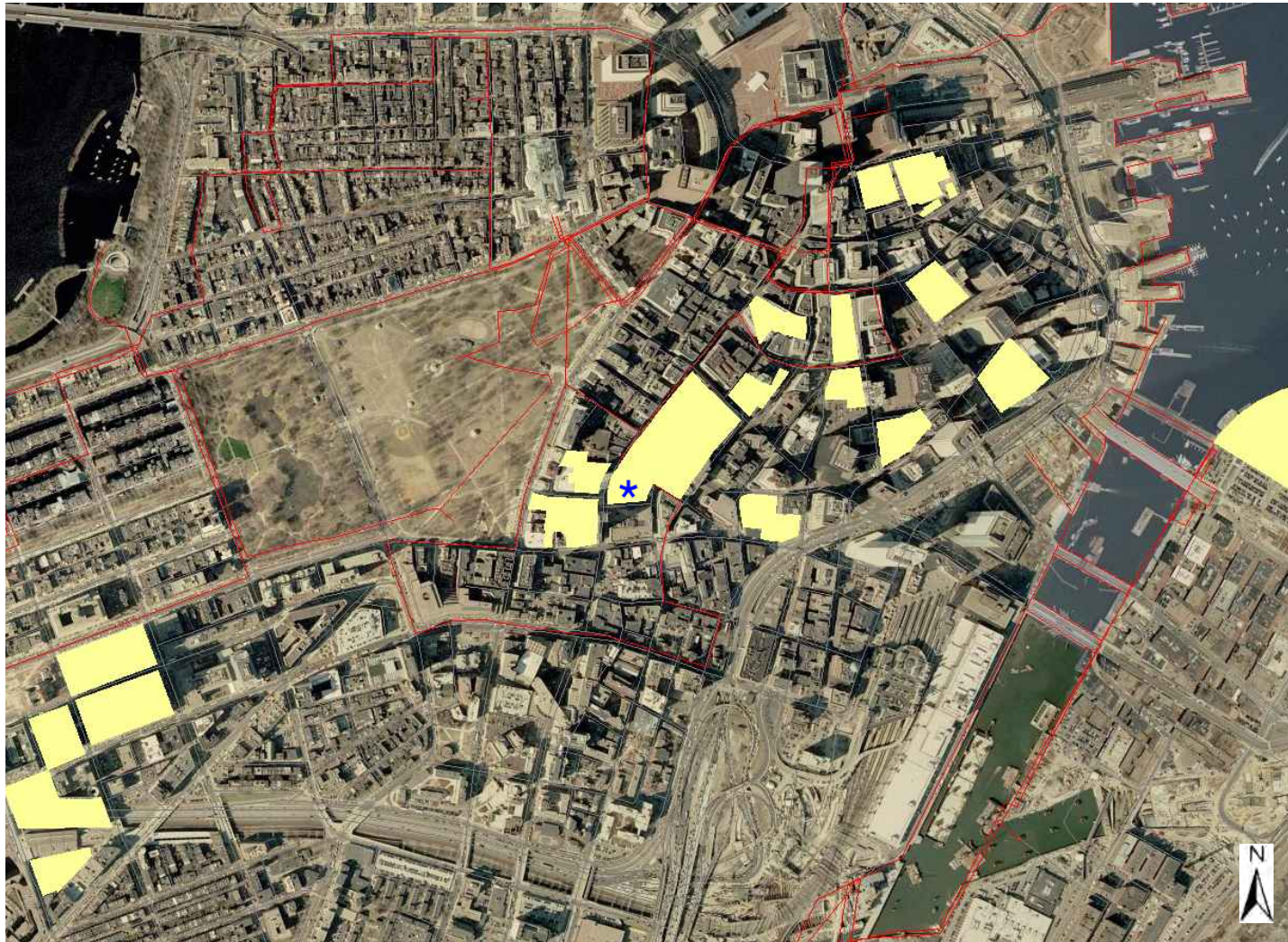
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[* =site] [■ =city tourist paths] [■ =Boston Planned Development Areas as of 2006]

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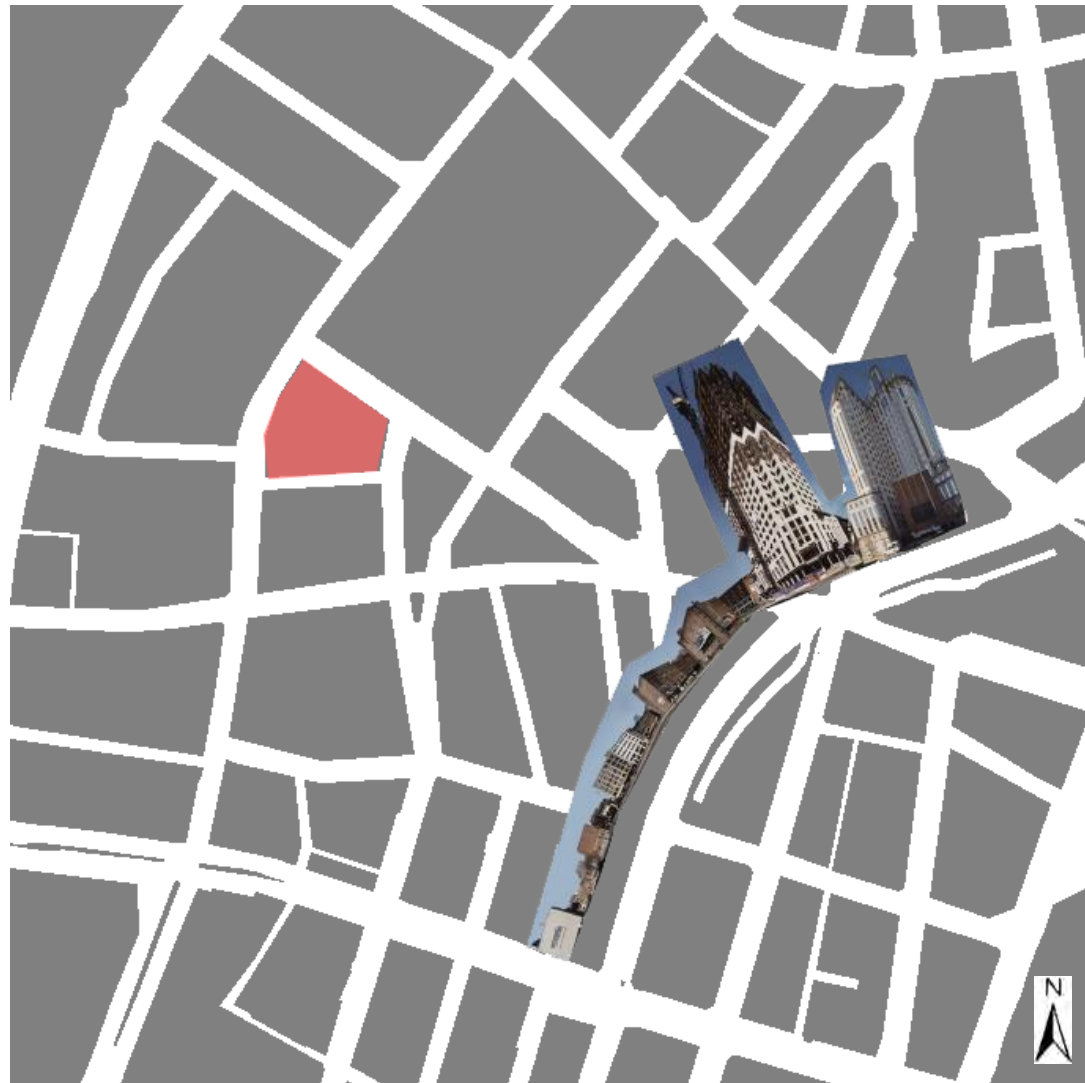
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[* =site] [■ =outlined Central Artery Corridors as indicated by the City of Boston 2006]



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[■ =site] Elevations of nearby Chinatown buildings

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[* =site] [=outlined city boundary of Boston] [outline delineates city parcels]

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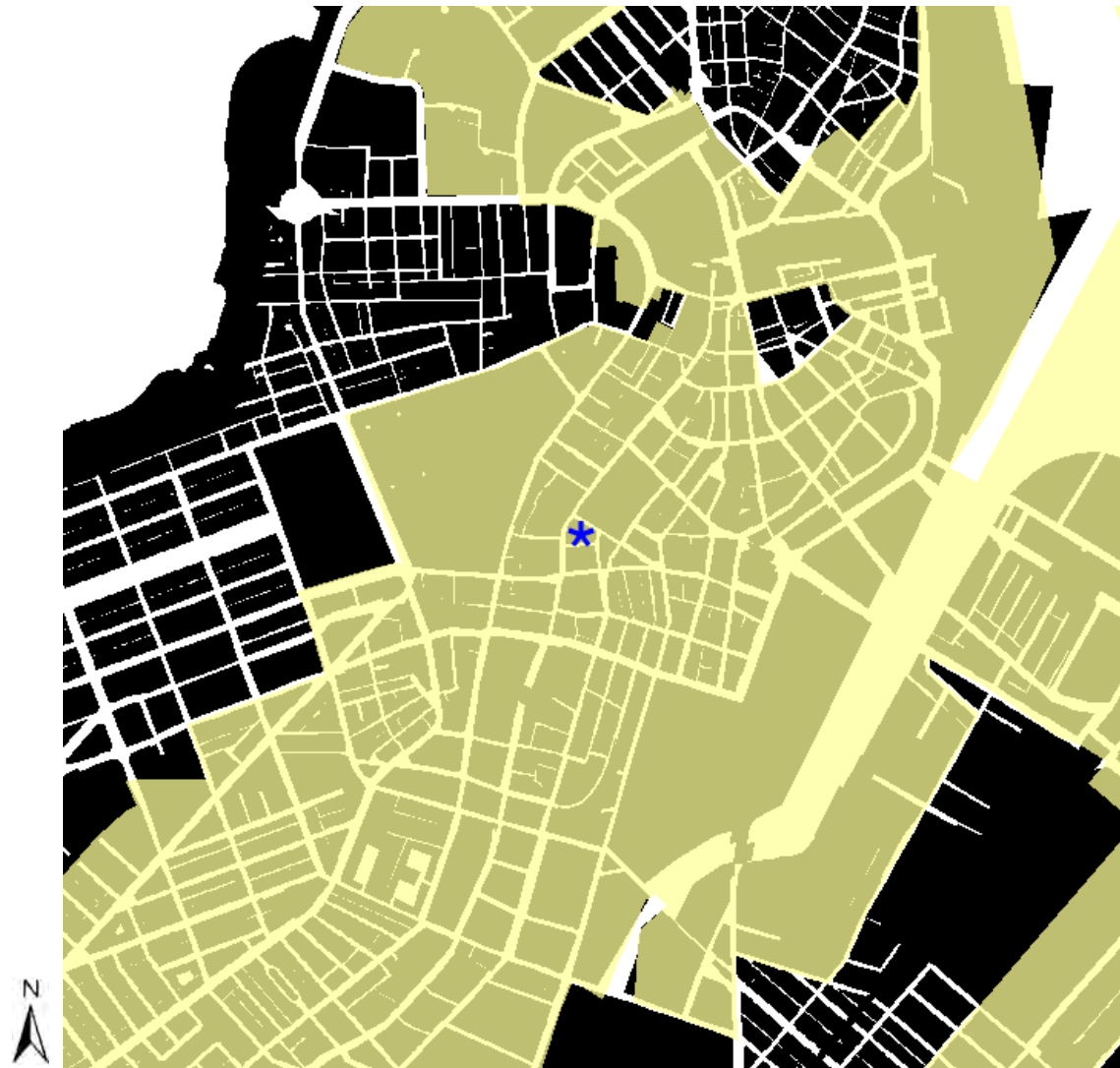
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[* =site] [=areas able to apply for a liquor license. Cafe' has the option to serve alcohol]

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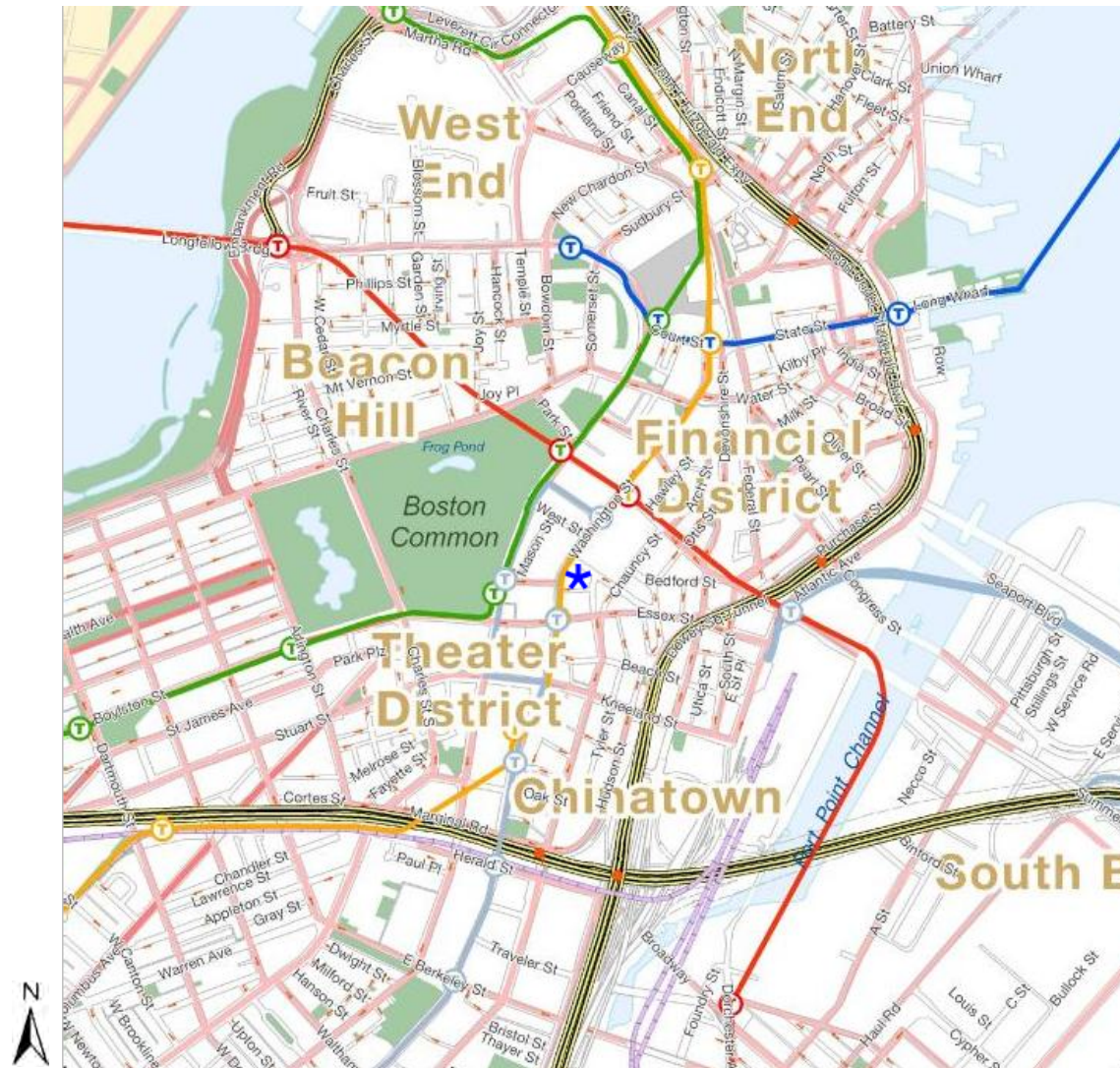
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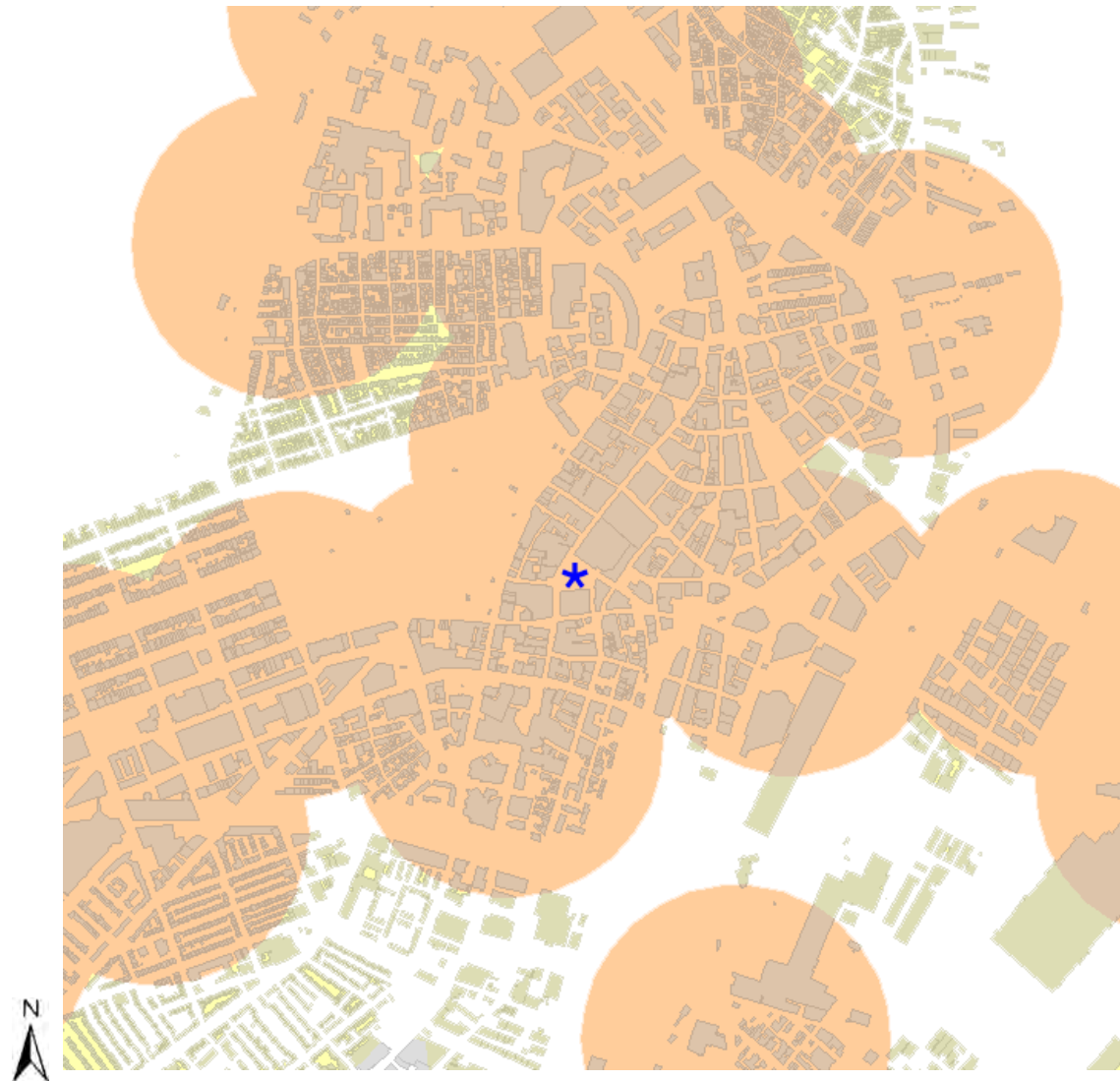
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[* =site] [indication of major roadways and T metro stations in operation as of 2006]

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[* =site] [=areas within ~3min walking access to metro stations]

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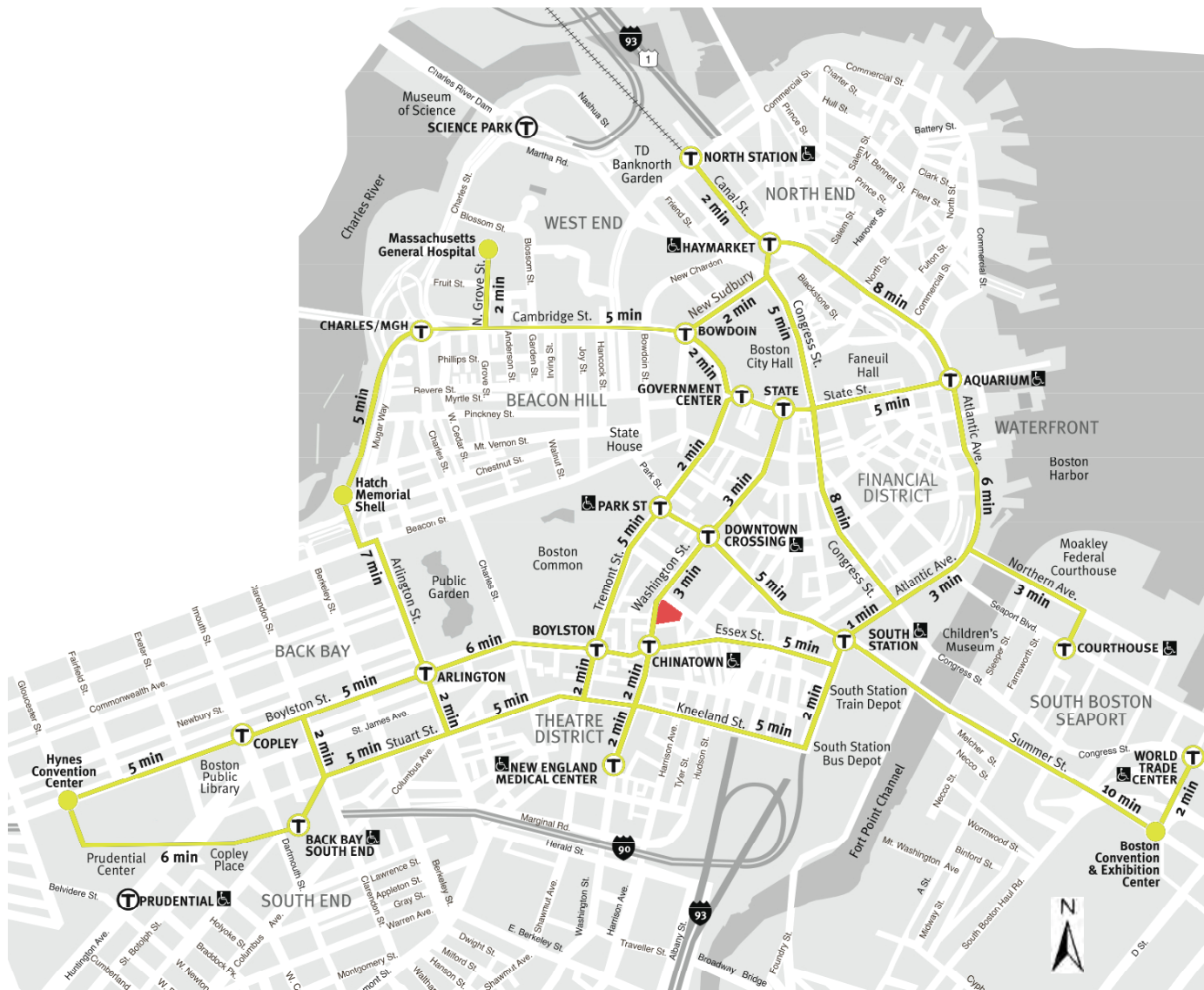
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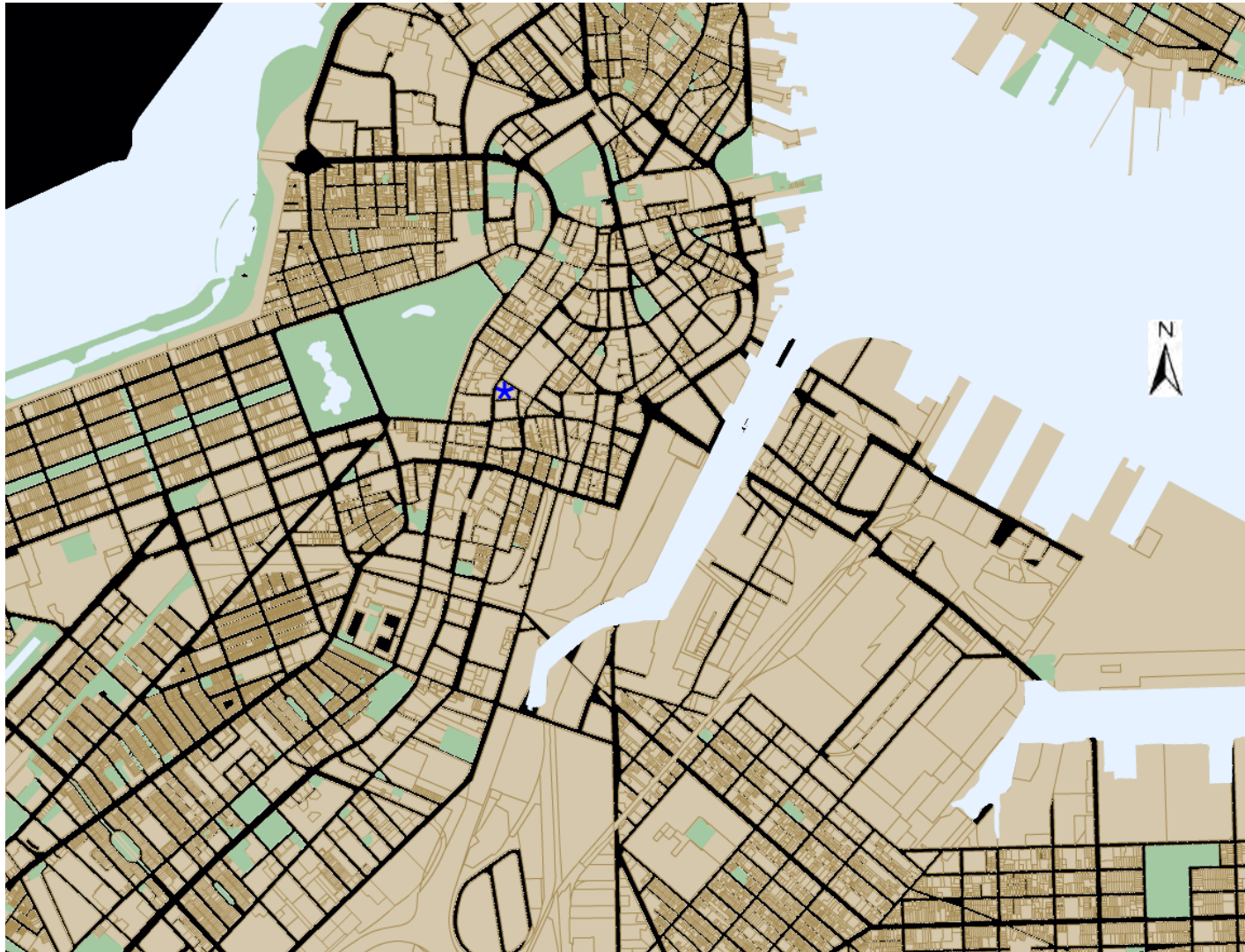
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currently trafficked pedestrian routes as noted by City of Boston as of November 2007



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[* =site] [■ =land parcels, 2006]

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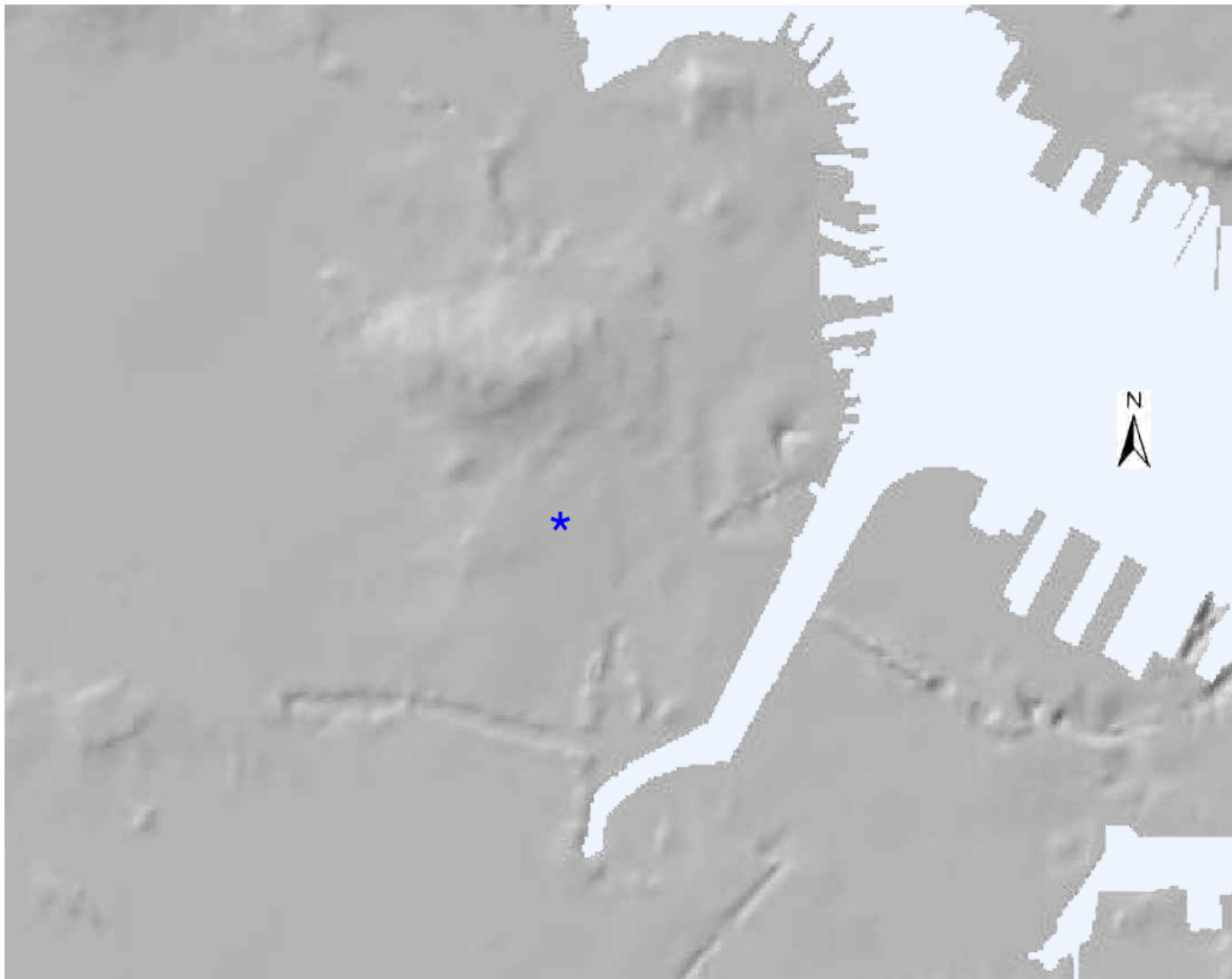
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[* =site] [topographic composition of the surrounding Boston area]

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[* =site] [* =South Station] [■ =train routes]

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[* =site] [■ & lines=major roads with access to Boston area]

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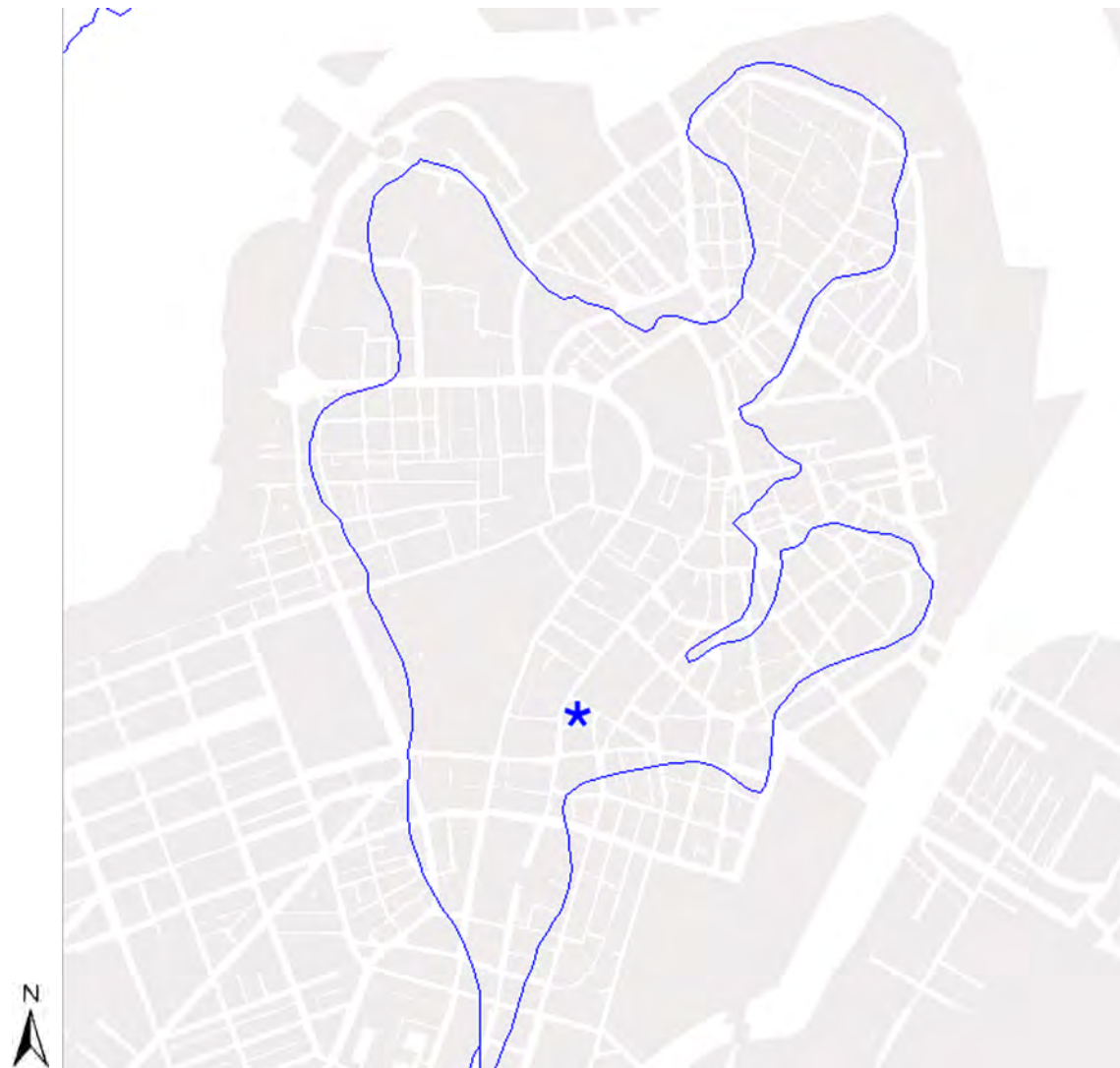
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[* =site] [line=shoreline in 1630]

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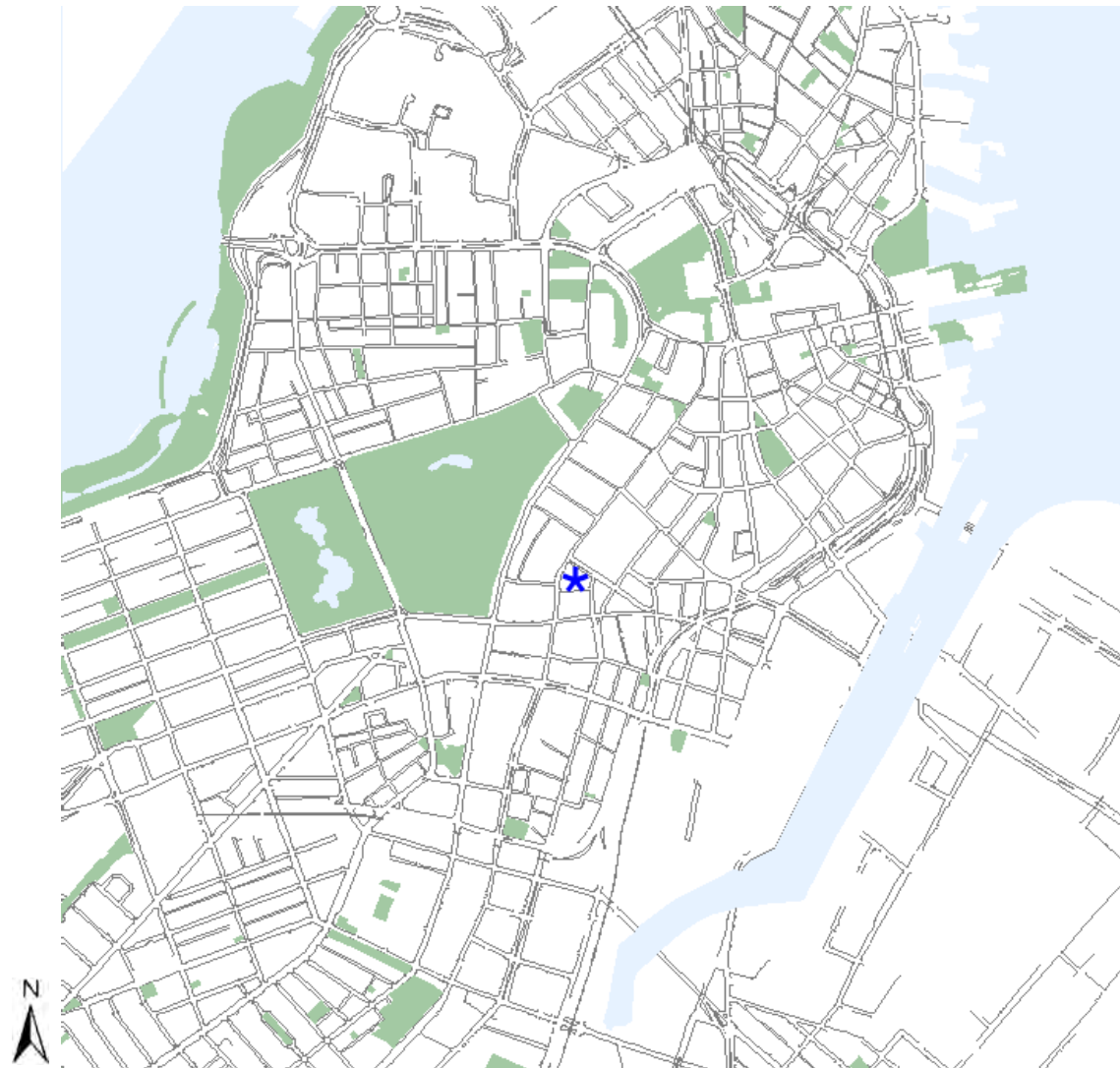
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[* =site] [water and green space within Boston]

- 2** SHAKE THE TREE GALLERY
- 3** GALLERY NAGA
- 4** NIELSEN GALLERY
- 5** CHASE GALLERY
- 7** BARBARA KRAKOW GALLERY
- 8** THE ARTFUL HAND GALLERY
- 9** VOSE GALLERYS OF BOSTON
-  VMoAH



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[=representation of Boston Urban Renewal planned areas in 2003]

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[■]=site] [■]=current land parcels] [■]=building layout as of 1883]

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[green arrows=vehicular circulation]

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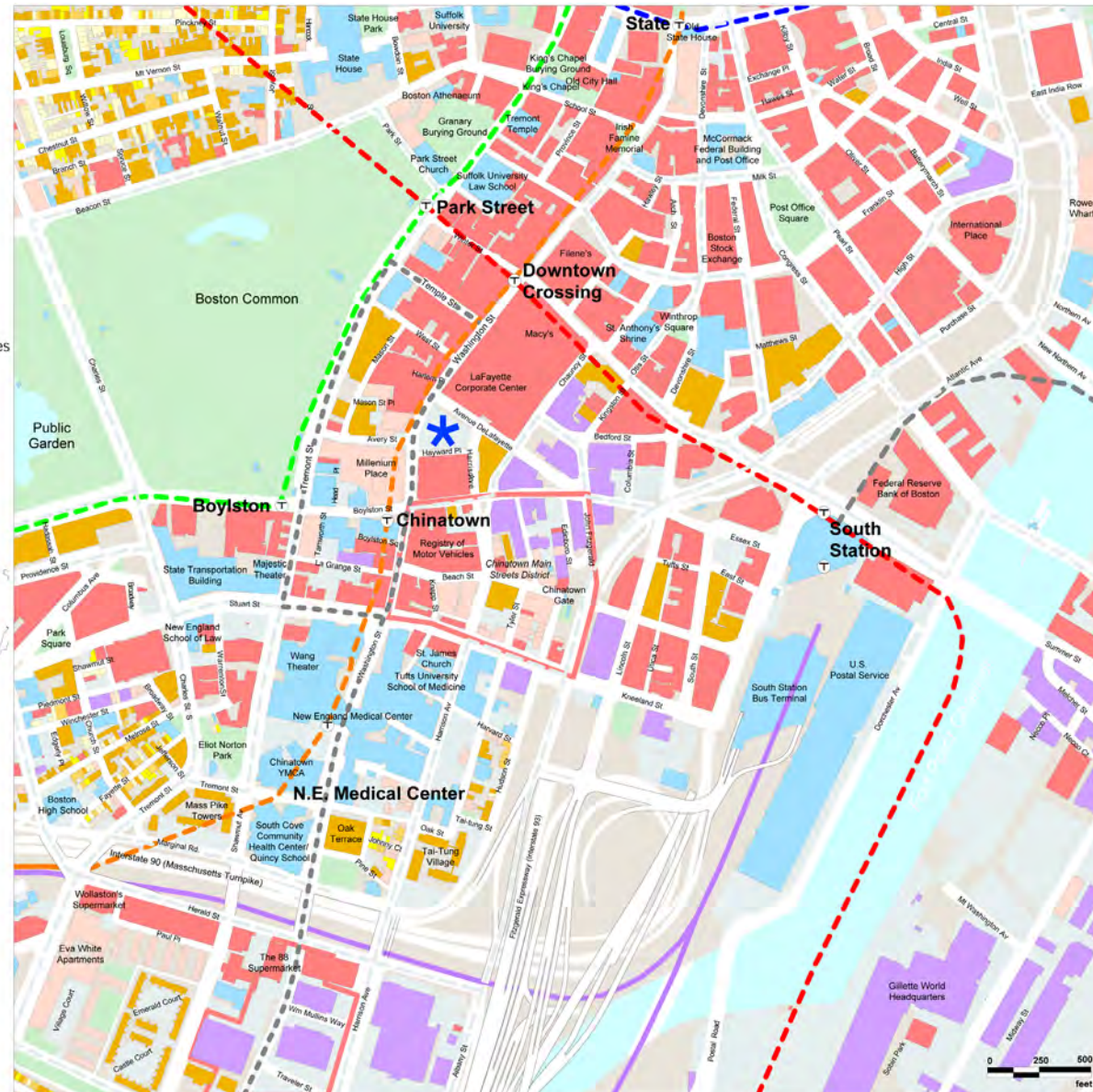
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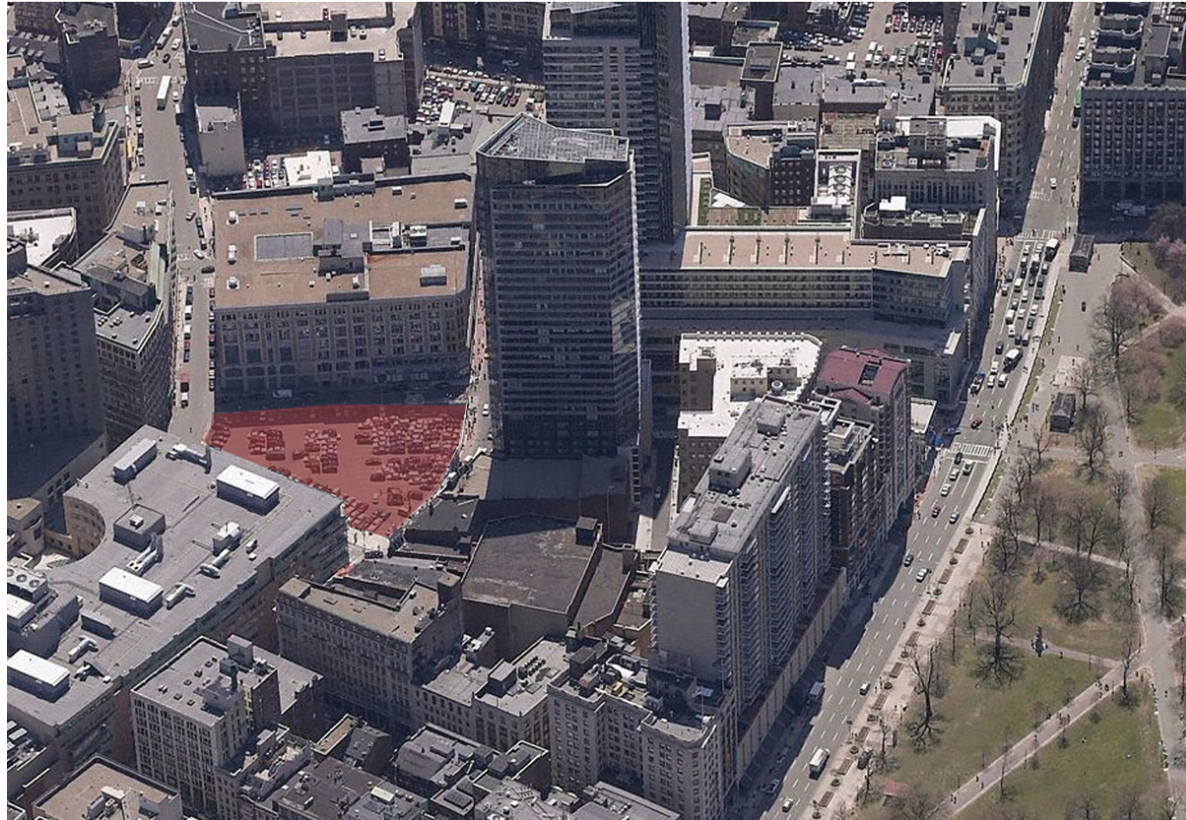
[■ =site] digital aerial view depicting adjacent building massing and open spaces

Legend

- 1 Family Residential
- 2 Family Residential
- 3 Family Residential
- Apartments/Condos
- Mixed Use (Res./Comm.)
- Commercial
- Institutional
- Industrial
- Open Space
- Surface Parking
- Main Streets District
- MBTA Stations
- MBTA Surface Subway Lines
- MBTA Underground Subway Lines
- Commuter Rail
- Below Ground Commuter Rail
- Water Transit Facilities
- Water Transit Routes
- Bus Routes



[* =site] Midtown map depicting building use in the zone



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aerial view of site from the North

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areas of public interaction on perimeter of site

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buildings surrounding immediate perimeter of site



cars currently exist passively on the site

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automobiles become an engaging presence

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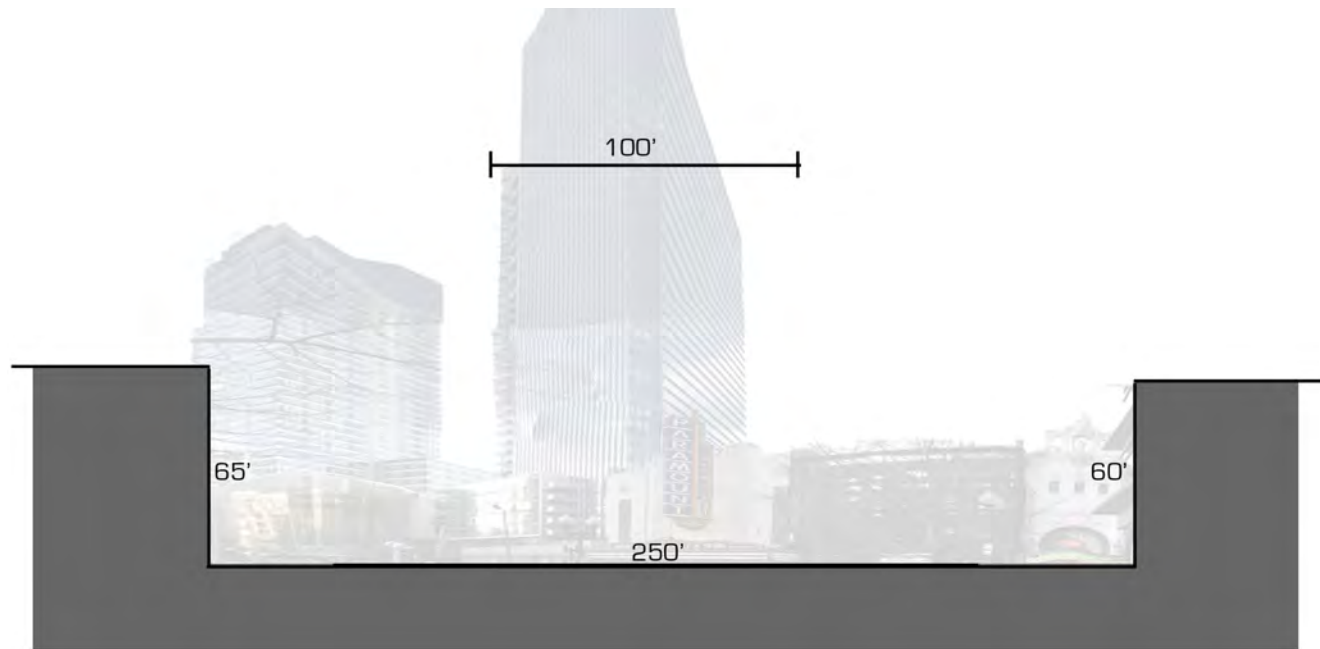
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corner conditions



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preliminary site section [north to south]

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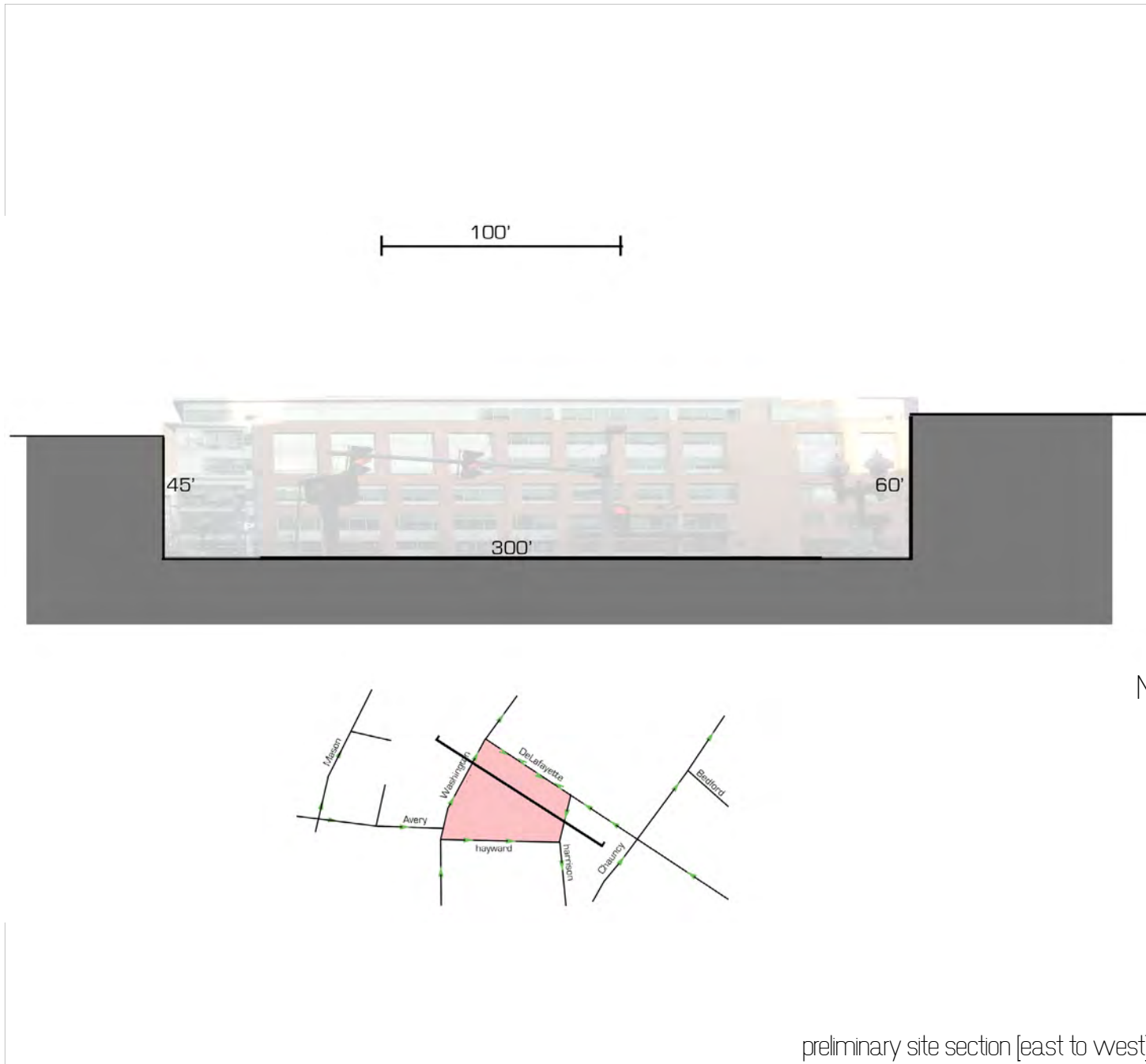
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preliminary site section [east to west]

[regulatory environment]

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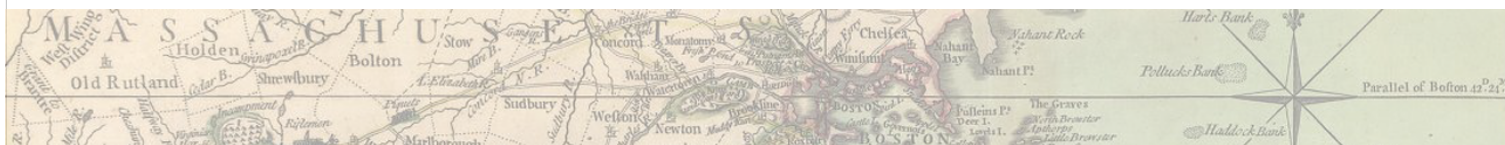


TABLE D
Sky Plane Setbacks
Minimum Average Depth of Setback from Street Wall*

Location	Above Street Wall Height	Above 155' (Total Setback from Street Wall)	Above 235' (Total Setback from Street Wall)
Street listed in Table C	10'	15'	15'
PDA-I			
North-South Streets	35'	35'	35'
East-West Streets	15'	15'	35'
PDA-II			
North-South Streets	25'	35'	35'
East-West Streets	15'	15'	35'
PDA-III	15'	15'	25'
PDA-IV	10'	15'	15'
PDA-V	10'	15'	15'

The site is located in the PDAll (Planned Development Area) section of the Midtown Cultural District of Boston, Massachusetts at 575 Washington Street. The Zoning and Building code requirements and restrictions highlighted in this document are in accordance with the International Building Code as well as the Midtown Cultural District Building Code of this particular location in the city of Boston (MCD Boston Code). The lot is a trapezoidal shape, consisting of ~50,000sq.ft.

The following excerpts relate to the pertinent sections of the Midtown Cultural District Building and Zoning Code of Boston (Article 38 in Boston Building Code), which regulates the construction of this facility. The particular code source will be noted as is necessary.

SPATIAL STANDARDS:

Minimum Lot Area, with Public Sewer: 50,000sq.ft.

Minimum Lot Frontage: 100%

Minimum Setbacks: No setback

Front: none

Side: none

Rear: none

Maximum Lot Coverage: 100%

Maximum Height: 400'

FAR: 10-14

Maximum square footage as denoted by MCD

There are Sky Plane Setbacks required that regulate the minimum average depth of setback from street wall illustrated in table D.

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PERFORMANCE STANDARDS:

Since this site is located in a designated Planned Development Area, there are a number of requirements and specifications that the proposed design must meet in order to gain approval. The full list of applicable performance standards is included at the end of the code analysis section.

The following excerpts relate to the pertinent sections of the International Building Code as well as the Midtown Building Code of Boston, which regulate the construction of this facility. The particular code source will be noted as necessary.

USE GROUP CLASSIFICATION:

According to the IBC, motor vehicle showrooms and laboratories for testing/research fall under the category (304.1) of Business Occupancy. The café is classified as Assembly (A-2). Since the program contains gallery exhibition space, administrative offices as well as a museum component, it is classified as Assembly (A-3). The concept design factory that will utilize metals and plastics as well as machines falls under the category (306.2) of Factory Industrial F-1. The below-grade parking structure falls under the category (406.2) of Parking Garages and must adhere to the regulations of that category.

HEIGHT AREA LIMITATIONS:

_Based on a non-combustible building type (1A)

The IBC specifies that allowable building height for A-2, A-3, F1, and B is unlimited as is building area.

According to Article 38 of the building code of the Midtown Cultural District of Boston, Massachusetts, the location of the site in a PDA II zone stipulates a maximum height of 400', and a maximum FAR of 10-14.

FIRE RESISTANCE

(601 and 602)

Structural frame 3 hour rated.

Exterior load bearing walls 3 hour rated.

Bearing interior/exterior walls 3 hour rated.

Non-bearing interior walls and partitions 0 hour rated.

Fire walls and party walls 3 hour rated.

Floor construction including supporting beams and joists 2 hour rated.

Roof construction including supporting beams and joists 15 hour rated.

FIRE SUPPRESSION SYSTEM

Required

FIRE ALARM AND DETECTION SYSTEMS.

(904.1)

A fire alarm system is required for buildings of two stories or more above the level of exit discharge.

According to IBC 907.2.1, group A, F, and B occupancies must have a manual fire alarm system installed since the occupancy load will be 500 persons or more. If the occupancy load is over 1000, group A occupancies require a signal (siren, voice announcement) upon alarm activation in accordance with [F]907.2.1.1. If equipped with an automatic sprinkler system, manual fire alarm boxes are not required, and the alarm notification system will activate upon sprinkler water flow. Emergency power must be provided to this alarm system in the event of necessity in accordance with [F]907.2.1.2.

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*SECTION 38-11. Planned Development Areas: Use and Dimensional Regulations. The land use and dimensional regulations for PDAs are established by this section and in Table A to this article.

1. Use Regulations. Proposed Projects within PDAs are subject to the use regulations set forth in Section 38-18.

2. Dimensional Regulations. Proposed Projects within PDAs shall be in Substantial Accord with the building height and FAR standards set forth in Table A of this article and as follows: (d) within PDA-IV, a maximum building height range of one hundred fifty-five (155) feet to two hundred seventy-five (275) feet, and FARs of 10 to 14; and (e) within PDA-V, a maximum building height of one hundred fifty-five (155) feet to four hundred ninety-five (495) feet, and FARs of 10 to 14.

TABLE A

**Dimensional Regulations
Planned Development Areas
Midtown Cultural District**

	Maximum Height Standards	Maximum FAR Standards
PDA-I	155'-388'	10-14
PDA-II	155'-400'+	10-14
PDA-III	155'-300'	10-14*
PDA-IV	155'-275'	10-14
PDA-V	155'-495'	10-14

+ Provided that in a PDA which exceeds three (3) acres, one building, or a portion thereof, may have a building height in Substantial Accord with four hundred sixty-five (465) feet. See Section 38-112(b).

* In Proposed Projects to exceed a building height of 155', at least fifty percent (50%) of the gross floor area, above the height of one hundred fifty-five feet must consist of uses other than office uses or institutional uses.

***SECTION 38-14. Planned Development Areas: Public Benefit Criteria.**

The Boston Redevelopment Authority may approve a Development Plan as meeting the requirement of Section 80C-4 (Standards for Planned Development Area Review Approval) for compliance with the applicable planning and development criteria of this article if the Development Plan proposes a plan for public benefits, consistent with the Midtown Cultural District Plan, including one or more of the following: (a) the development of a theater or other cultural facility in accordance with the provisions of paragraph 1, below, of this section; (b) the substantial rehabilitation of a Landmark, Historic Building, or an existing Theater, in accordance with the provisions of paragraph 2 of this section; (c) the provision of Affordable housing, in accordance with the provisions of paragraph 3 of this section; or (d) within PDA-IV, the provision of open space, in accordance with the provisions of paragraph 7 of this section. The total amount of gross floor area, available for provision of mitigating public benefits under this section shall not exceed the maximum floor area, permissible under the provisions of Section 38-11 and Table A of this article.

1. Development Plan Approval for Development of New Theater or Other Cultural Facility.

The Boston Redevelopment Authority may approve a Development Plan proposing to develop or to cause the development of a new Theater or other cultural facility if: (a) either (i) the new Theater or other cultural facility is of a useful condition, size, and type which is appropriate, under the circumstances pertaining at the time of the application for Development Plan approval, to contribute to the balance of cultural facilities responsive to the needs of the Midtown Cultural District, as identified in the Midtown Cultural District Plan; or (ii) the Development Plan details provision of sufficient assistance for successful development of a Theater or cultural facility, including ancillary or accessory facilities such as administrative offices, rehearsal/studio space, dressing room/green room space, storage space, or other assistance, as identified in the Midtown Cultural District Plan; and (b) the Applicant provides evidence of a long-term commitment by the Applicant itself or a third party either (i) to use the Theater or cultural facility in accordance with the Midtown Cultural District Plan; or (ii) to lease or otherwise transfer such Theater or cultural facility for such use (which may include a lease or transfer to the City of Boston or its designee).

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4. Use of Theaters and Cultural Facilities

The use of any Theater or cultural facility which is developed or substantially rehabilitated for qualification as a public benefit for Development Plan approval under this article shall be limited to the uses specified in the Development Plan. Such uses shall be consistent with the uses specified in the Midtown Cultural District Plan. To guarantee the continuation of such uses, the Applicant may but shall not be required to, lease or otherwise transfer any right, title, and interest in the Theater or cultural facility to the City of Boston or its designee.

*SECTION 38-16: Planned Development Areas: General Design and Environmental Impact Standards

In addition to the Large Project Review requirements set forth in Article 80 of this code, Proposed Projects submitted for approval as part of an application for Development Plan approval under Planned Development Area Review shall be in substantial accord with the General Design and Environmental Impact Standards described herein. The purpose of these additional standards is to maintain and improve the quality of life in the Midtown area, with particular regard to Chinatown, the Midtown Cultural District, Bay Village, the Boston Common and the Public Garden, and Landmarks and Historic Buildings.

1. Shadow Criteria. Each Proposed Project shall be arranged and designed in a way to assure that it does not cast shadows for more than two hours from 800 a.m. through 230 p.m., on any day from March 21 through October 21, in any calendar year, on any single Shadow Impact Area, depicted on Map 1A of this code, that either (a) is not cast in shadow during such period on such days by structures existing as of the effective date of this article, or (b) would not be cast in shadow during such period on such days by structures built to the as-of-right limits allowed by this article, whichever structures cast the greater shadow, provided that an area of the Boston Common not to exceed one acre may be shaded beyond the two-hour period, such area to be calculated as the sum of the areas shaded at the two-hour limit by the Proposed Project and all structures constructed after the effective date of this article exceeding the building sizes described in clauses (a) and (b), above. Any Proposed Project casting any net new shadow on the Boston Common by reason of its exceeding the building sizes described in clauses (a) and (b), above, shall be required to mitigate the impact by contributing to turf, tree, statuary, park furniture, and path maintenance and capital improvements that are designed to promote the passive or active enjoyment (con't)

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of the Boston Common. The contribution, as determined in consultation with the City of Boston acting through its Parks and Recreation Department and appropriate community and neighborhood groups, and in conformity with written regulations to be adopted by the Boston Redevelopment Authority after public notice and hearing, shall be based on the following factors:

(i) the amount and duration of the shadow as it diminishes the sunlit area of the Boston Common; (ii) the costs of mitigating the shadow impact on sunlit areas; and (iii) such other factors as are related to preserving the qualities of the Boston Common affected by the Proposed Project, including but not limited to the decreased enjoyment of the Boston Common as a result of additional shadow.

2. Wind. Buildings shall be designed to avoid excessive and uncomfortable downdrafts on pedestrians. Each Proposed Project shall be shaped, or other wind-baffling measures shall be adopted, so that the Proposed Project will not cause ground-level ambient wind speeds to exceed the standards in Table B of this section, as follows:

TABLE B
Pedestrian Safety/Comfort Wind Standards

Activity Area	Effective Gust Velocity	Permitted Occurrence Frequency
Limit for All Pedestrian Areas	13.8 m/sec (31 mph)	1.0%
Major Walkways- Especially Principal Egress Paths for High-Rise Buildings	13.8 m/sec (31 mph)	1.0%
Other Pedestrian Walkways- Including Street and Arcade Shopping Areas	11.2 m/sec (25 mph)	5%
Open Plazas and Park Areas Walking, Strolling Activities	6.3 m/sec (14.1 mph)	15%
Open Plaza and Park Areas, Open-Air Restaurants	4.0 m/sec (9 mph)	20%

3. Transportation Access. The Transportation Access Plan, if required for Large Project Review, shall demonstrate that the location of the Proposed Project with respect to vehicular access and circulation, and proximity to other transportation systems, is suitable for increased floor area. By its design and management, the Proposed Project shall emphasize use of mass transit and feasible measures to be undertaken to limit the impact of the Proposed Project on traffic congestion.

4. Skyline Plan. Each Proposed Project shall be generally consistent in height and form with the modified high spine/cluster skyline plan described in the text of the Midtown Cultural District Plan. The minimum distance between separate building elements of more than one hundred fifty-five (155) feet in height is one hundred twenty-five (125) feet; provided that this provision is (cont)

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not applicable where two or more public ways lie between such building elements; or no public way lies between such building elements. In its review of the application for Development Plan approval, the Boston Redevelopment Authority shall take into consideration existing structures, and structures for which Zoning Relief has been granted by the Board of Appeal, or structures for which Development Plan approval has been granted by the Boston Redevelopment Authority.

5 Landmarks and Historic Buildings. Each Proposed Project shall be generally designed and arranged in such a way as to limit the reduction of light and air surrounding, and physical isolation of or intrusion on, Landmarks and Historic Buildings and to minimize the shadow impact on their facades.

6 Enhancement of Pedestrian Environment. Each Proposed Project shall enhance the pedestrian environment, by means such as: (a) pedestrian pathways connecting to mass transit stations; (b) spaces accommodating pedestrian activities and public art; (c) materials, landscaping, public art, lighting, and furniture that enhance the pedestrian environment; (d) shopping or entertainment opportunities, including interior retail uses; (e) pedestrian systems that encourage more trips on foot; and (f) other attributes that improve the pedestrian environment and pedestrian access to mass transit stations; (g) appropriate management and maintenance of public space within the Proposed Project; and (h) preservation or recreation of the historic street pattern of the district through exterior or interior pedestrian passageways and through-block corridors.

7 Boston Civic Design Commission Review. Each Proposed Project shall be subject to review by the Boston Civic Design Commission, in accordance with the provisions of Article 28.

1 Ground Level and Cultural Uses. Within any Proposed Project, uses with street frontage located on the ground level or entered by stairs from a sidewalk entry, except for lobby entrances, are limited to Ground Level Uses and Cultural Uses, as listed in Appendix B to this article. All other uses with street frontage which are allowed by this section are conditional uses when located on the ground level or entered by stairs from a sidewalk entry.

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5. Allowed Uses. No land or structure in the Midtown Cultural District shall be erected, used, or arranged or designed to be used, in whole or in part, for any use except under the provisions of Section 38-186 and Article 6, Conditional Uses, unless such use is specified in this Section 38-185. Any use so specified shall be allowed as a matter of right, subject only to the requirements set forth in this Section 38-18 and Section 38-21.

(b) Restaurant and Entertainment Uses. Limited to the service or sale of food or drink for on-premises consumption; concert hall; Theater; commercial or nonprofit (including motion picture or video Theater; but not drive-in Theater); art galleries; nonprofit or for profit.

(c) Office Uses. Limited to offices of cultural groups; offices of community service organizations; business or professional offices; real estate; insurance; or other agency or government office; office building; post office; bank (other than drive-in bank) or similar establishment; dance; Theater; or music rehearsal studio; artist studio or work space.

(j) Service Uses. Limited to video or film production studio; barber shop; beauty shop; shoe repair shop; self-service laundry; pick-up and delivery station of laundry or dry-cleaner; tailor shop; hand laundry; dry-cleaning shop; framer's studio; caterer's establishment; photographer's studio; printing plant; taxidermist's shop; upholster's shop; carpenter's shop; electrician's shop; plumber's shop; radio and television repair shop; funeral home; undertaker's establishment; mortuary; research laboratory; radio or television studio; or similar use provided that in laundries and cleaning establishments, only nonflammable solvents are used for cleaning; animal hospital or clinic.

(p) Accessory Uses subject to the limitations and restrictions of Article 10, limited to: (i) a garage or parking space for occupants, employees, students, and visitors, provided that such use is accessory to a residential use; a hotel or motel; a group care residence; or a dormitory, fraternity, or sorority house; (ii) a swimming pool or tennis court; (iii) the storage of flammable liquids and gases incidental to a lawful use; (iv) the manufacture, assembly, or packaging of products sold on the lot; (v) the maintenance and operation of not more than four amusement game machines accessory to eating and drinking establishments; (vi) any use ancillary to, and ordinarily incident to, a lawful main use, provided that any such use shall be subject to the same restrictions, conditions, limitations, provisos, and safeguards as the use to which it is accessory; (vii) the maintenance and operation of an indoor payphone, provided that such use shall be forbidden unless located within a building at least ten (10) feet from an entrance (cont).

1 Street Wall Continuity The Street Wall of any Proposed Project shall be built

(a) to be coextensive with at least eighty percent (80%) of the "Existing Building Alignment" of the block on which the Proposed Project fronts, established pursuant to Section 18-2 of this code; or

(b) to a depth from the street line equal to that of at least eighty percent (80%) of the Existing Building Alignment of either block adjacent to the block on which the Proposed Project is located, if there is no Existing Building Alignment of such block.

Recess Above Display Window Area, Street Wall*

Maximum Depth Maximum Aggregate Surface Area

fifteen (15) feet twenty percent (20%)

* Recesses do not include windows, which must be indented

2 Street Wall Height The "Street Wall Height" of Proposed Projects within the Midtown Cultural District shall not exceed ninety (90) feet. The endwall of a street which is a cul-de-sac does not count as a Street Wall for the purposes of this Section 38-19.

3 Display Window Area Regulations The provisions of this paragraph apply only to Proposed Projects of fifty thousand (50,000) or more square feet. The term "Display Window Area," means that volumetric area of any such Proposed Project that is (i) within a depth of four (4) feet from the Street Wall of the Proposed Project; and (ii) between a height of two (2) feet above the ground floor and the height of the underside of the floor structure of the second floor of the Proposed Project, or fourteen (14) feet, whichever is less. The Display Window Area excludes any area of Street Wall serving as ingress or egress to the interior of the Proposed Project, including off-street loading berths or accessory off-street parking, or lobby or storefront entrances, provided that no single lobby area shall occupy more than forty (40) feet of street frontage.

(a) Display Window Area, Street Wall Transparency The Display Window Area, Street Wall shall be appropriately glazed and transparent for attractiveness to pedestrians, as certified to by the Boston Redevelopment Authority in accordance with the Urban Design Component of Large Project Review. Article 11 of this code applies to

any painting or signs on the Display Window Area Street Wall, and to signs in the Display Window Area.

(b) Display Window Area Street Wall Continuity. The Display Window Area Street Wall shall be sufficiently coextensive with the Street Wall line, established pursuant to paragraph 1 of this section, to spatially reinforce such Street Wall line.

Display Window Area Street Wall Recesses*

Maximum Depth Maximum Aggregate Surface Area

ten (10) feet thirty percent (30%)

two (2) feet fifty percent (50%)

* The restrictions on recesses are not applicable to pedestrian arcades.

(c) Display Window Area Usage. To a depth of at least two (2) feet behind the Display Window Area Street Wall there shall be (i) an area for the display of goods and services available for purchase on the premises; or (ii) an area for exhibits and announcements. The provisions of this subparagraph are not applicable to foyer space for cultural activities, restaurants, or other active storefront uses.

4. Setback Requirements

(a) Sky Plane Setbacks. Other than decorative cornices and other surface ornamentation, every portion of a Proposed Project (including, but not limited to, mechanical equipment) above the Street Wall Height of such Proposed Project shall be set back by not less than the amount of the "Sky Plane Setbacks" established in Table D for the Street Wall Heights and building heights of one hundred fifty-five (155) feet and two hundred thirty-five (235) feet. Portions of a Proposed Project more than one hundred fifty-five (155) feet high should be treated in a manner to create a visually distinctive roof or other termination of the facade of the Proposed Project.

TABLE D

Sky Plane Setbacks
Minimum Average Depth of Setback from Street Wall*

Location	Above Street Wall Height	Above 155' (Total Setback from Street Wall)	Above 235' (Total Setback from Street Wall)
Street listed in Table C	10'	15'	15'
PDA-I			
North-South Streets	35'	35'	35'
East-West Streets	15'	15'	35'
PDA-II			
North-South Streets	25'	35'	35'
East-West Streets	15'	15'	35'
PDA-III	15'	15'	25'
PDA-IV	10'	15'	15'
PDA-V	10'	15'	15'

supplemental code information applicable to PDA IV as indicated by code section 3811 of the Midtown Cultural Area of Boston

The Sky Plane Setback provisions established in this paragraph shall not be applicable to the extent that, as a consequence of such provisions, the maximum possible gross floor area for any floor of a Proposed Project would be less than nine thousand (9000) square feet.

(b) Maximum Floor Plates: Notwithstanding any provision in this Section 38-19 to the contrary, above a height of one hundred twenty-five (125) feet the average gross floor area per floor of separate elements of a Proposed Project shall not exceed twenty-two thousand five hundred (22500) square feet, and no single floor shall exceed a maximum floor area of twenty-five thousand (25000) square feet.

(c) The principal facade of a building may violate the setback requirements up to the one hundred fifty-five (155) foot level, up to a maximum of 35 feet horizontal dimension or one bay or thirty percent (30%) of total horizontal length of the principal facade, whichever is greater.

(d) Corner Conditions for Corner Lot Buildings: The corner condition may be either a continuous curve that follows the curve of the street or a notched setback at the intersection of the two facade planes. The treatment may be a curve, a projection (bay), or a recessed element. The maximum horizontal dimension of the notch cannot exceed one bay or 35 feet from the intersection of the two planes, whichever is less. The form and character of the treatment will be determined through the Urban Design Component of Large Project Review.

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[precedent studies]



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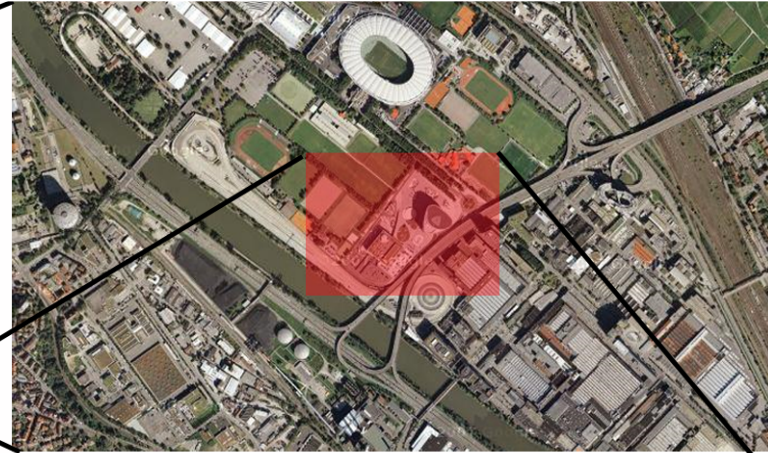
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The museum is sited on the Neckar River in Stuttgart, Germany.

The Mercedes Museum is located on a more open area than the urban Boston site of the VMoAH.

precedent [mercedes-benz museum]



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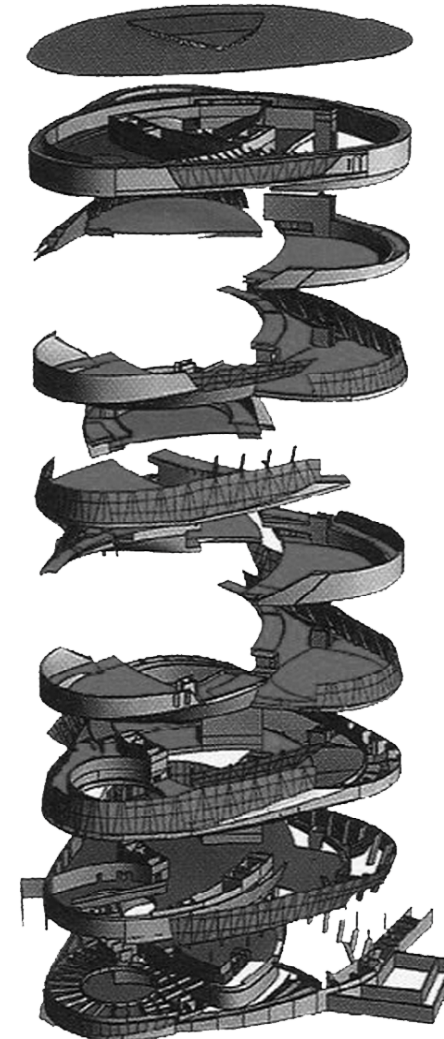
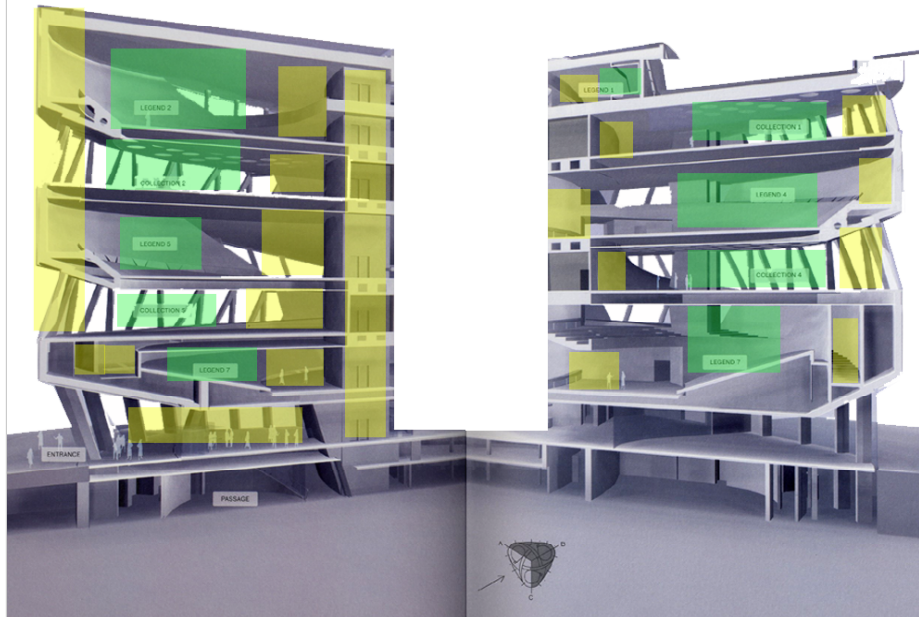
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CIRCULATION OCCURS ON A **VERTICAL SPIRAL**. AS PATRONS MOVE UPWARD/DOWNWARD SPIRALLY THROUGH THE MUSEUM, THEY ARE ABLE TO
SEE DISPLAYED EXHIBITS FROM VARIOUS ANGLES.

EXHIBIT:



CIRCULATION:



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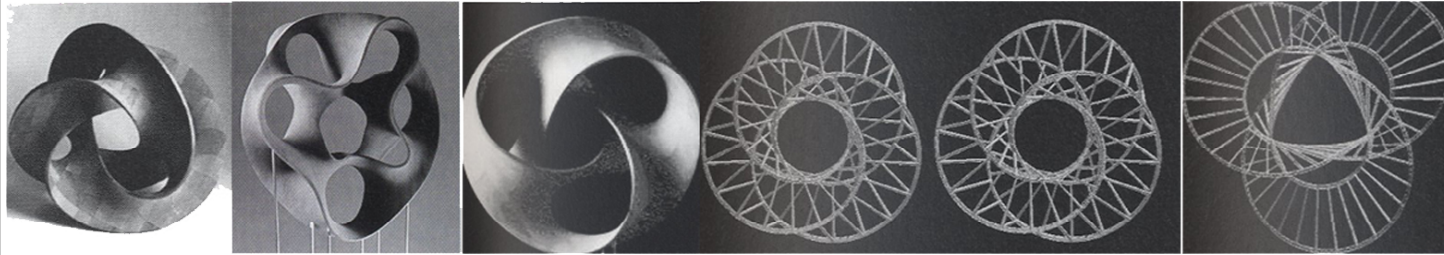
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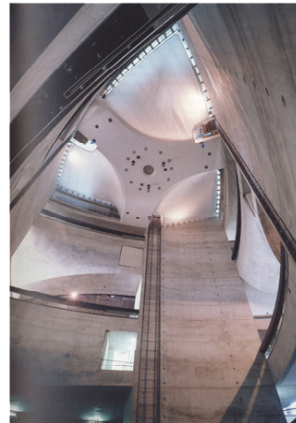
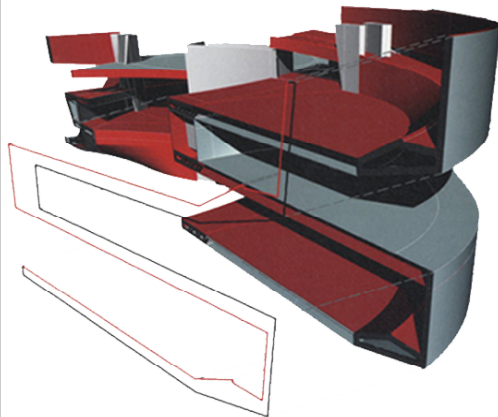
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THE FORM OF THE BUILDING
WAS DERIVED FROM THE
3-PRONGED MERCEDES
EMBLEM.



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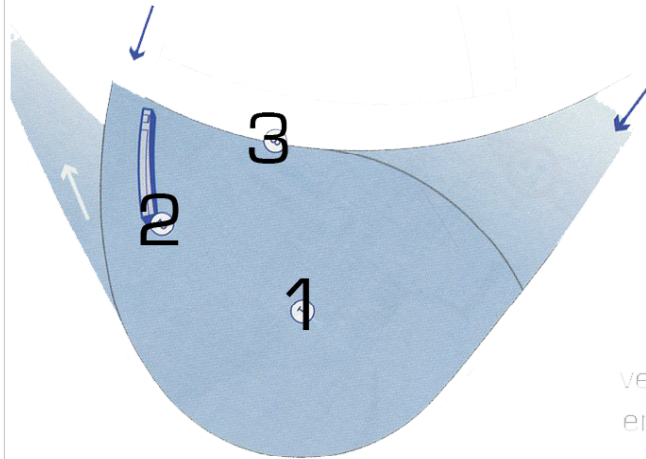
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precedent [mercedes-benz museum]



- 1_vehicle exhibit
- 2_item showcase
- 3_gallery key

_galleries display many types of vehicle as well as particular benchmarks of the brand, such as safety features.

vehicles
engines
parts
vehic
engi
ne



_each gallery is **organized in a unique way**. the way in which the gallery is oriented in plan reflects the **purpose and/or identities** of the vehicles and machines that are on display in the gallery.



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CosmoCaixa [science museum]

2004

Terradas Architects

Barcelona

"Part of the architecture of a museum is museology, part of the museology of a museum is architecture." -Jorge Wagensberg
Embedded within CosmoCaixa is a spiral ramp structure called the "Tree of Life," in direct relation to the Amazon exhibits located in the same wing. This spiral ramp puts the visitors on display as they climb upwards. The open gallery cylinders in the VMoAH would achieve this as visitors in all departments of the center would have a view of the ascending vehicles, putting them on "indirect display."

CosmoCaixa was designed with transparency in mind which has resulted in a design that allows visitors to be in constant connection with the programmatic elements around them. A clear view of what is ahead has been created for visitors of the museum through continuous lines of vision throughout the building. The layout and construction of the VMoAH allows visitors to maintain sight of many of the museum's galleries as they proceed through the exhibition spaces.

VMoAH

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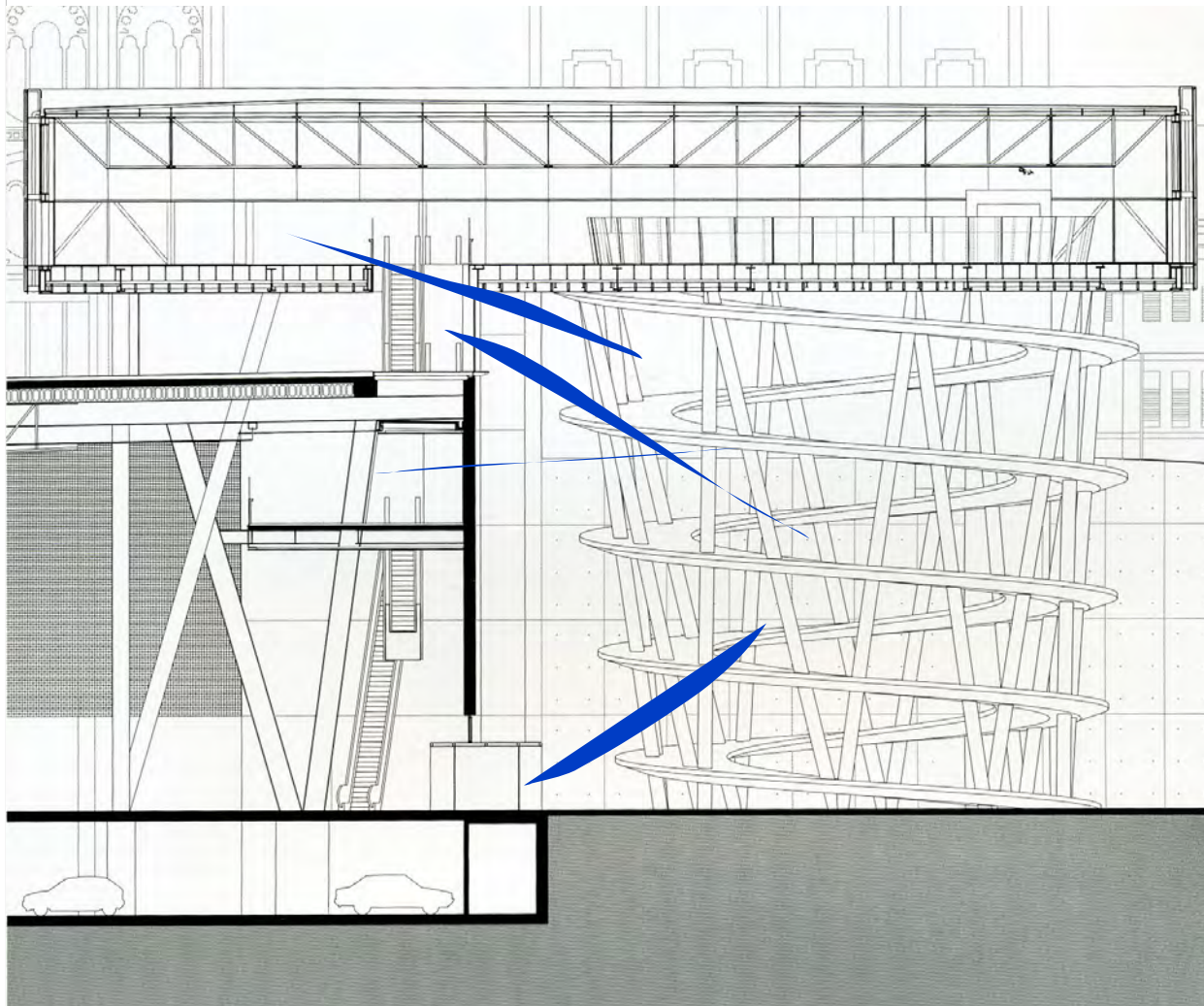
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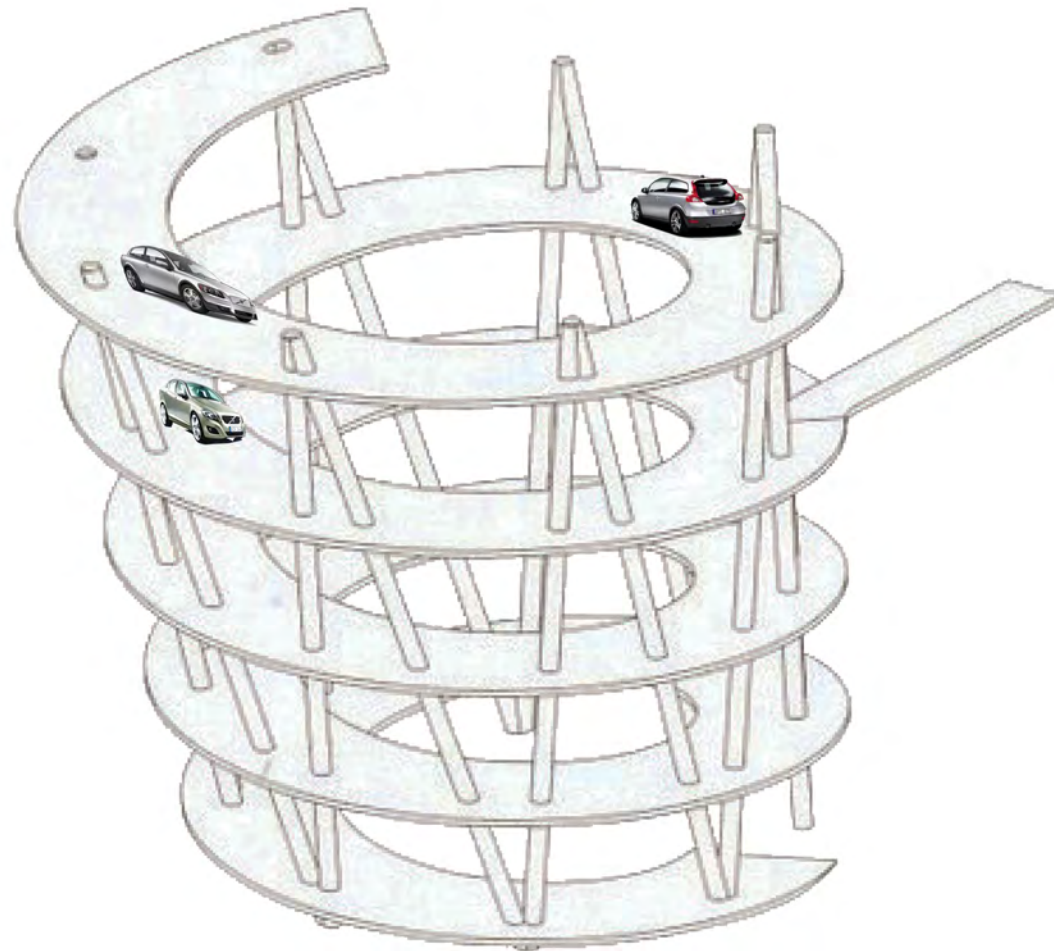
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MoMA

2004

Yoshio Taniguchi
New York, NY



MoMA is unlike the VMoAH in the sense that the art on display will cycle much more often and refresh at a much more rapid pace, but it is alike the VMoAH in the way in which it will evolve not only what is on display, but the minds of the visitors who view the artwork on display in the galleries.

MoMA has a much more broad collection than does the VMoAH, but the diversity of the collection in MoMA can be mimicked by the VMoAH through the inclusion of a multitude of varying gallery themes, from the macro scale of the entire automobile itself, to the history, to the mechanical equipment involved. Also, the way in which the vehicles and machinery is presented can have a very strong effect on the overall preception of the exhibit.

The open central core of the structure and the opportunity for visual contact across many levels both horizontal and vertical is a concept that is strongly rooted in the VMoAH.

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precedent [MoMA, NY]



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precedent [MoMA, NY]

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[concept/final project design]

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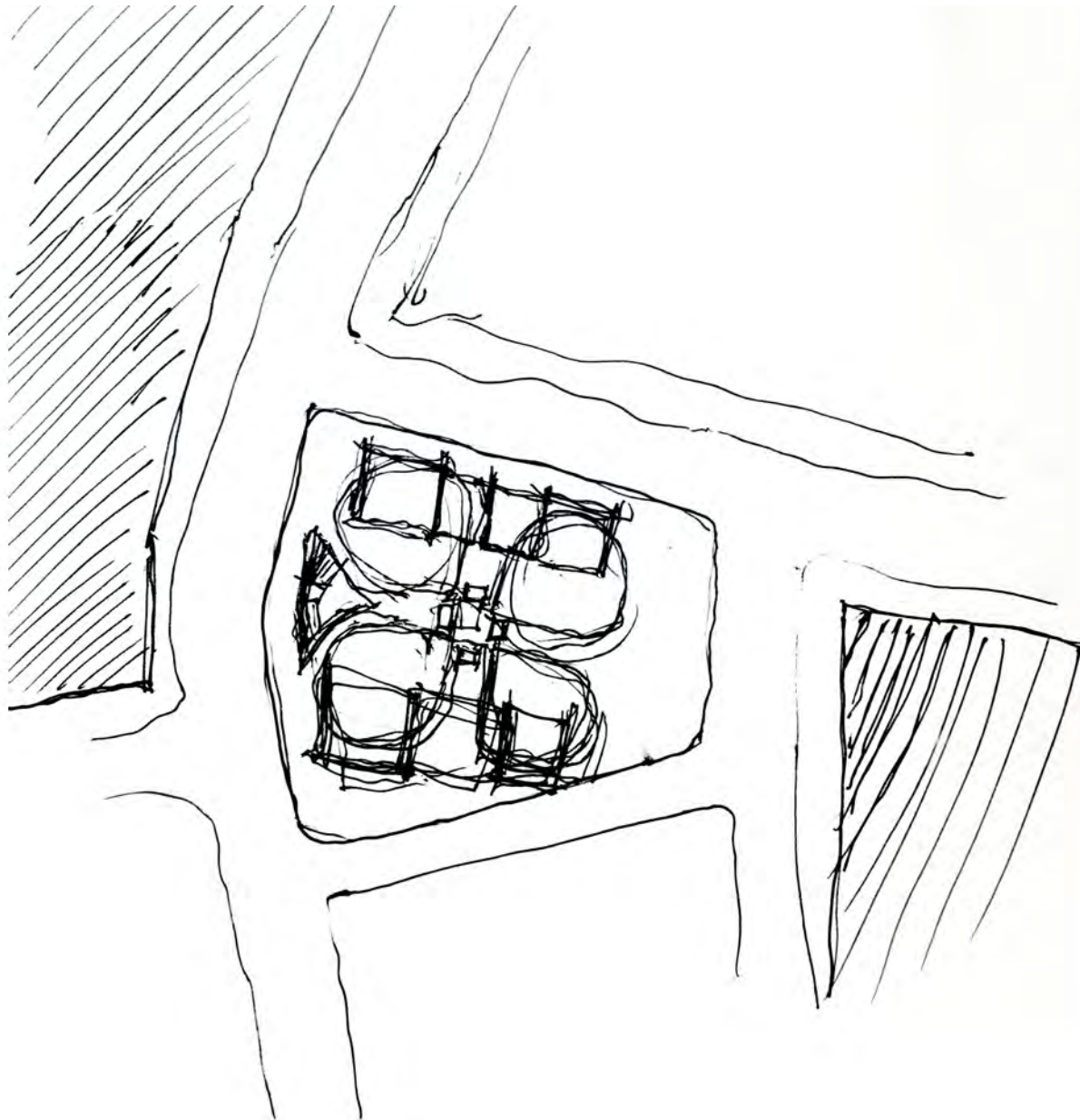
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concept/progress : draw pedestrians into the site

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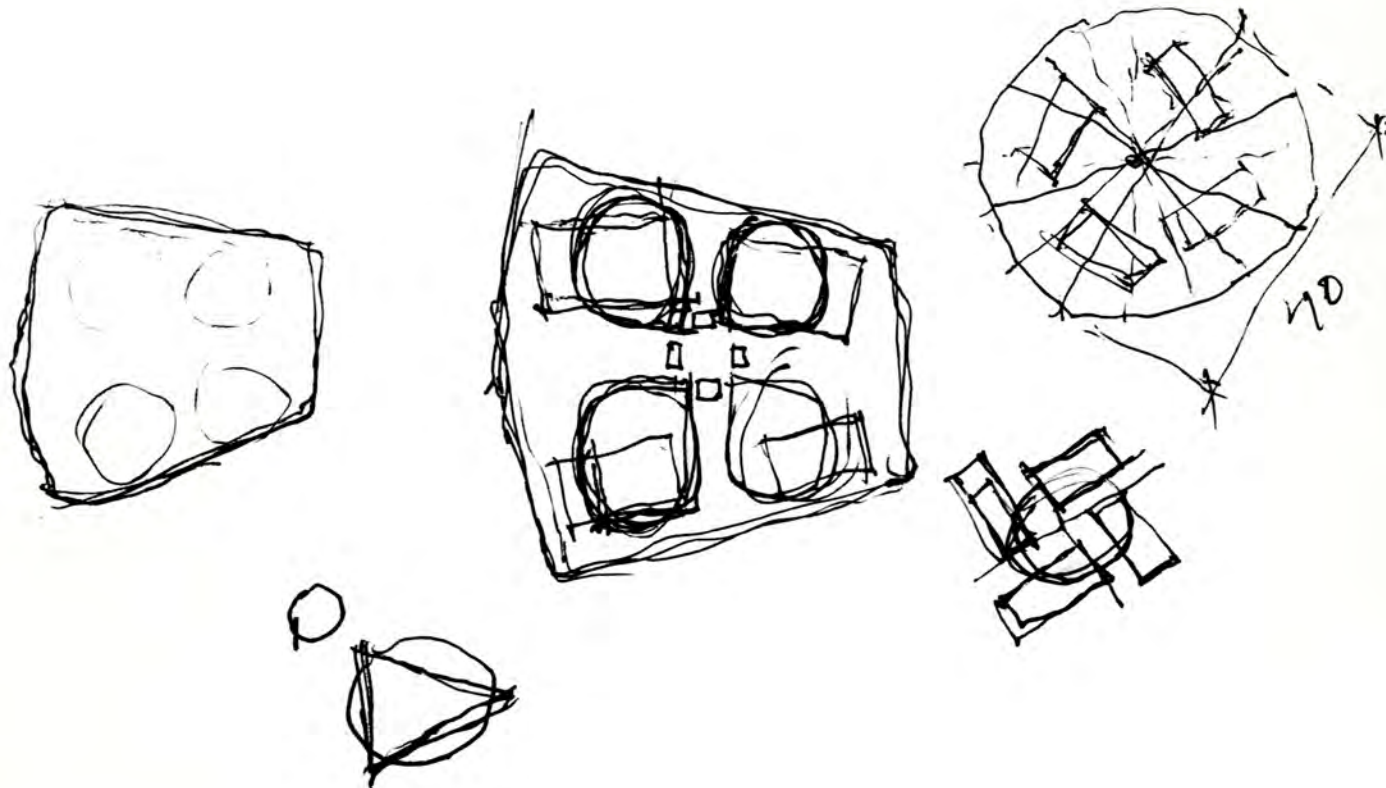
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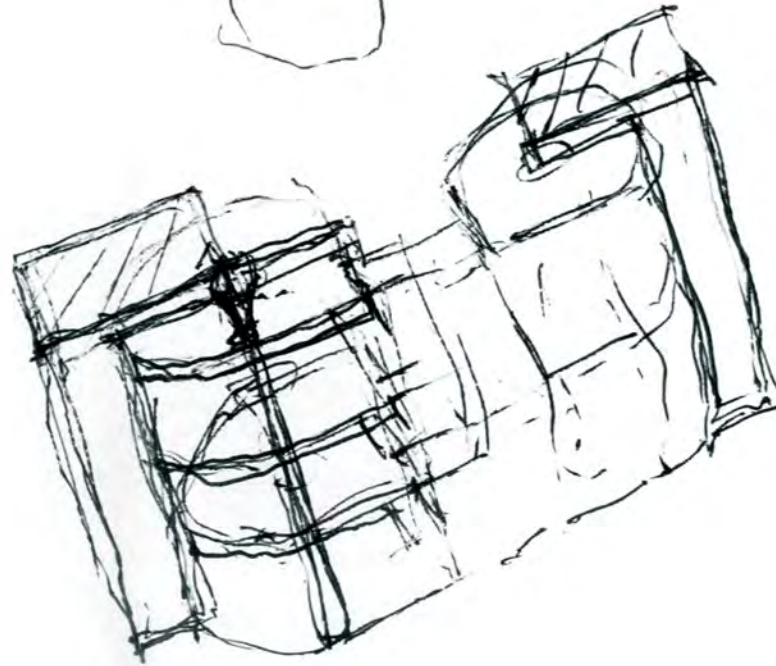
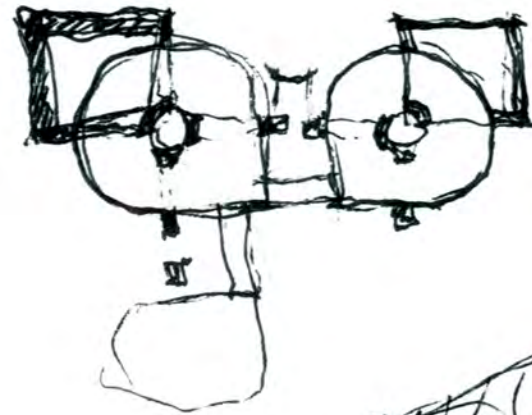
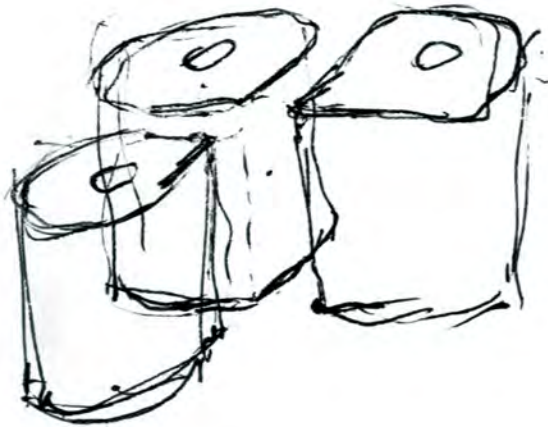
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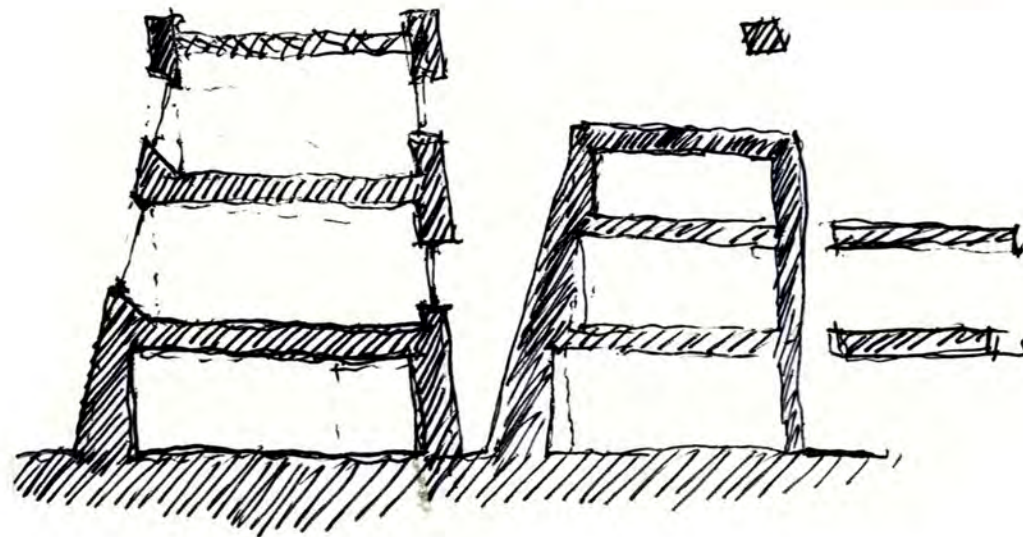
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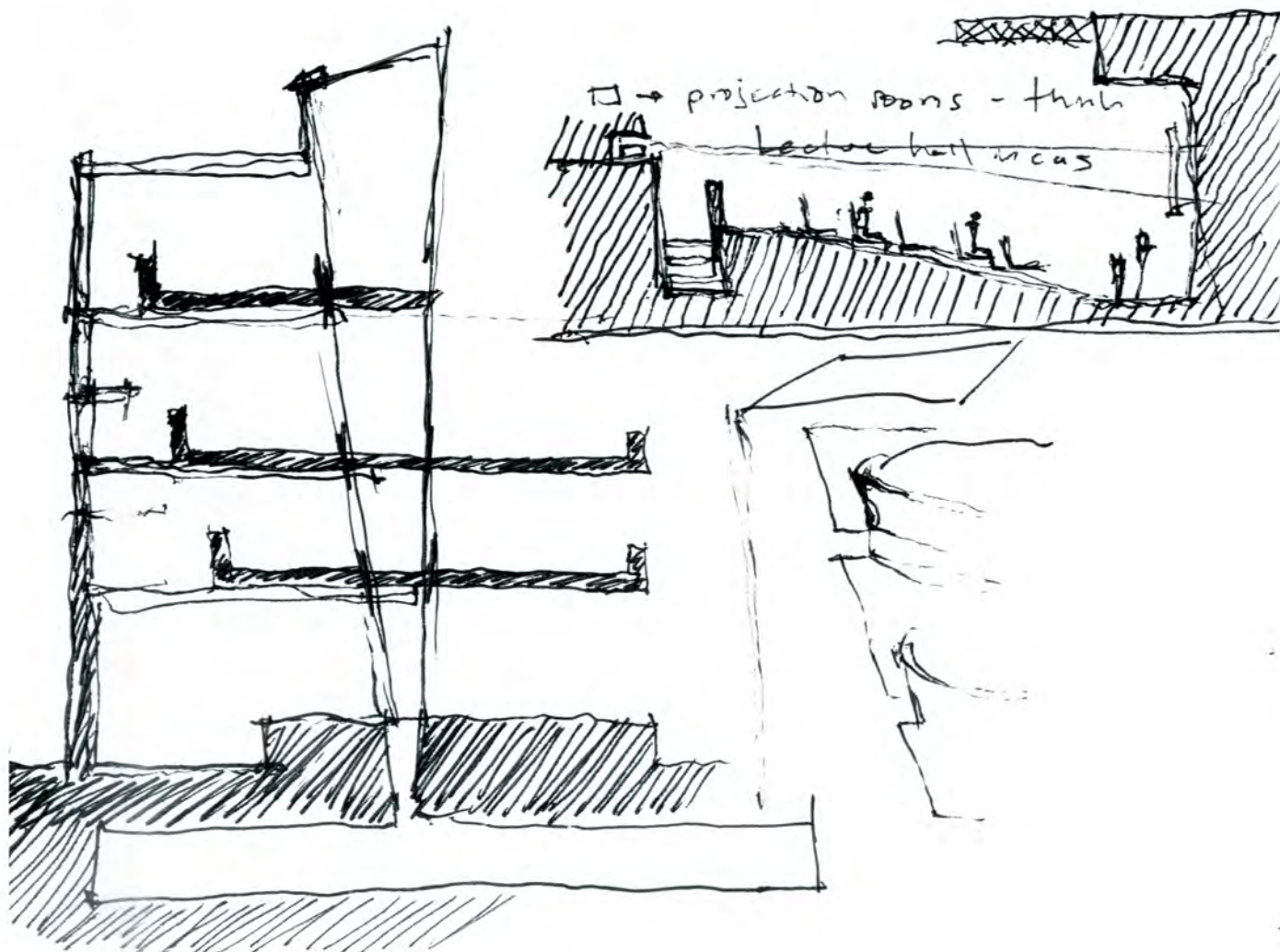
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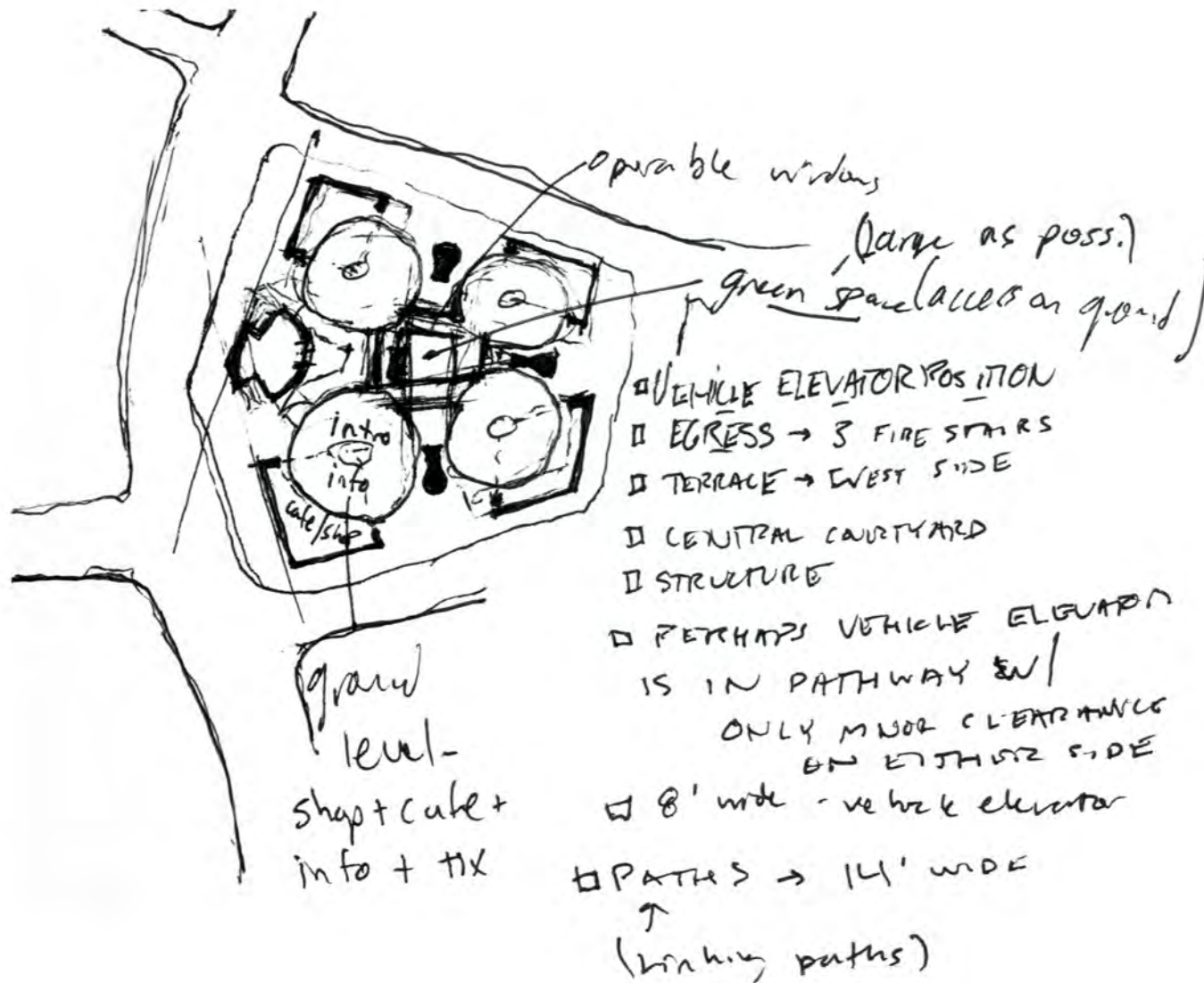
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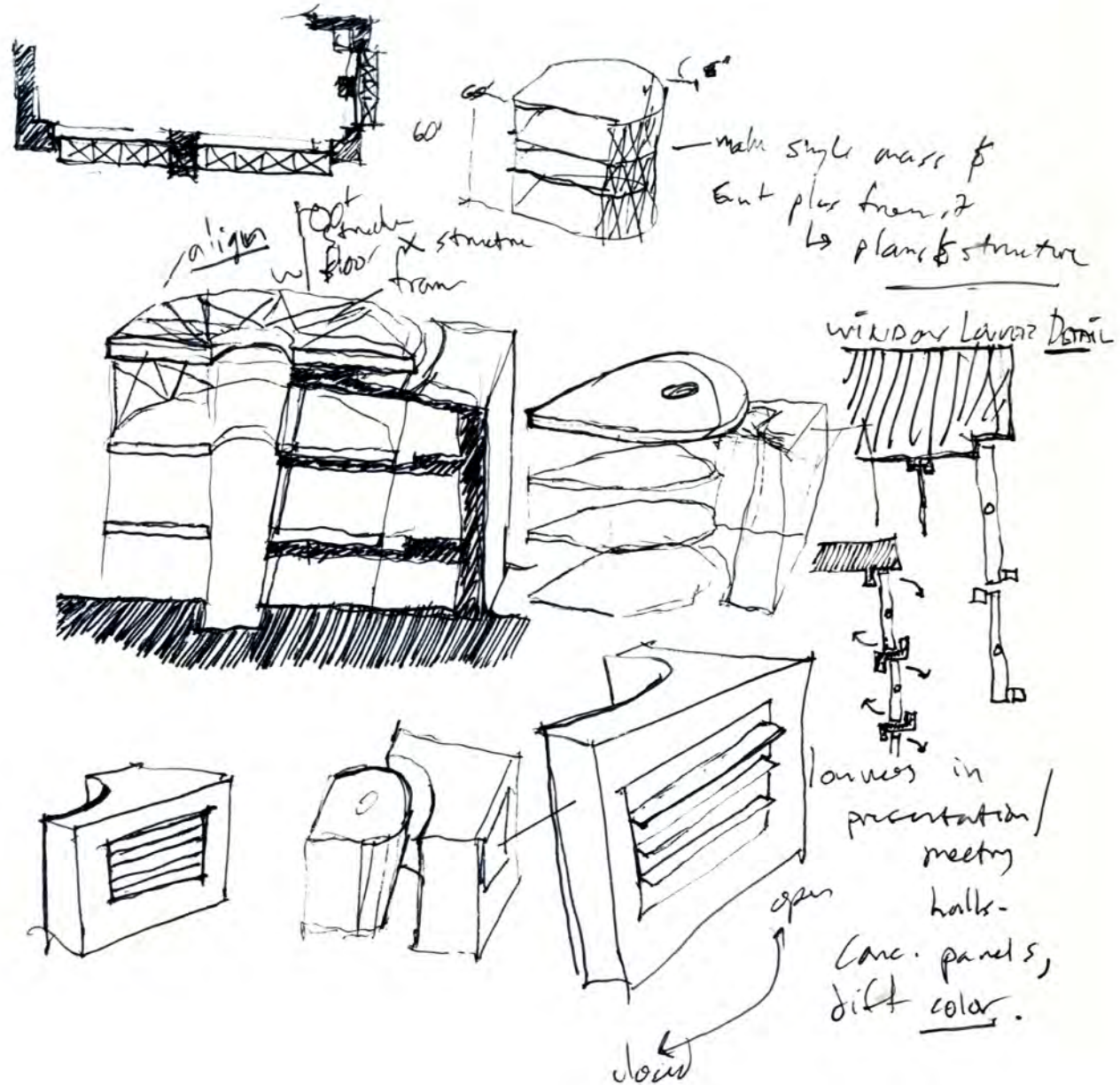
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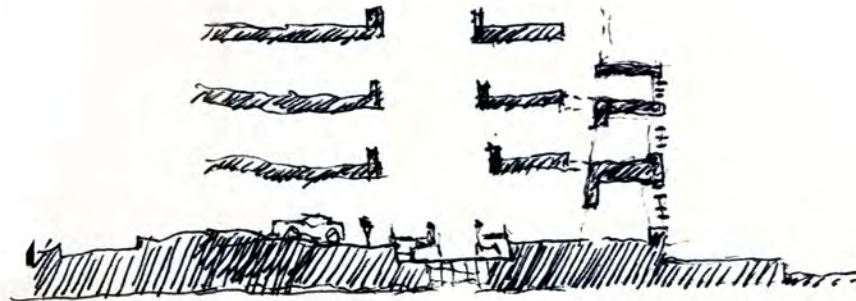
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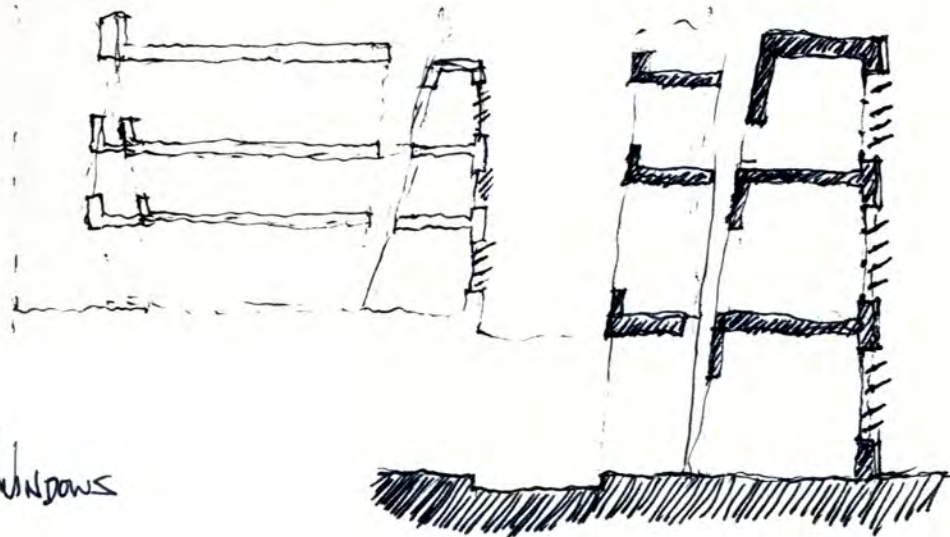
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DOUBLE SKIN FACADE / WINDOWS



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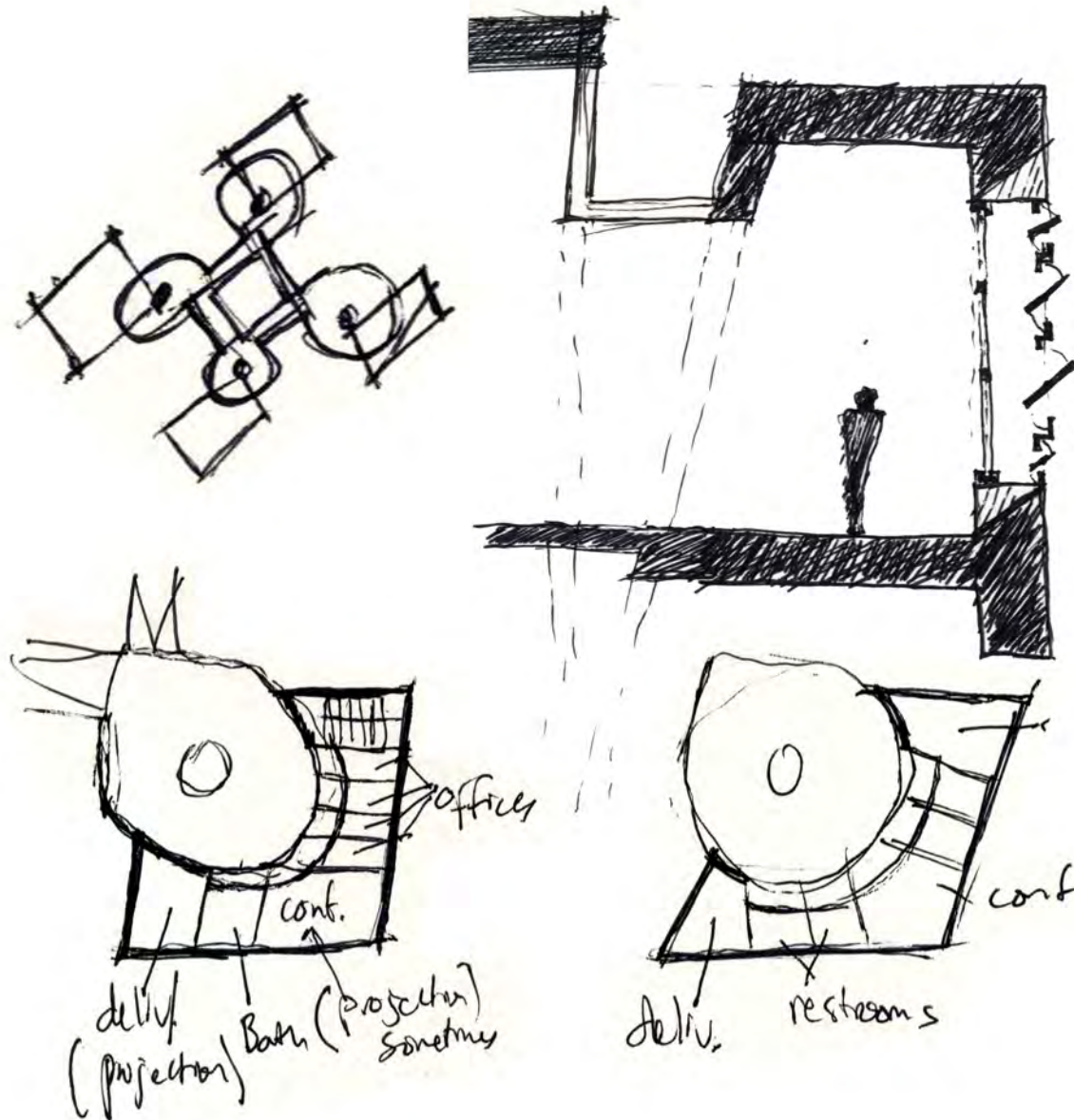
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concept/progress



[introduction]

The Volvo Museum of Automotive History (VMoAH) exists in order to provide avid car enthusiasts and curious visitors alike with the opportunity to travel through a physical timeline of the developmental history of the Swedish automaker, Volvo. Whether interested in investigating the advances in automotive technology that Volvo has made or simply in the experience of a historical timeline that covers the gap between the humble beginnings and the latest vehicle offerings, VMoAH provides the visitor with a complete journey from Volvo's conception to its current products.

[program]

VMoAH lifts vintage and modern Volvos off of the ground in the center of mid-town Boston, offering visitors and passers-by peculiar views from below of the exhibits housed within the museum. The public café invites visitors to the museum, whether or not they initially intend to traverse the exhibition program. Should the visitor choose to enter the galleries, he or she will travel through generations of Volvo automobiles, beginning with vintage passenger cars on the ground floor to conceptual ultra-efficient coupes of the future. Visitors will learn of Volvo's strong heritage and commitment to safety through the observation of not only the vehicles in the main cylindrical gallery spaces, but also the vehicle components exhibited in the corner galleries of the museum.

The ultimate goal of the program is to educate the visitor about Volvo's progression from "boxy tanks" to streamlined works of art, but it also serves as a personal and direct research aid to anyone who may be considering a Volvo for their next automobile. The program seeks to integrate the visitors' simultaneous investigation of historical artifacts, commercial products, future technological advances, and other individuals who are there for the same reason.

[siting]

The building is situated in mid-town Boston, nestled on a bending point in Washington Street that is near to many commercial centers as well as galleries and theaters. There is an extensive amount of pedestrian traffic that passes adjacent and near to the site, so plazas have been cut into the building and site to accommodate those who would like to rest or perhaps socialize while enjoying a cup of the café's coffee. Traffic around the site is busiest on Washington Street, which borders on the West, so the entrance and exit of the admin parking level has been located on Harrison Ave on the more docile Eastern side of the site.

[building design]

The cylindrical design of the vehicle galleries was inspired by the appearance of a typical clover-leaf highway entry/exit ramp system, and proportioned around the 32-foot turning radius of the average Volvo. Each cylinder consists of concrete floors supported by steel columns and beams, with a truss-like façade composed of welded steel tubes and large expanses of glass intended to allude to the grille of an automobile. Each cylinder is donut-shaped with an atrium in the center that allows light and views to penetrate through the levels and also requires that visitors proceed through the exhibits in an orbital fashion similar to the path travelled by an automobile on a cloverleaf. These 4 cylindrical gallery spaces are connected to one another by ramps that rise 2' between galleries. This results in a shift in height between each gallery that offers visitors with a multitude of varying vantage points of each vehicle providing an interesting experience as well as a separation between generations of automobile.

Volvo is a proud company that has built its legacy through the design and production of honest, strong, and safe vehicles. The exposed heavy structure of the building is intended to be a direct link to the "tank" image that is associated with Volvo, and also provides visitors with evidence of structural integrity. The building is intended to appear strong, and the direct connection of the cylindrical vehicle galleries and the rectilinear vehicle component exhibition and administrative corner volumes exists as a reference to the evolutionary progression of Volvo automobiles from the "boxy tanks" they once were to the sleek and safe technological vehicles they have become.

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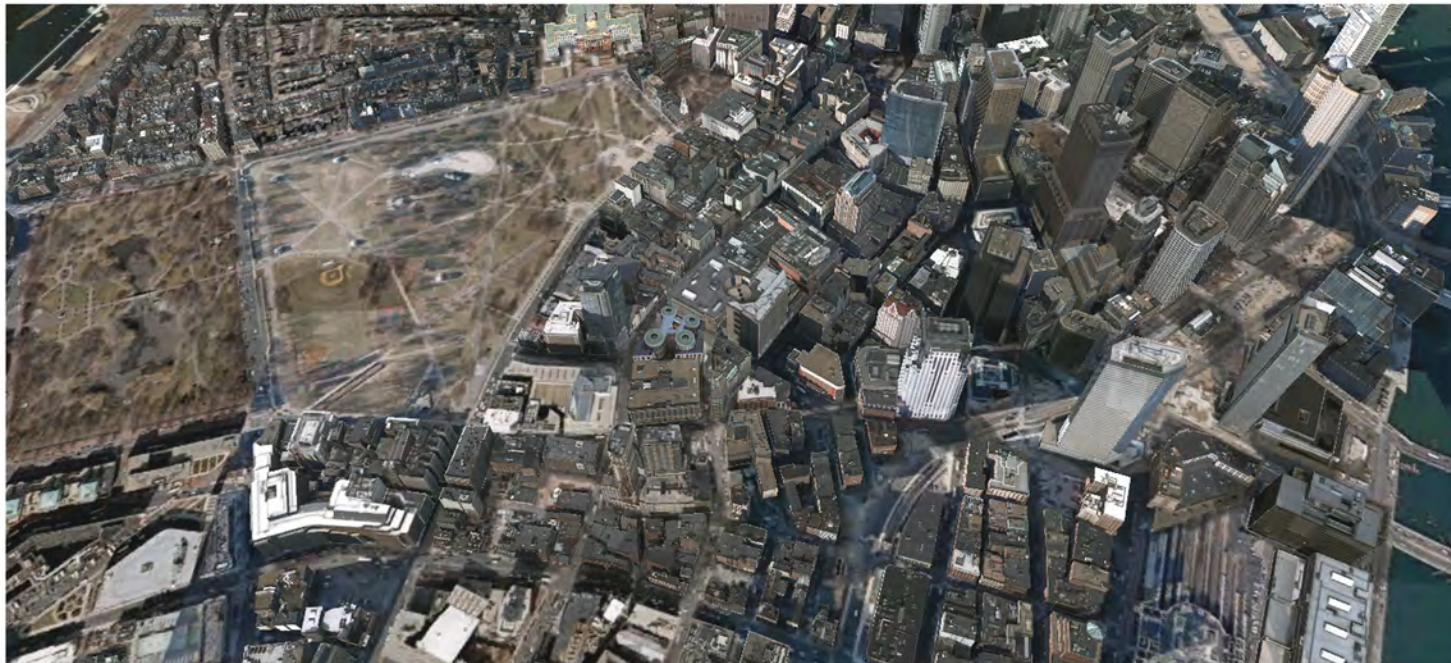
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aerial view from north (includes VMoAH)



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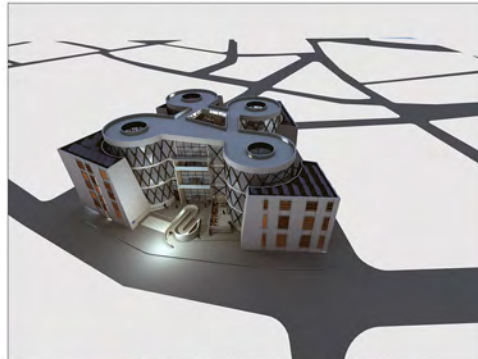
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aerial view from south (includes VMoAH)



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site plan (indicating site section cuts)

Volvo Museum of Automotive History

Boston, MA



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volvos throughout history

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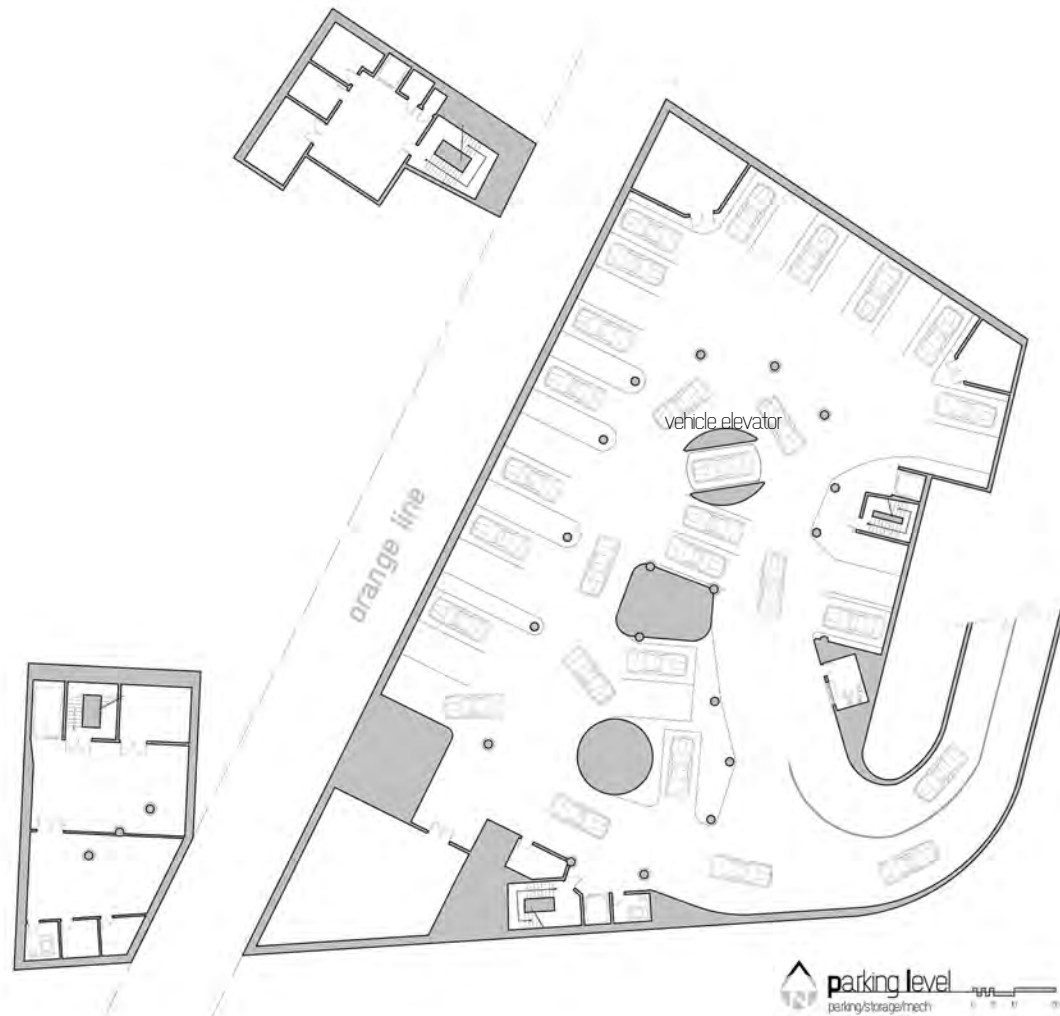
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parking level (below grade)



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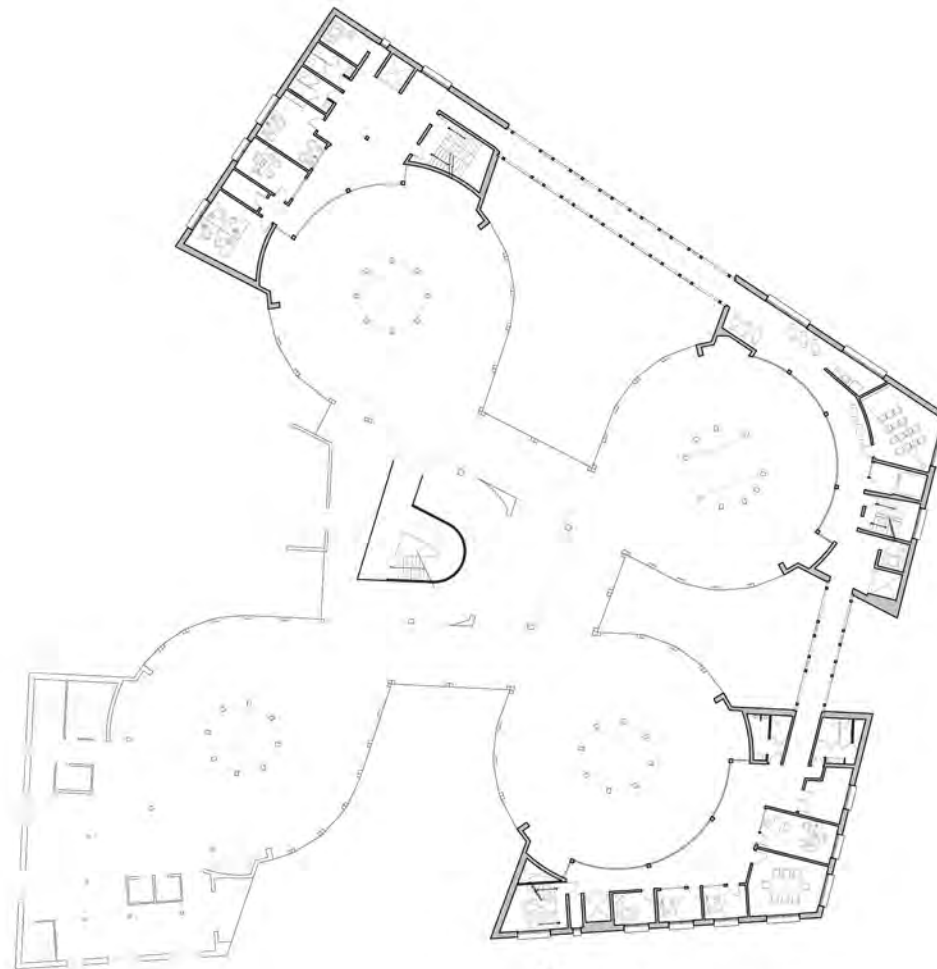
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first floor
administration

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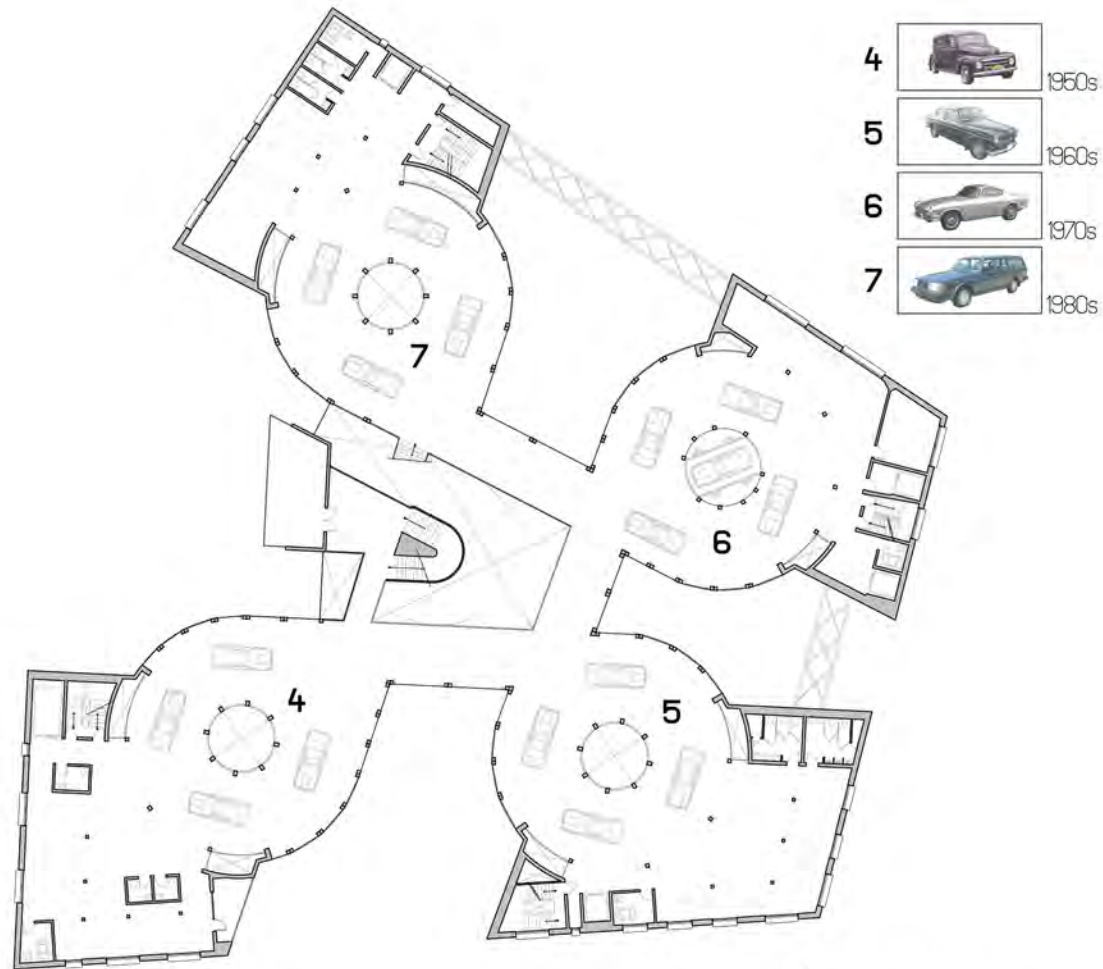
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first floor plan (admin)



second floor
galleries / projection

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second floor plan (galleries)

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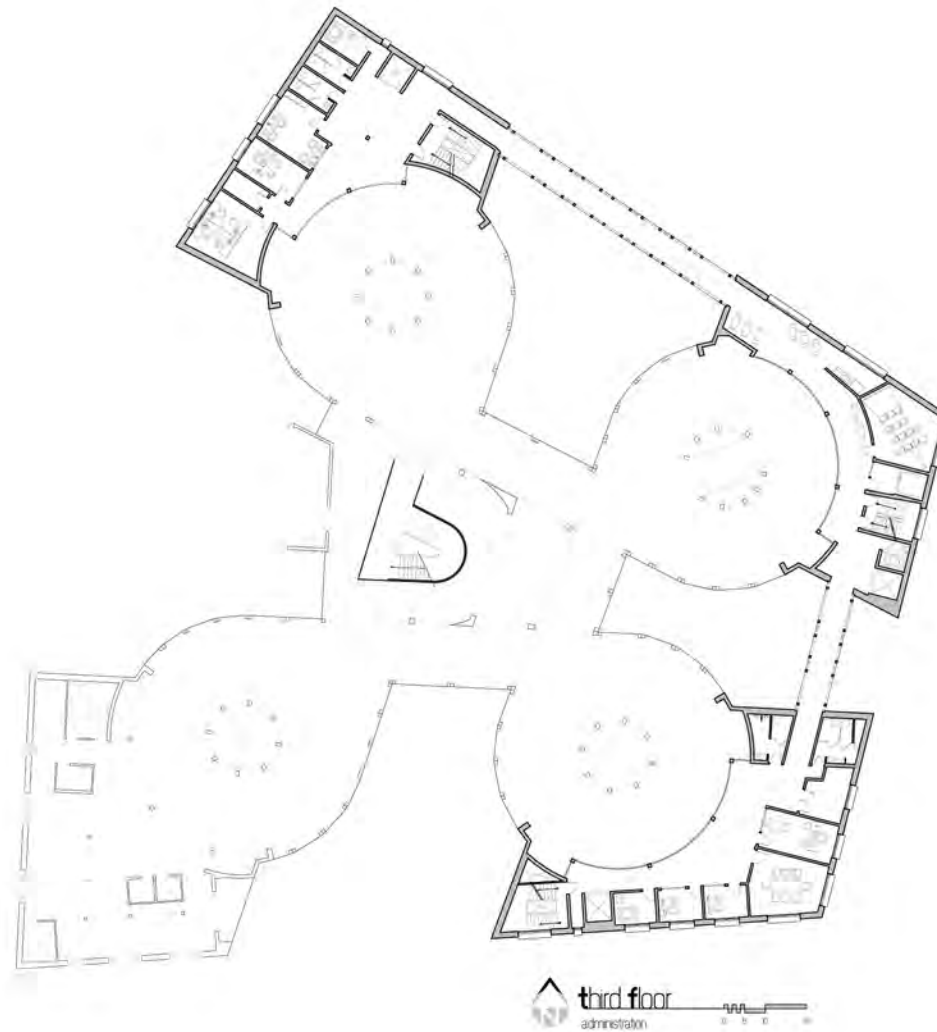
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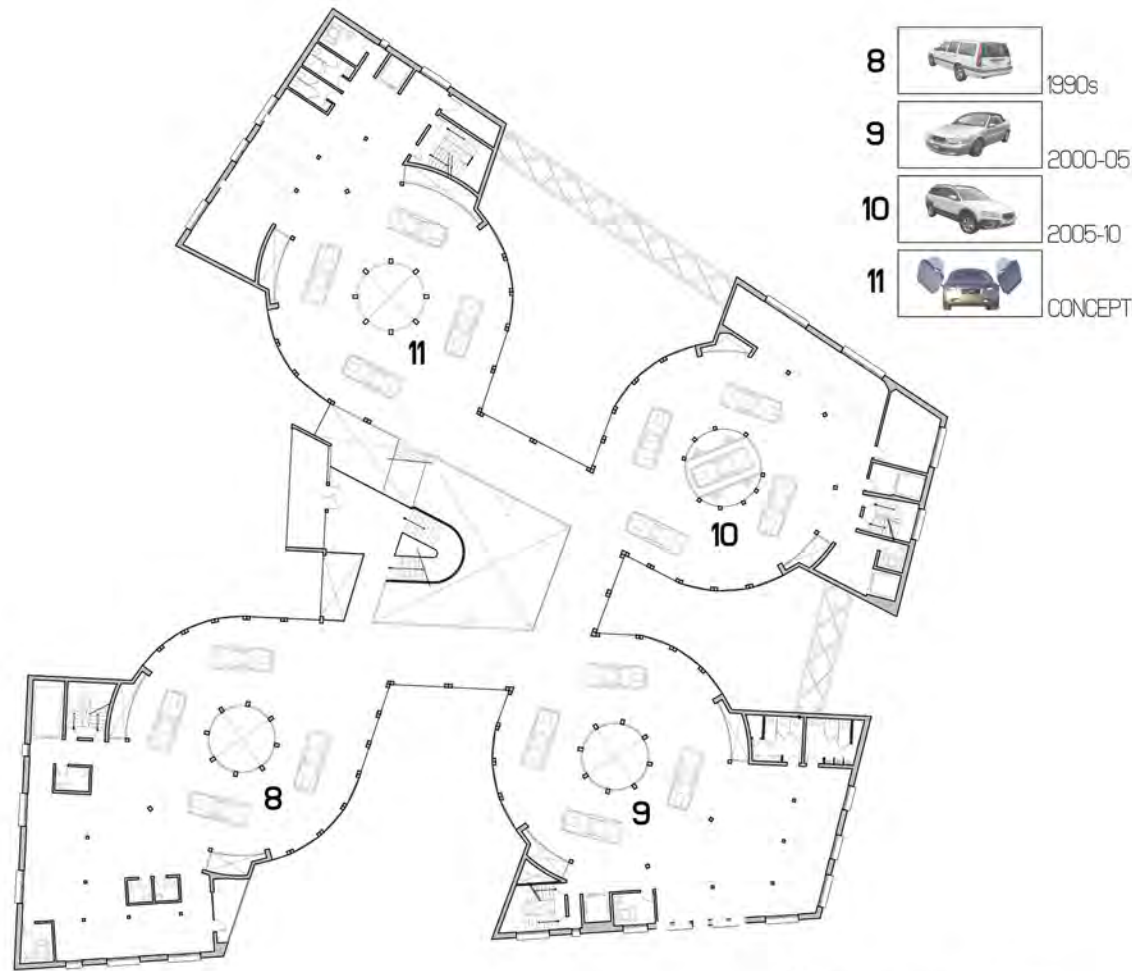
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third floor plan (admin)



fourth floor
galleries / projection

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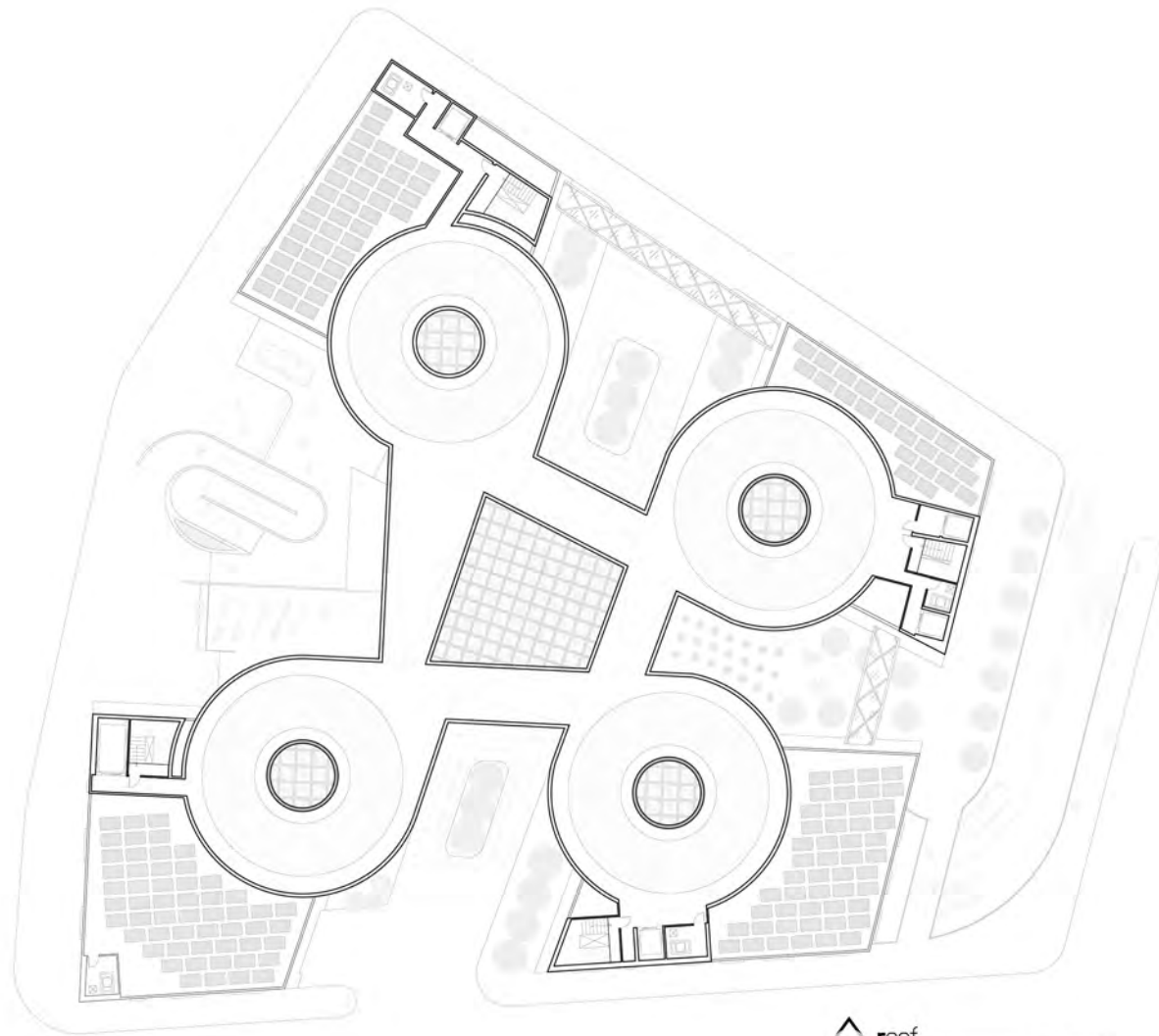
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roof plan

Below Grade Level

parking	16225
storage	3672
mech	1209
egress	473
elev	236
security	100

total 21915

Ground Level

Service	
egress stairs	802
restrooms	553
stock room	460
delivery	455
elevators	337
vehicle elevator	300
mech	280
exit	200
storage	73
security	65

total 3525

Cafe

cafe seating/shop	2800
outdoor cafe	766
cafe/counter	555
cafe work space	260
cafe prep	190
cafe office	100
cafe freezer	25

total 4696

Museum

vehicle gallery	8000
outdoor piazzas	524
component gallery	3090
entry piazza	1425
lobby/info	1200
lobby/coat room	640
computer area	600
projection room	342

total 20461

total 21915

total 28682

2nd Level (ADMIN)

Service	
egress	618
lav	366
mech	208
elevator	90
storage	80

total 1362

Admin

arc/data/free space	2472
sky bridge	582
shared office	435
large office	35
projection room	275
conference room	250
single office	190
break/lounge	140

total 4659

total 6021

3rd Level (MUSEUM)

Service	
egress	602
lav	545
elevator	336
vehicle elevator	300
storage	290
mech	280

total 2553

Museum

vehicle gallery	9900
component gallery	5430
balcony	520
lounge	415

total 16265

total 18818

4th Level (ADMIN)

Service	
egress	618
lav	366
mech	208
elevator	90
storage	80

total 1362

Admin

arc/data/free space	2472
sky bridge	582
shared office	435
large office	35
projection room	275
conference room	250
single office	190
break/lounge	140

total 4659

total 6021

5th Level (MUSEUM)

Service	
egress	802
lav	545
elevator	336
vehicle elevator	300
storage	290
mech	280

total 2553

Museum

vehicle gallery	9900
component gallery	5430
balcony	520
lounge	415

total 16265

total 18818

Roof

green roof	5999
photovoltaic	3666
egress	618
elevator	348
mech	307

total 11127

total 11127

PROJECT

Below Grade Level	21915
Ground Level	28682
2nd Level (ADMIN)	6021
3rd Level (Museum)	18818
4th Level (ADMIN)	6021
5th Level (MUSEUM)	18818
Roof	11127

PROJECT TOTAL 111,402

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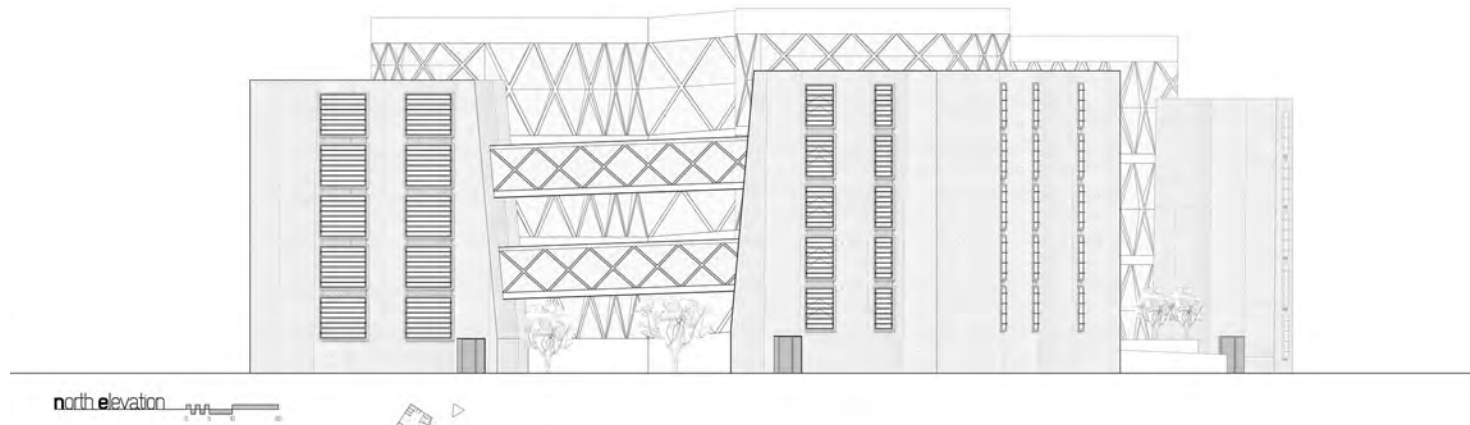
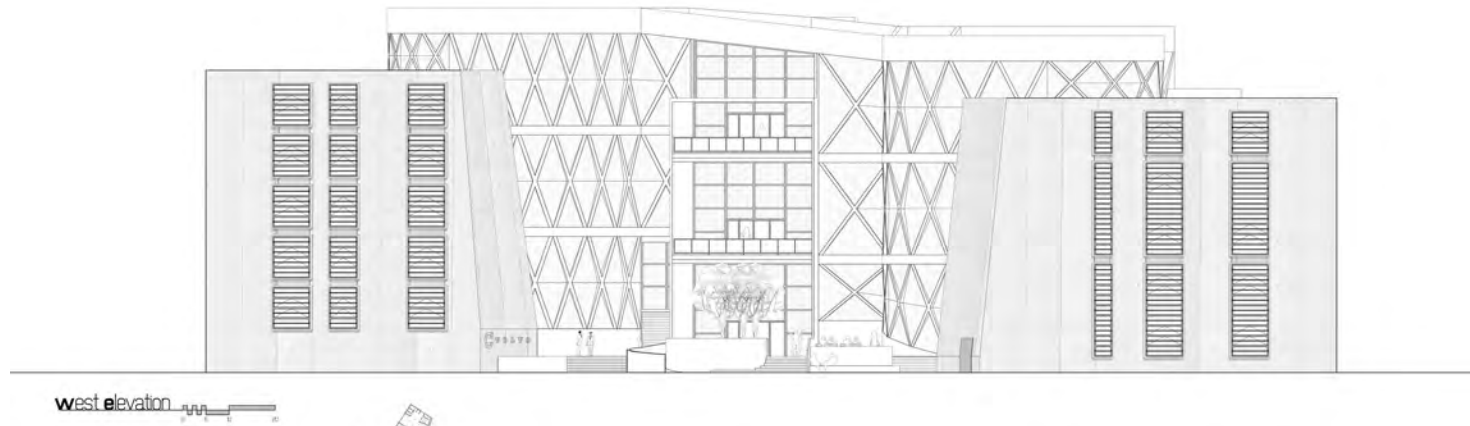
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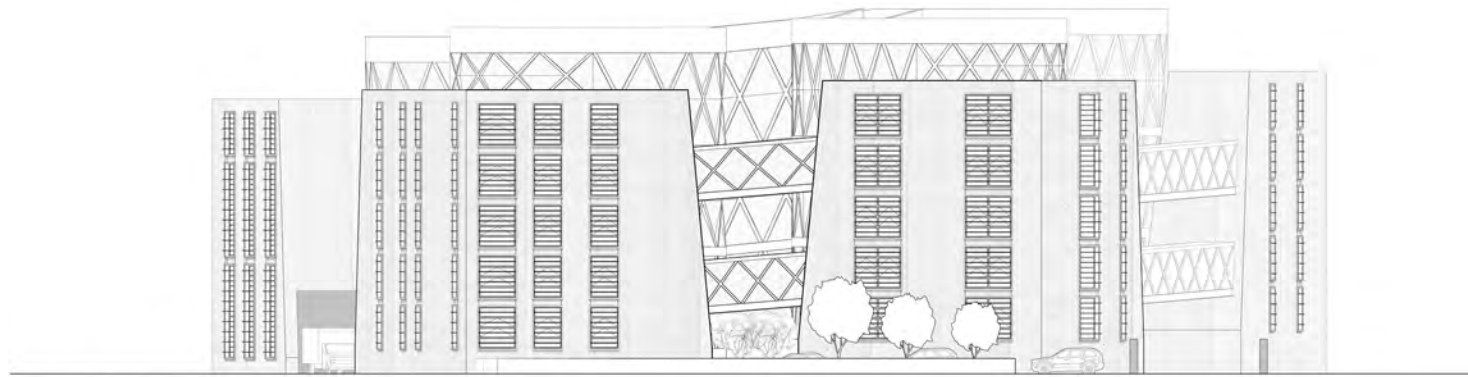
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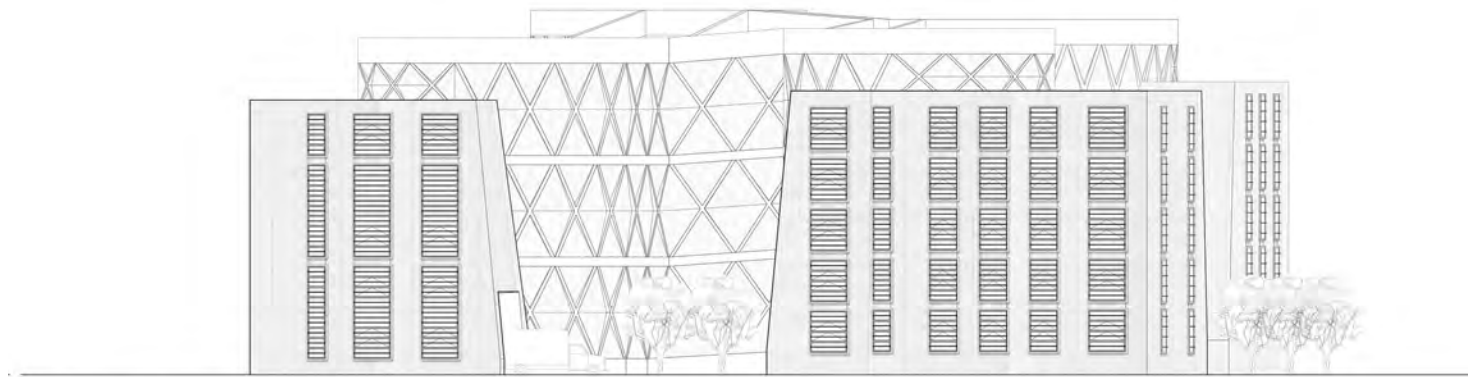
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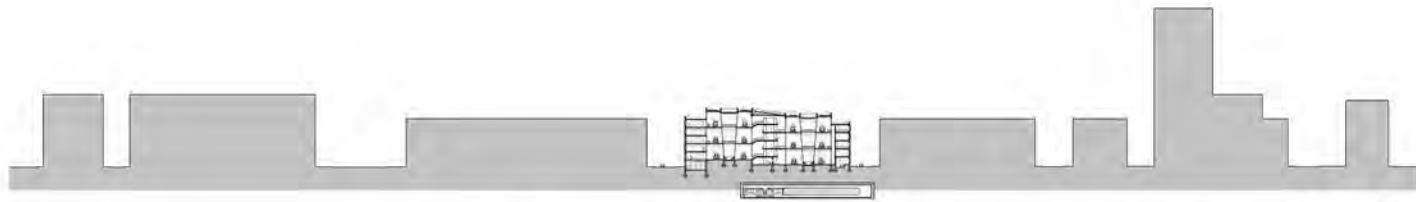


east elevation

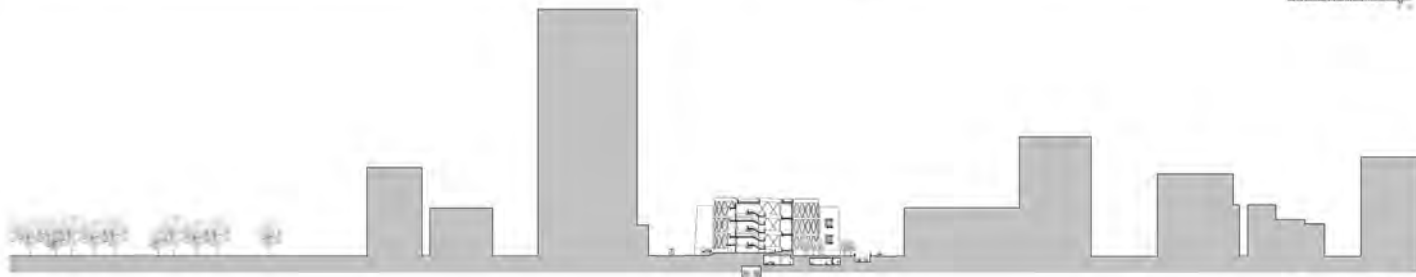


south elevation

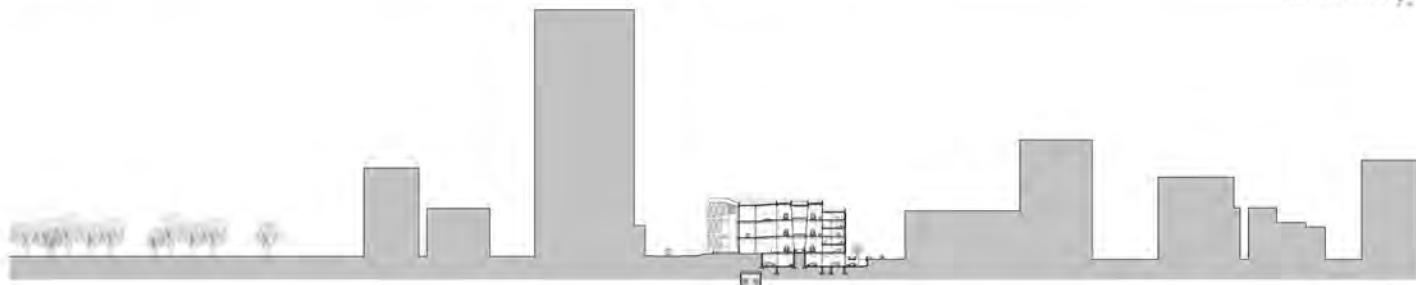




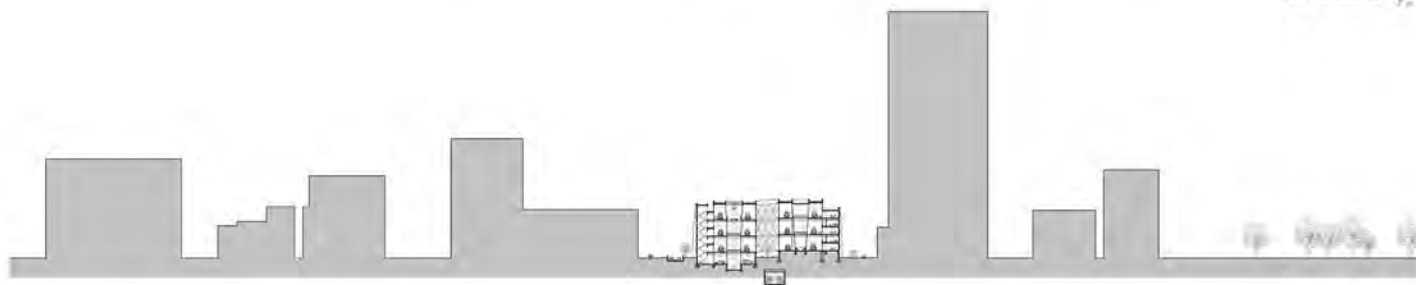
site section A



site section B



site section C



site section D

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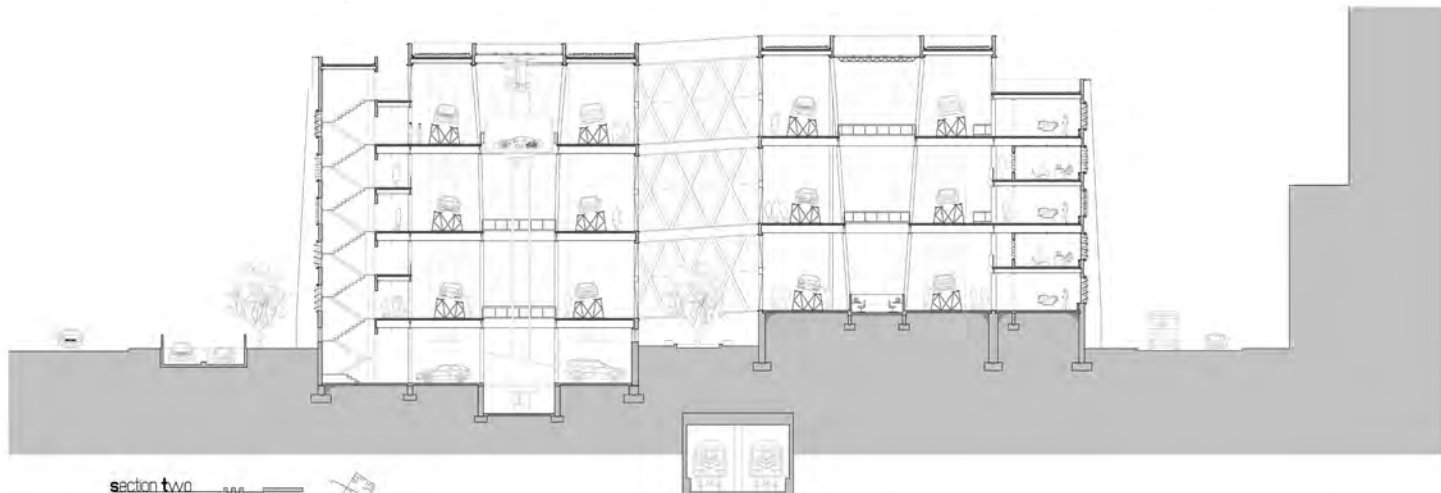
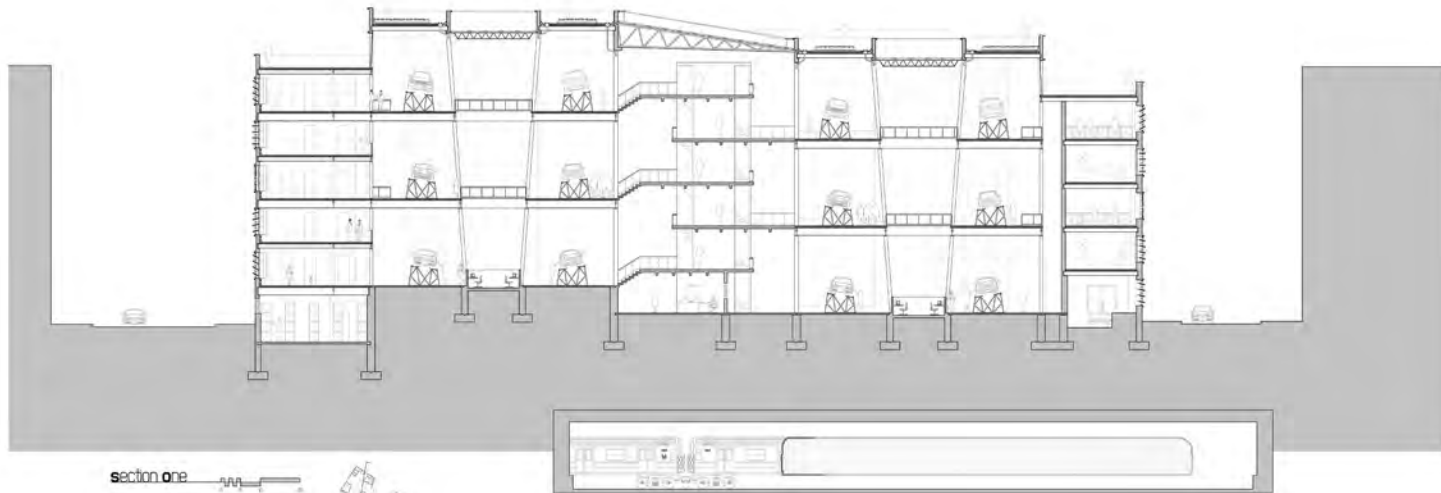
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building sections one & two

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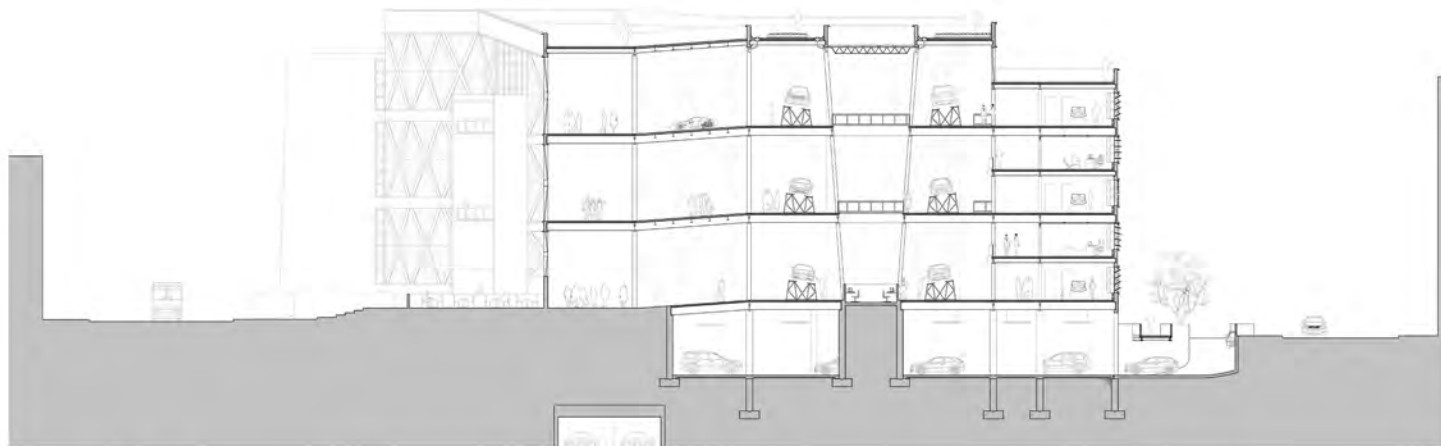
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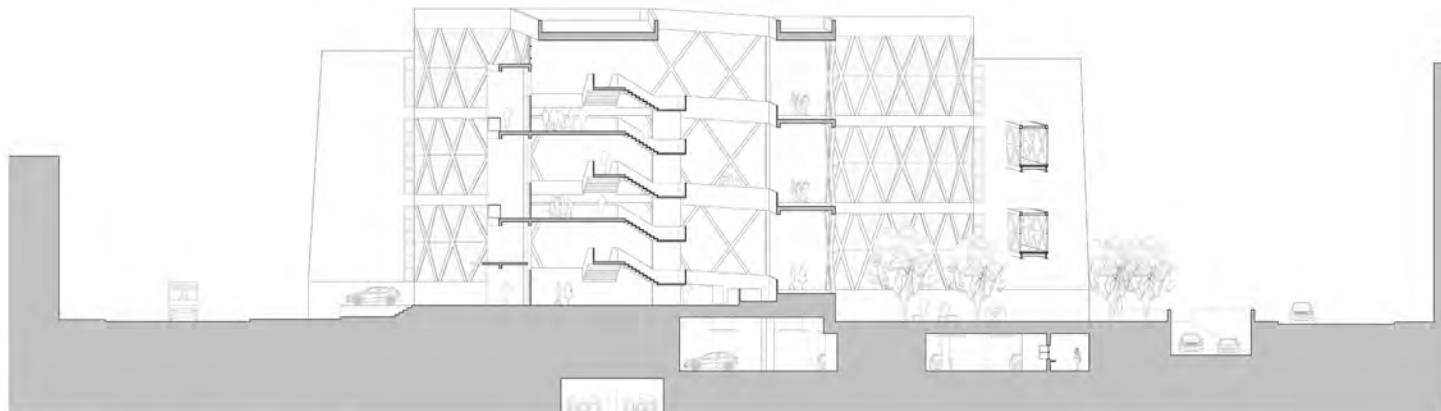
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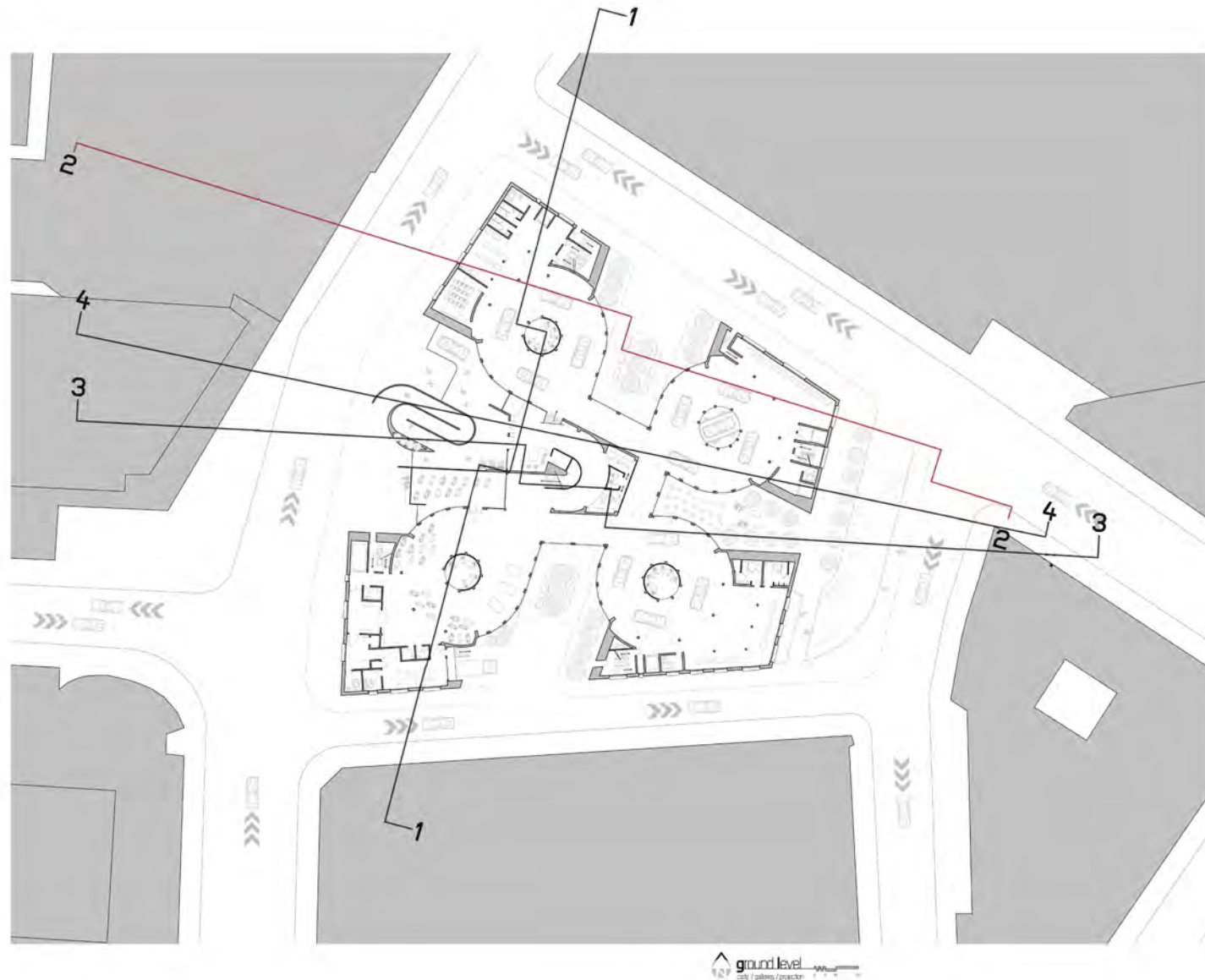


section three



section four





ground level
scale / pattern / projection

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site plan (locates section cuts / notes traffic directions)

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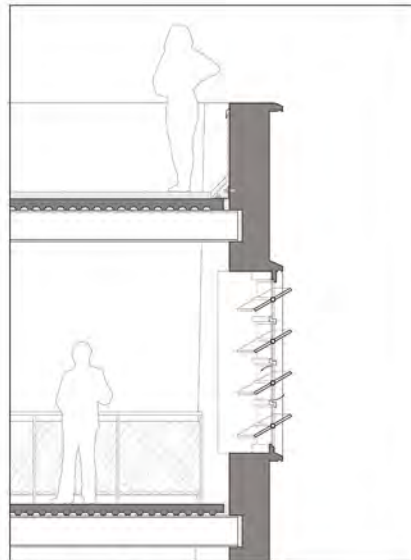
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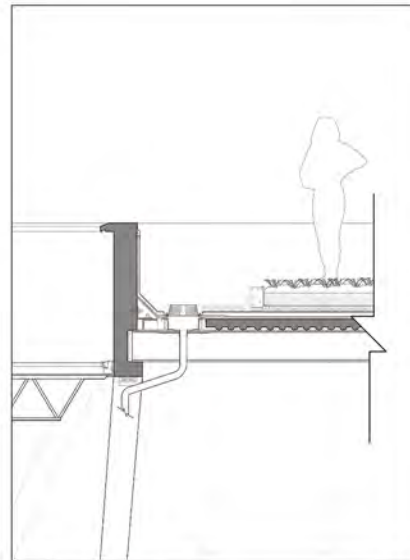
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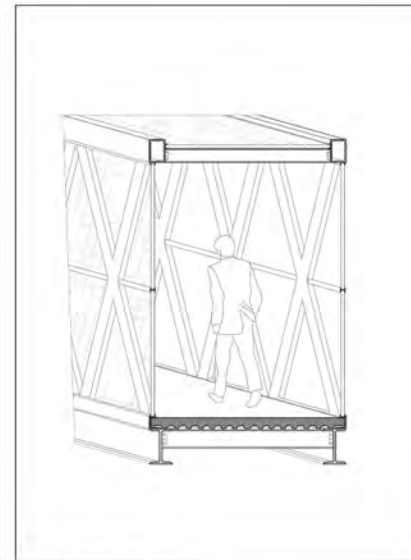
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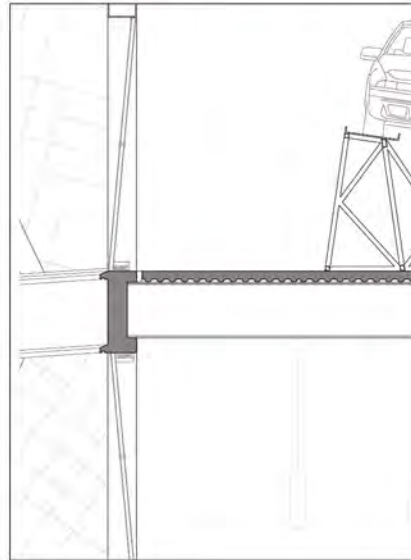
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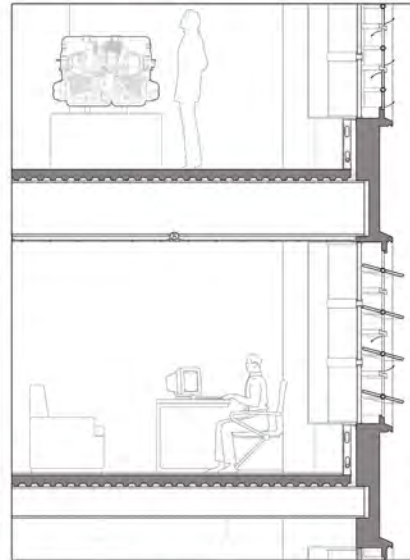
detail two



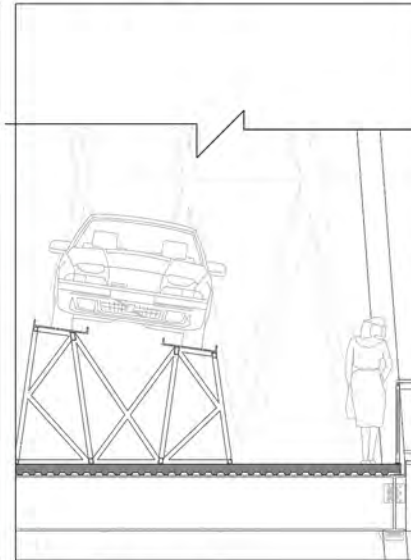
detail three



detail four



detail five



detail six

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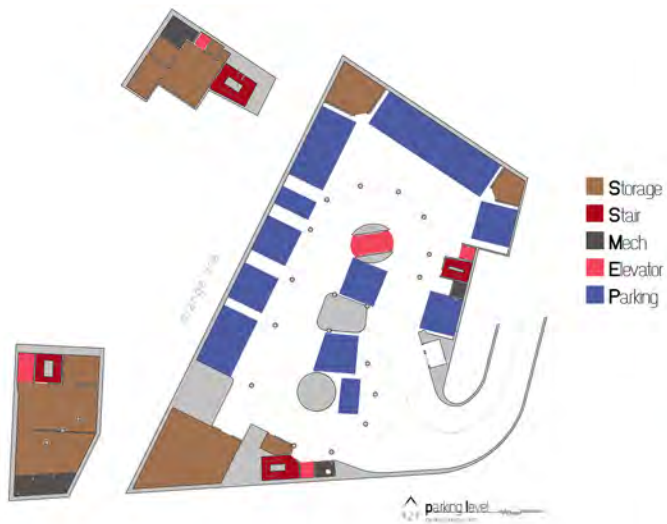
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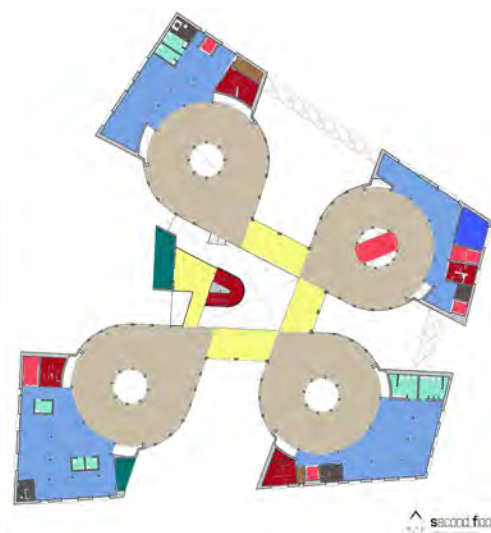
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- Storage
- Stair
- Mech
- Elevator
- Restroom
- Admin



- Storage
- Stair
- Mech
- Elevator
- Component Gallery
- Projection
- Circ
- Restroom
- Exterior Terrace
- Vehicle Gallery

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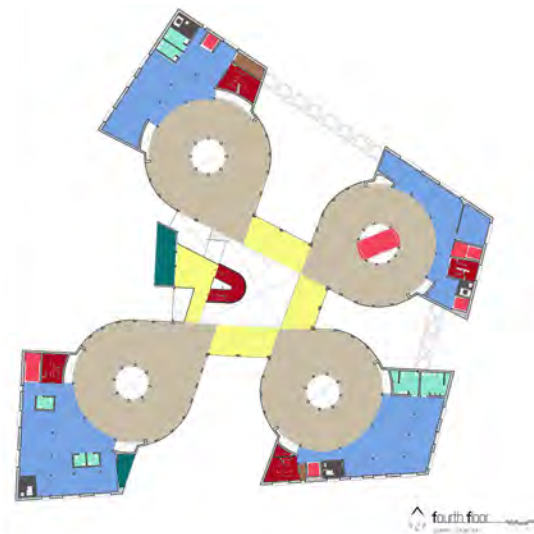
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- Storage
- Stair
- Mech
- Elevator
- Restroom
- Admin



- Storage
- Stair
- Mech
- Elevator
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- Component Gallery
- Circ.
- Restroom
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- Vehicle Gallery

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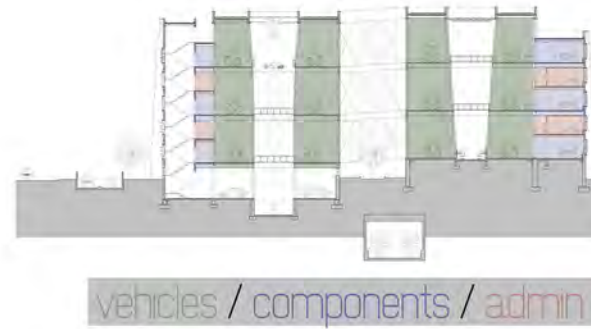
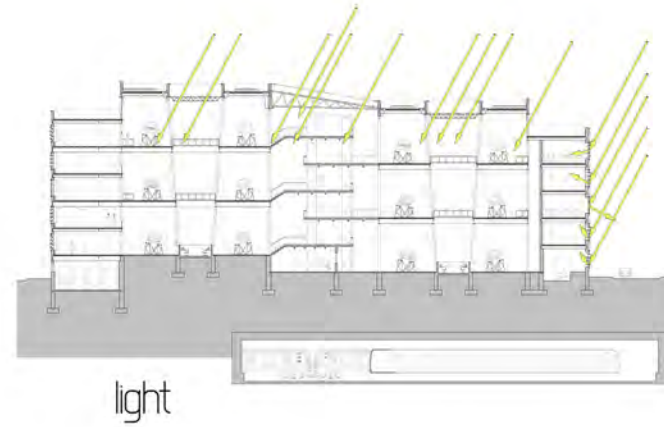
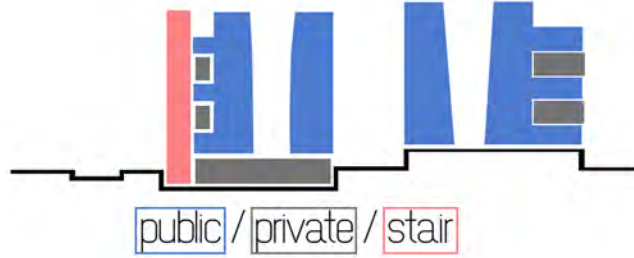
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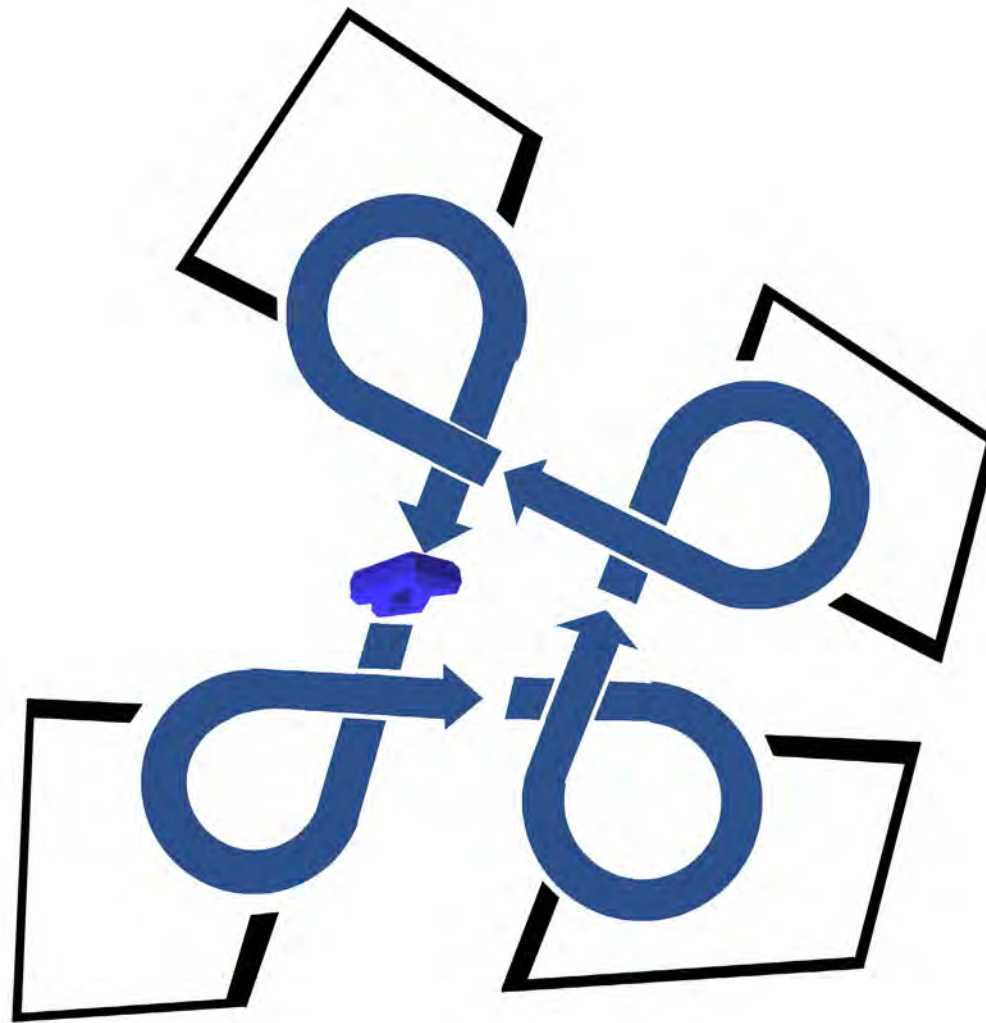
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diagrams

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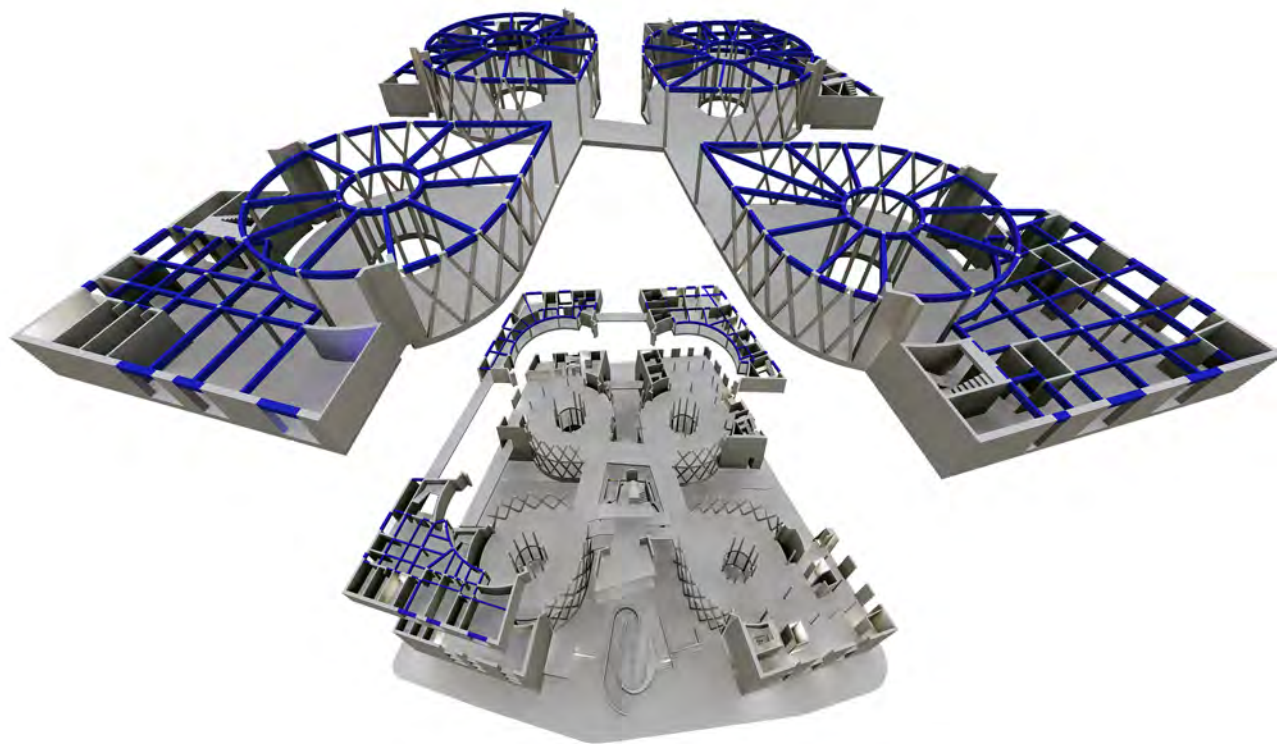
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horizontal structure

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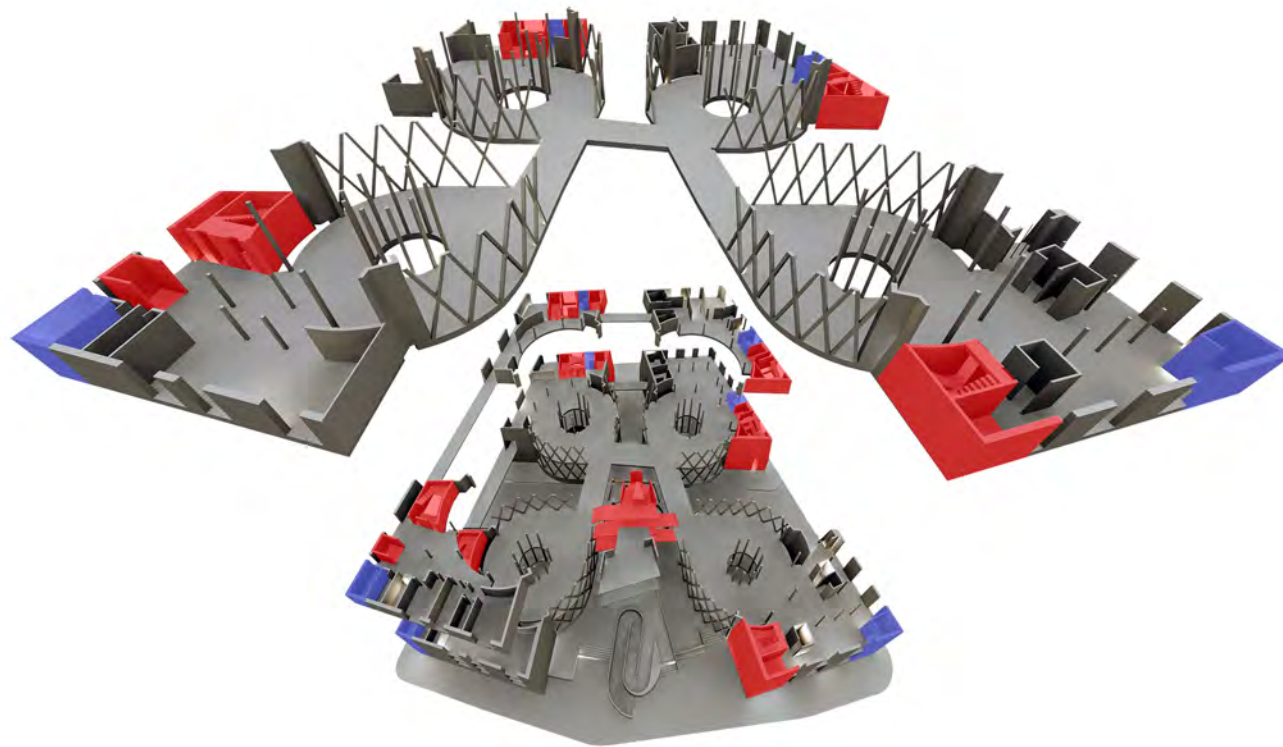
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egress / mech

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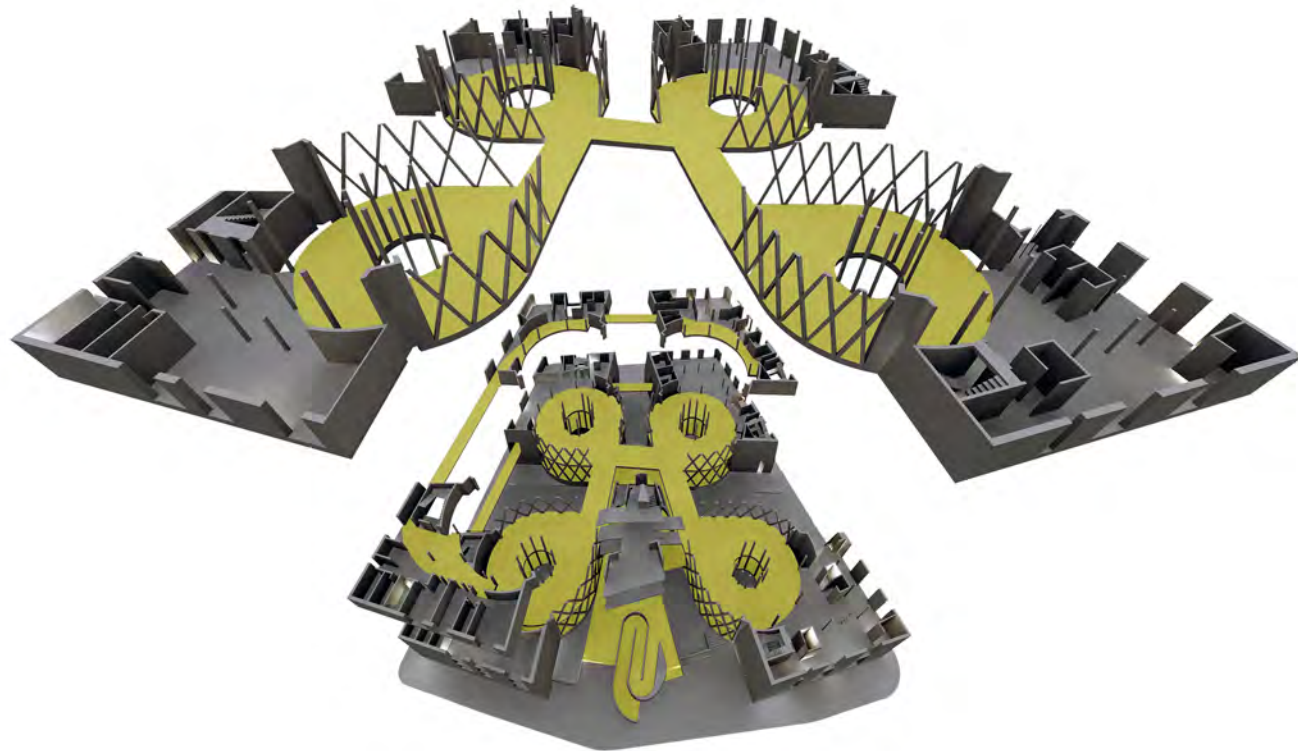
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main entry / circulation

main entry diagram

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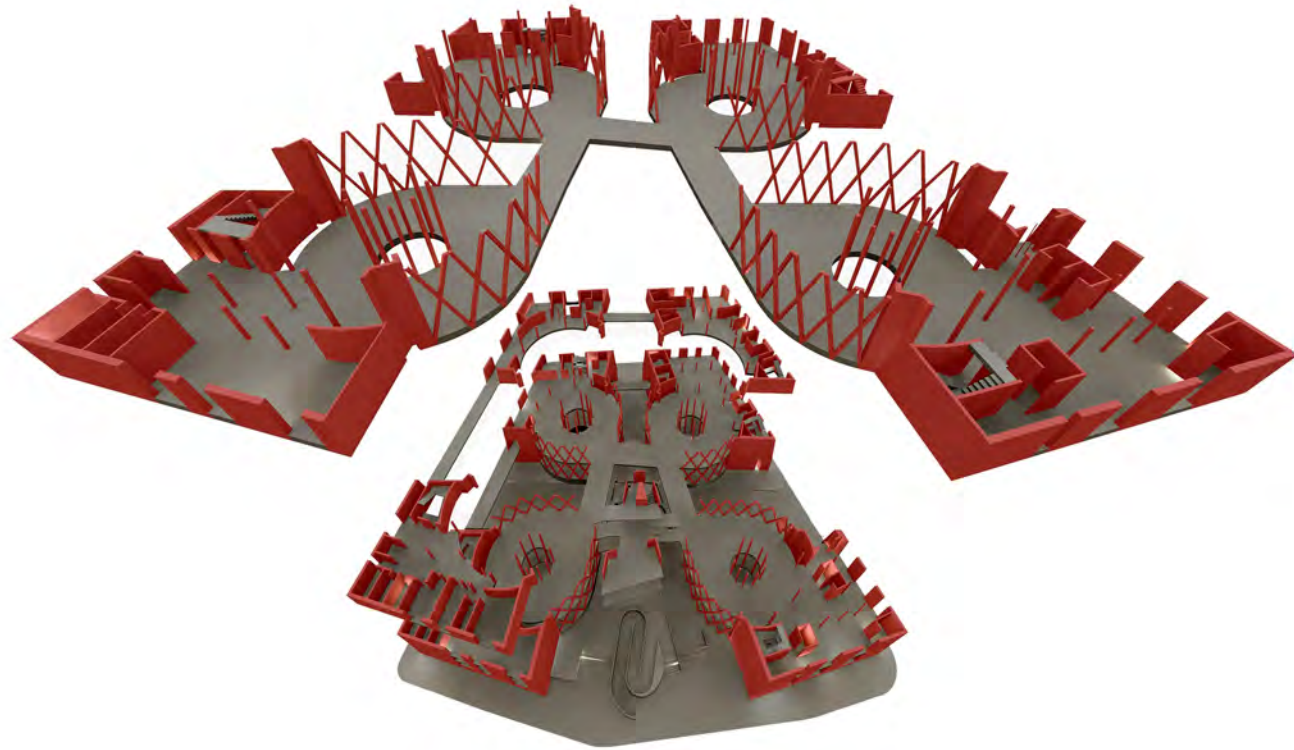
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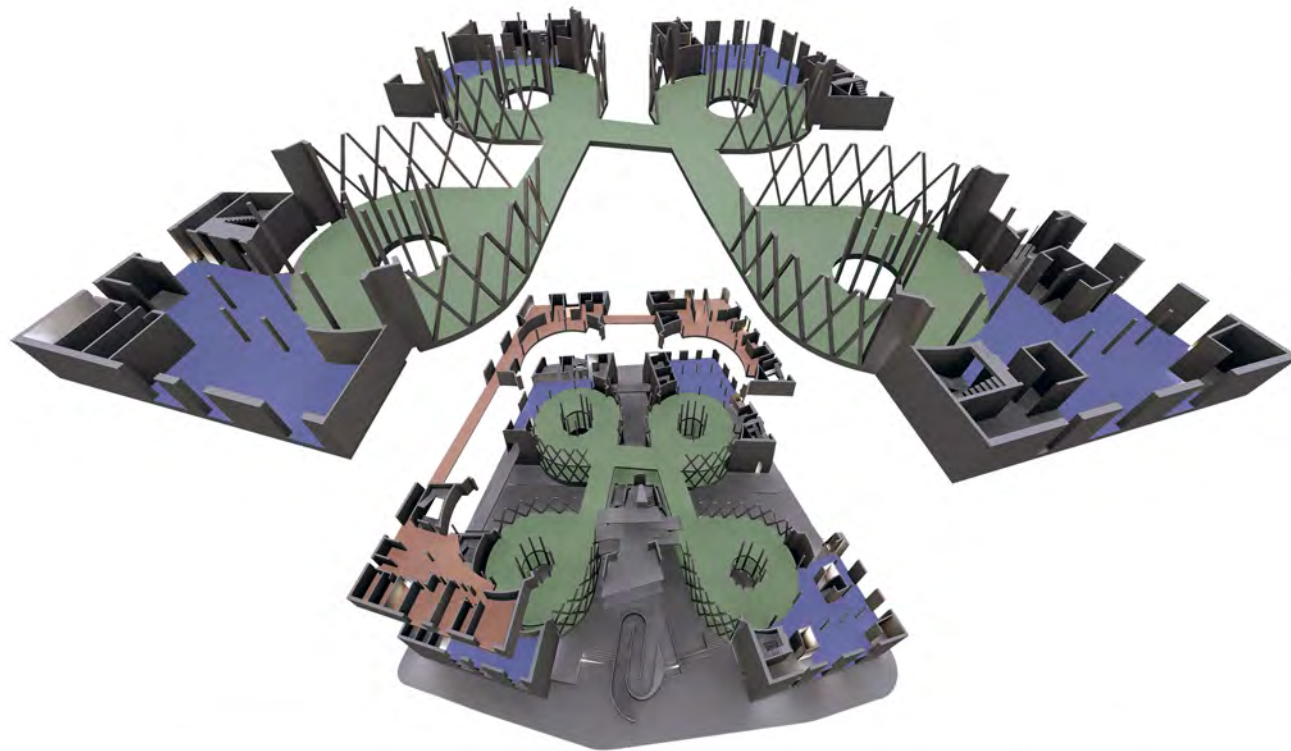
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vertical structure

vertical structure diagram



vehicles / components / admin

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program layout diagram

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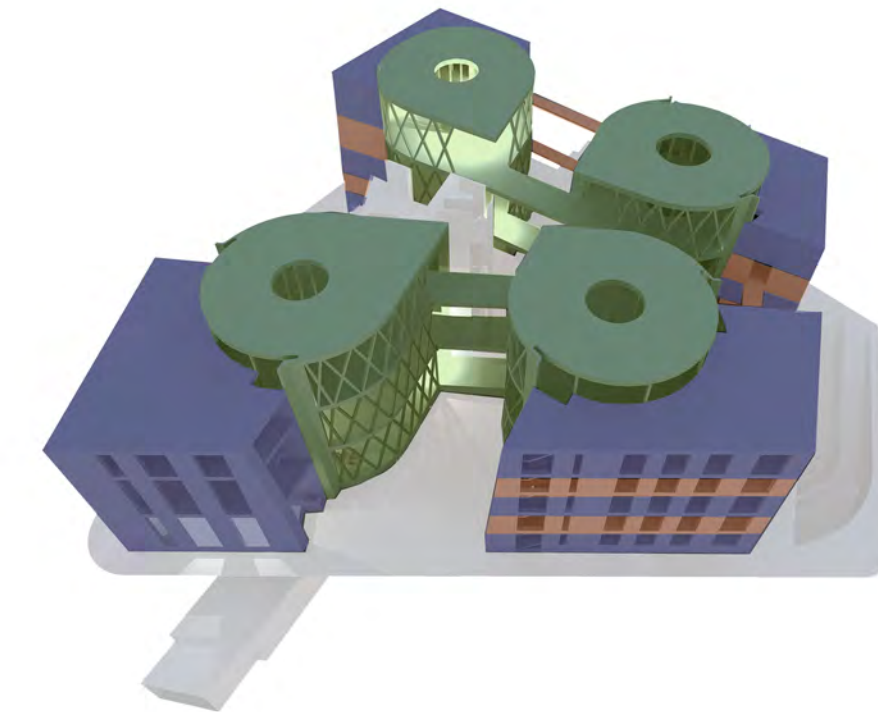
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vehicles / components / admin

main programmatic element massing diagram

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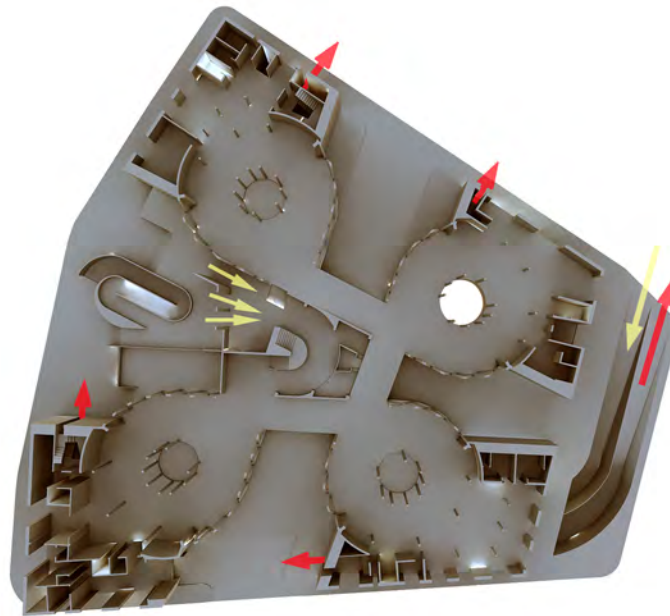
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entry / exits

entry / exits diagram

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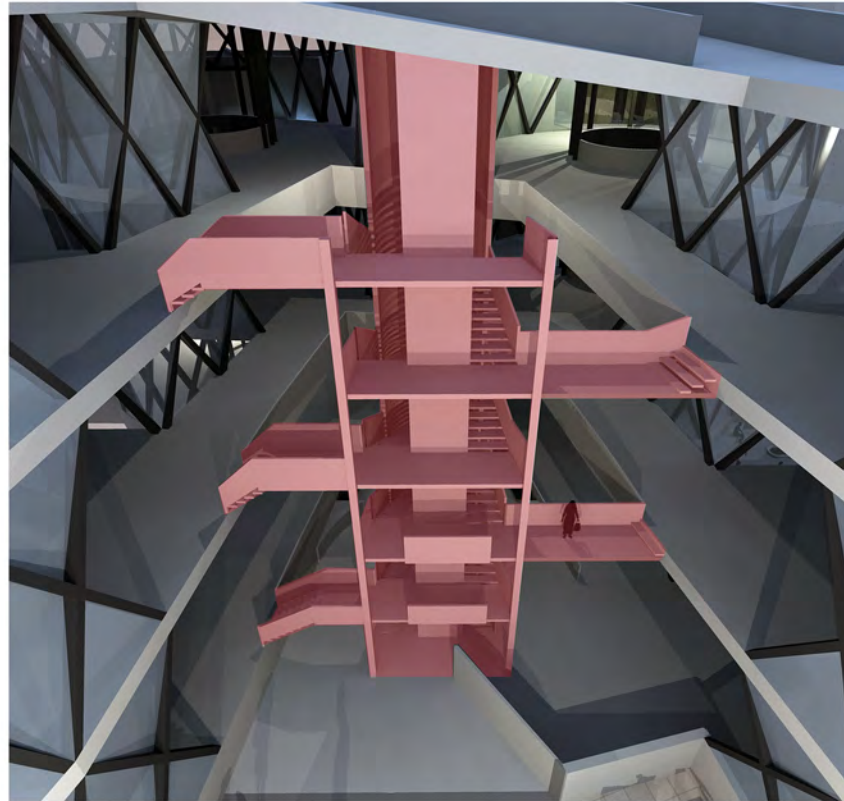
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central inter-level stair

inter-level connecting stair diagram [elevators located in corner volumes of structure]



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east entry plaza rendering 1



rendering B

UNDEFINED
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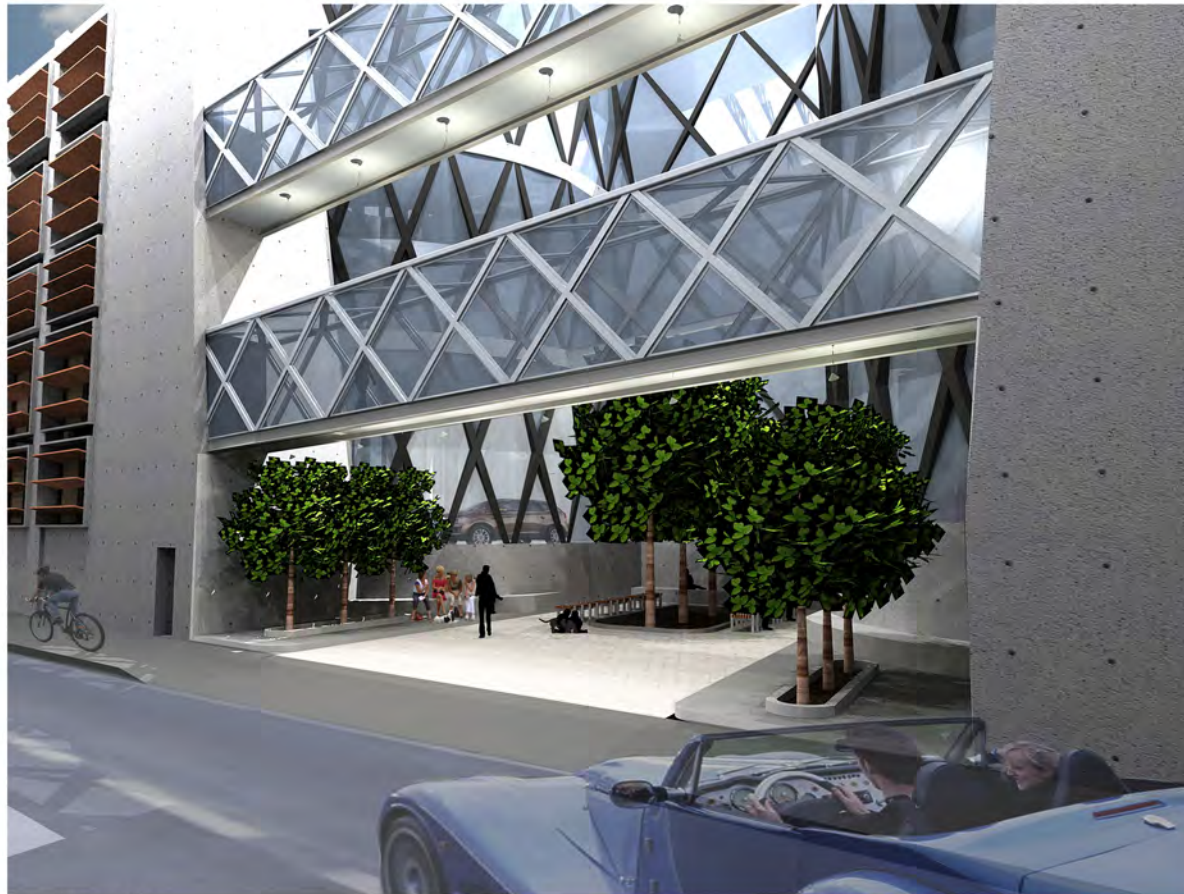
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east entry plaza rendering 2



rendering C UNCERTAIN SCALE

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north plaza rendering

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rendering D UNIFORMED SCALE

ground level lobby / reception area. rendering



rendering E
UNFINISHED
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ground level cafe / computer area / lounge rendering



rendering F UNFINISHED SCALE

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upper level vehicle gallery / component gallery / admin intermediate level rendering

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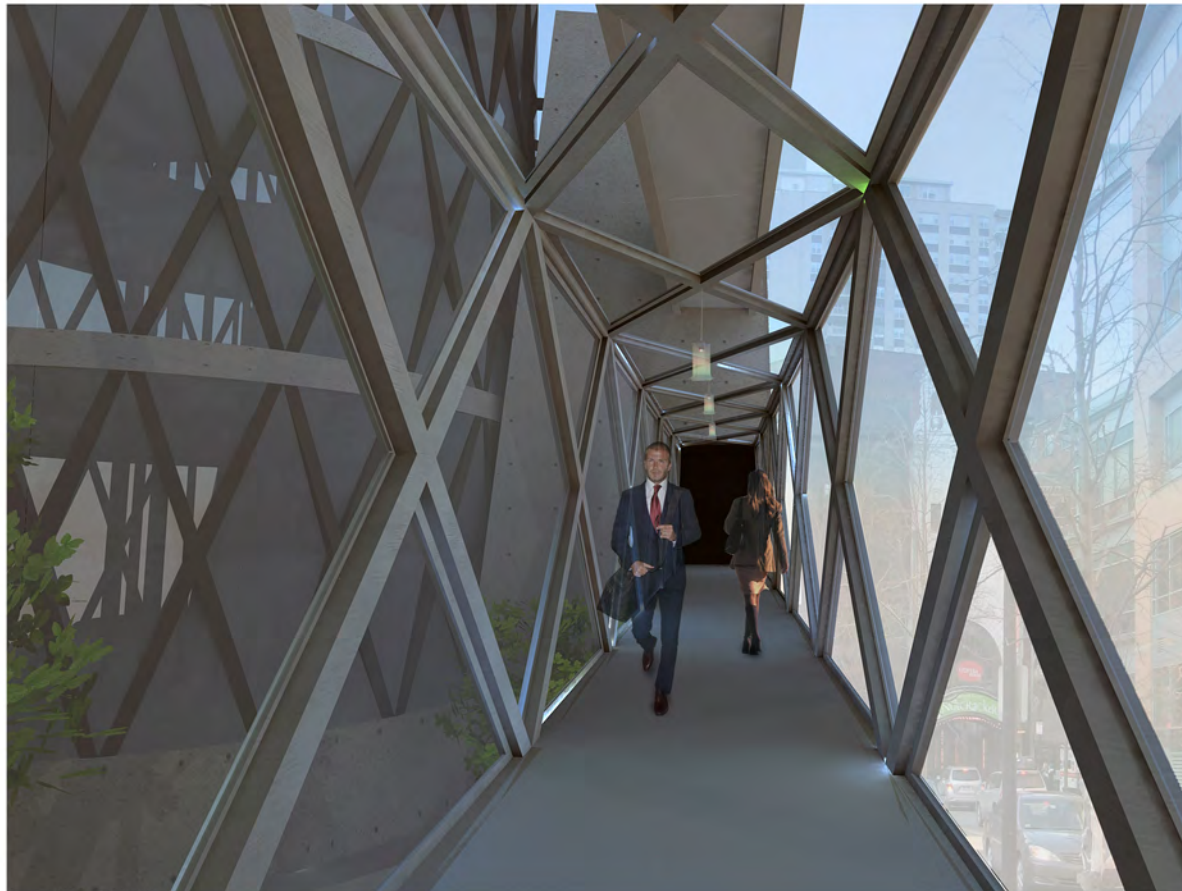
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rendering G
ARCHITECT
SCALE

entry plaza / exterior cafe seating rendering



rendering H UNDEFINED SCALE

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rendering I UNFINISHED SCALE

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upper level vehicle gallery rendering

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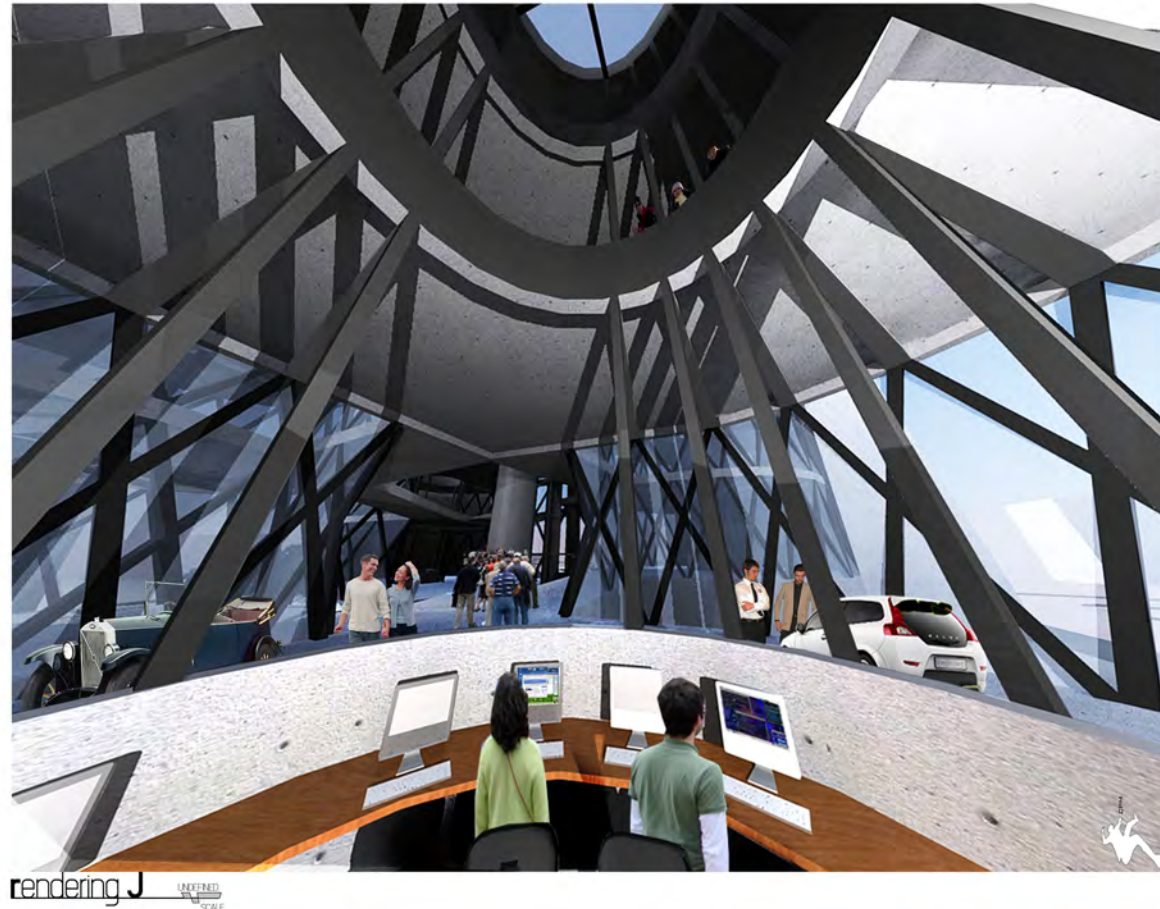
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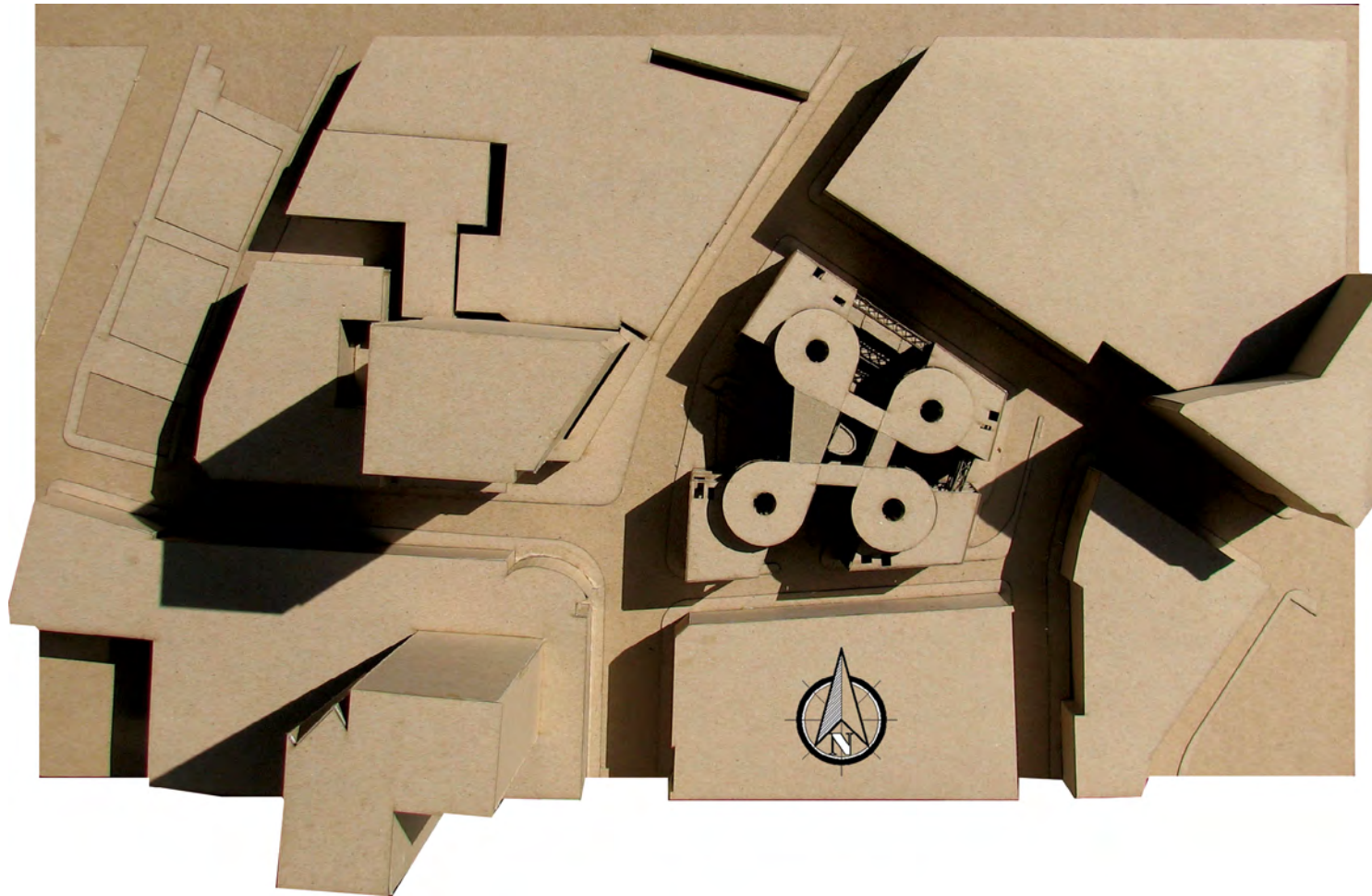
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rendering J
UNFINISHED
SCALE

computer area / vehicle gallery ground floor rendering



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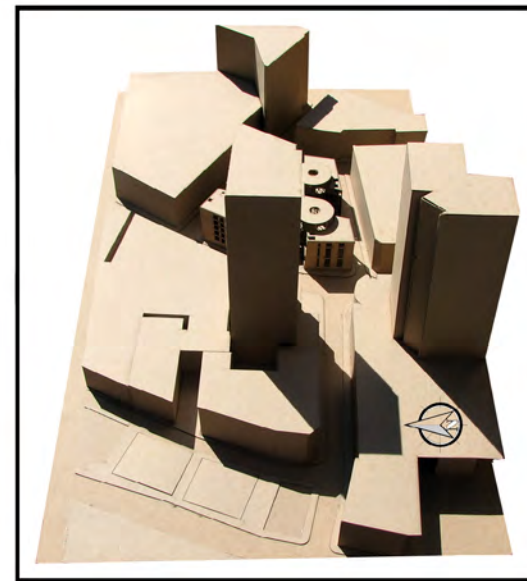
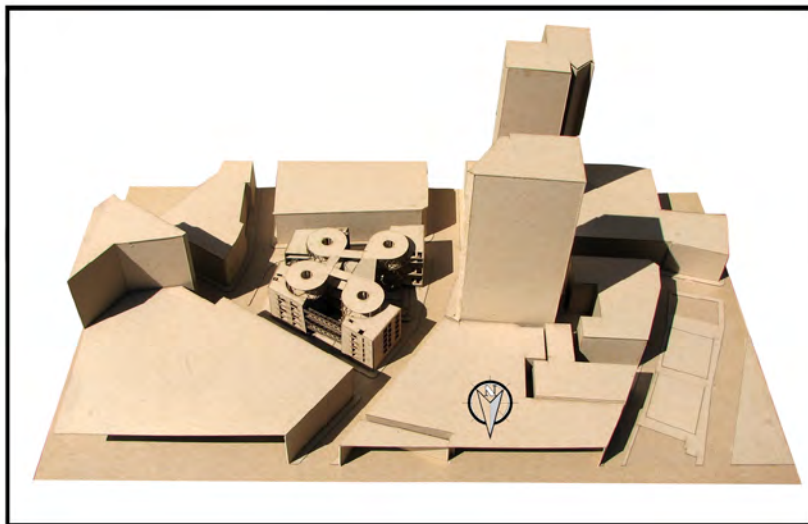
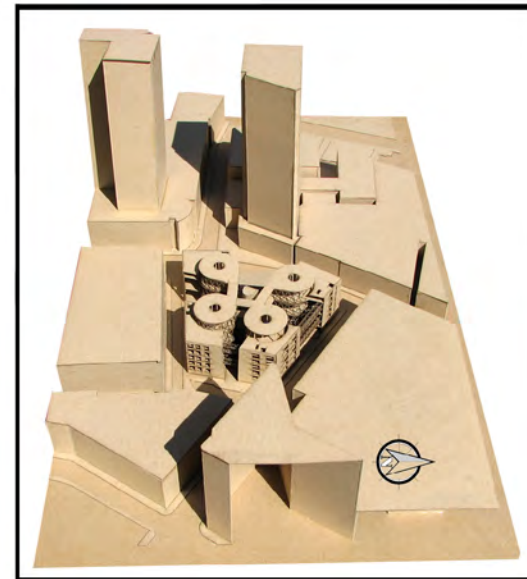
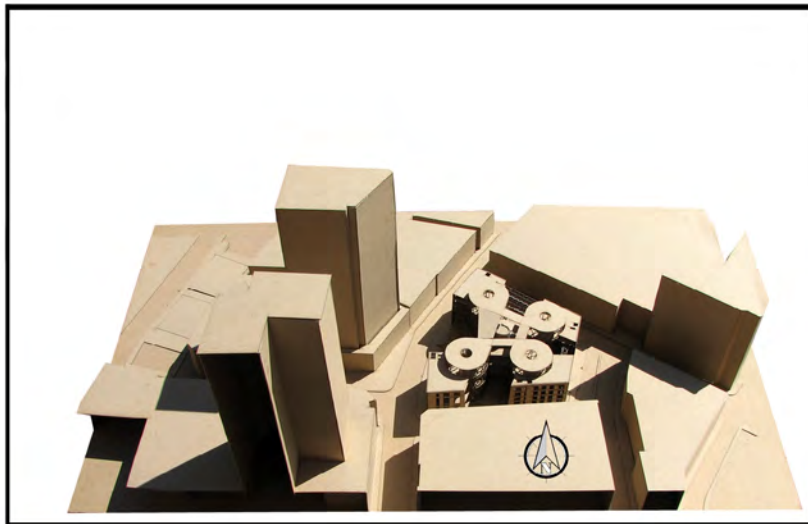
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final model aerial photo



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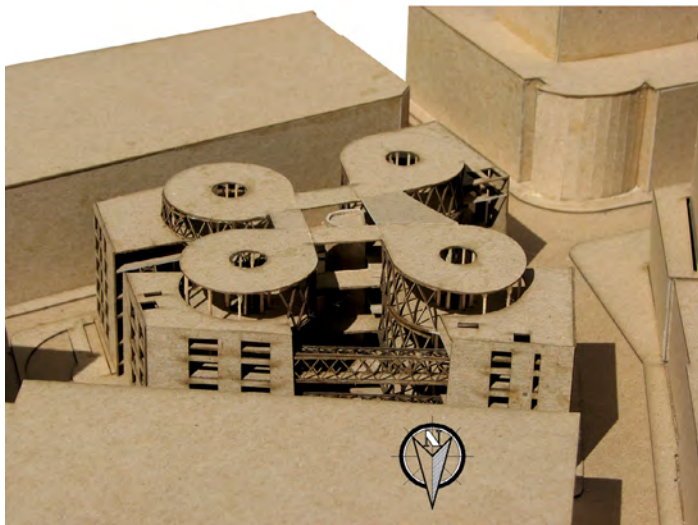
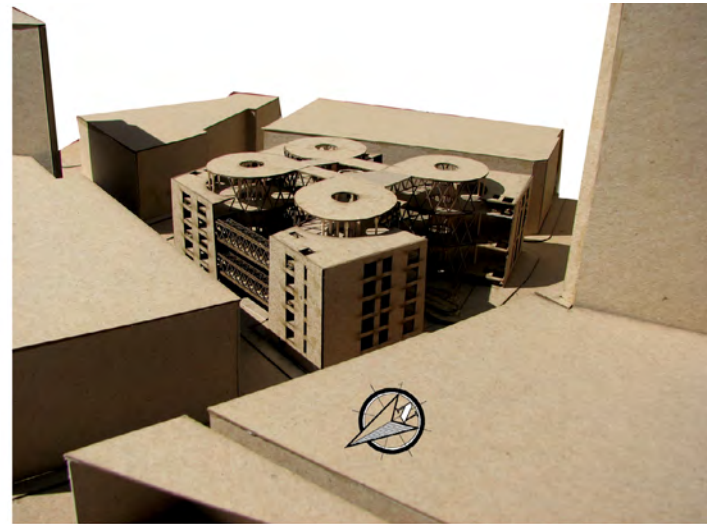
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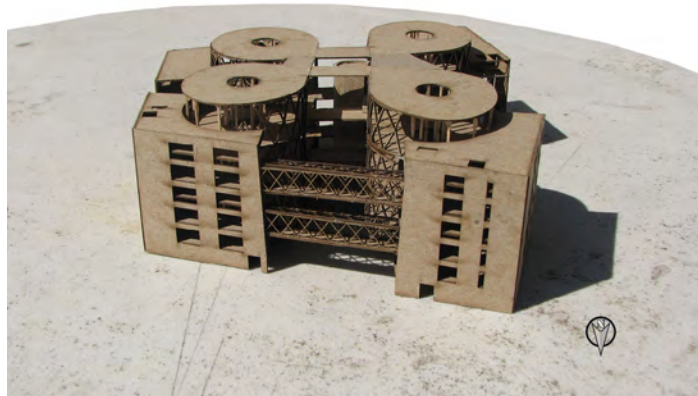
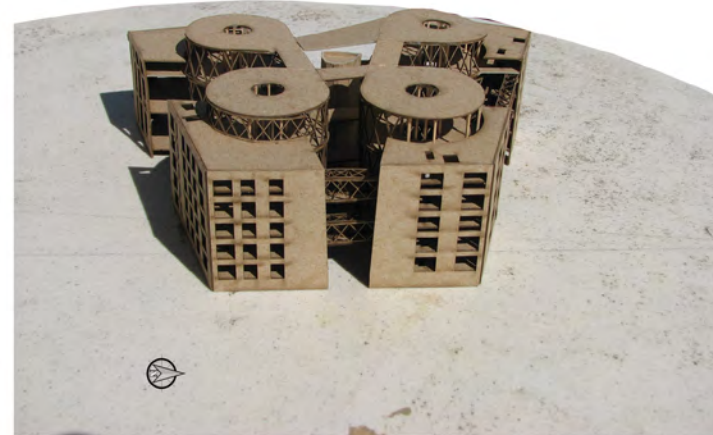
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final model photos (VMoAH removed from site context)

Norm: e's Wa nber 19 illiam A diss., U merican urret Da nah, Ge allas. " y *Affair*. Gwenda Virginia . r, Arthi Maryl nber 19 ouis Do and Hi E. Milt na Mili): 307. hester I

[bibliography]

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Architects, Garofalo. 2003. *Between the Museum and the City*. Chicago: MCA.

Krieger, Alex, David Cobb, and Amy Turner. 1999. *Mapping Boston*. Cambridge: MIT.

Lowry, Glenn D. 2005. *The New Museum of Modern Art*. New York: The Museum of Modern Art.

Van Berkel, Ben, and Caroline Bos. 2006. *Buy Me a Mercedes-Benz: the Book of the Museum*. Barcelona: Actar.

Von Naredi-Rainer, Paul. 2004. *Museum Buildings: a Design Manual*. Boston: Birkhauser.

Wagensberg, Jorge. 2006. *Cosmocaixa: the Total Museum*. Barcelona: Sacyr.

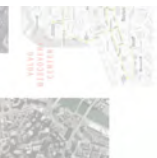
Boston Zoning Code and Enabling Act, <http://www.cityofboston.gov/bra/zoning/downloadZone.asp>



species of the carmaker's vehicle design, it provides alternative views of the car's design. The car's design is shown in a series of views, including a top view, a side view, and a front view. The car's design is shown in a series of views, including a top view, a side view, and a front view.



575 Washington
Boston, MA
-71.052 Longit
42.353 Latit



[GATE submission board]

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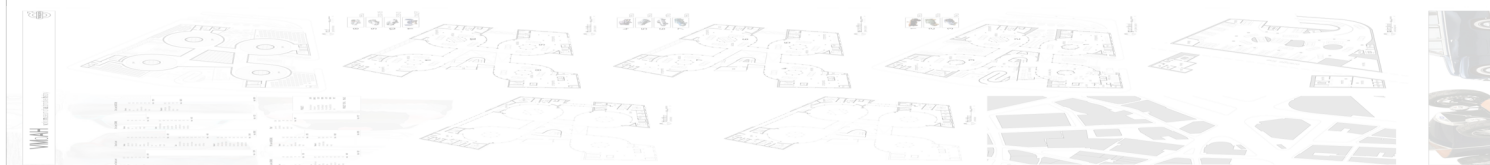
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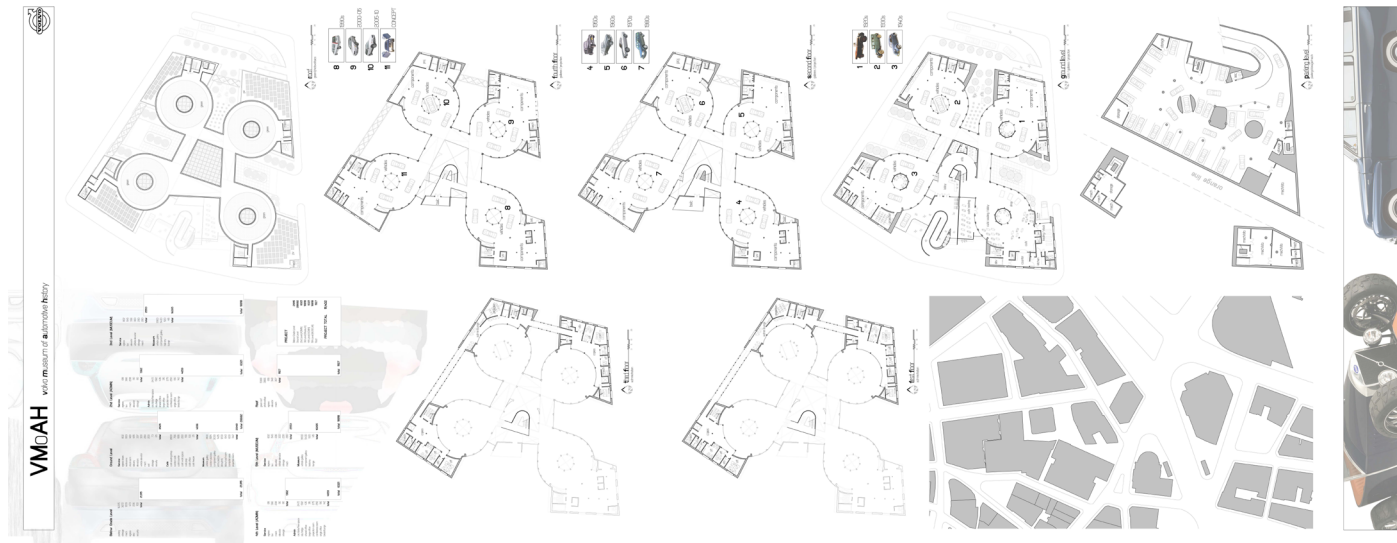
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[final presentation boards]





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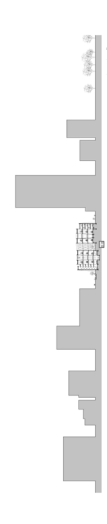
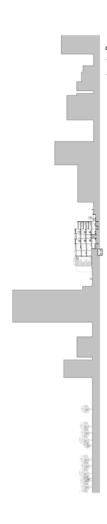
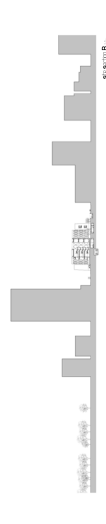
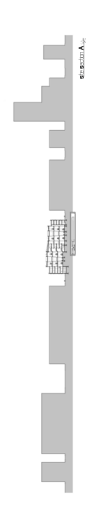
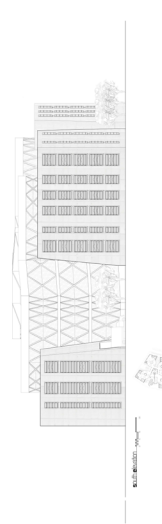
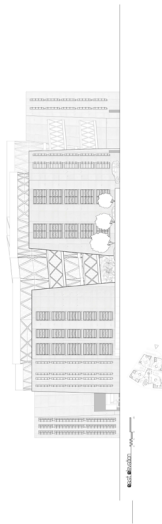
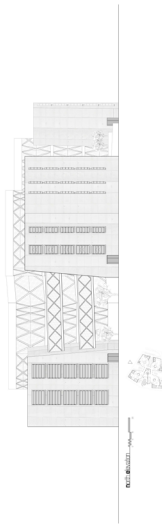
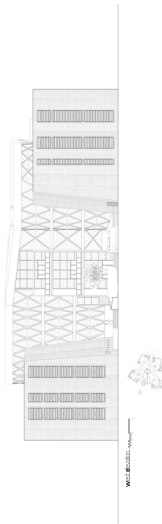
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