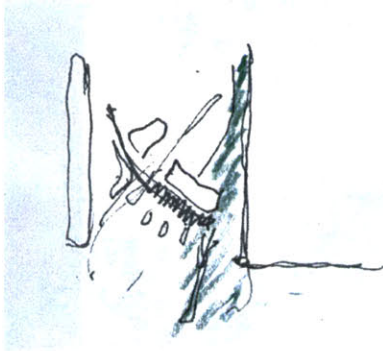


*Transitory Places:  
A Water Terminal and Immigration Station for East Boston*

by

Alison Ann Alessi

A.B. Architecture  
Princeton University  
June 1996



Submitted to the Department of Architecture in Partial Fulfillment of the Requirements for the Degree of Master of Architecture at the Massachusetts Institute of Technology  
June 2001.

Signature of Author.....

Alison Ann Alessi  
24 May 2001

Certified by.....

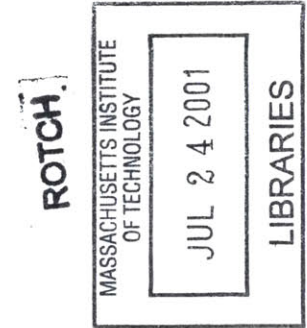
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*for my parents*

## ABSTRACT

*Between City and Water:  
an immigration library for east boston*

Alison Ann Alessi

Submitted to the Department of Architecture in Partial Fulfillment of the Requirements for the Degree of Master of Architecture at the Massachusetts Institute of Technology, June 2001.

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An experience of the water in the city is often absent today as the urban has increasingly infringed on natural environments creating a distinct separation between the two. This thesis is an architectural exploration of the transition from land and water and from water to land in the contemporary city. Using architectural space to heighten the experience of water in the city, the design intervention aspires to reconnect people with the natural aquatic conditions that surround Boston but are removed from the everyday experience of the city.

East Boston's waterfront provides a unique opportunity for development with strong visual connections to downtown Boston as well as powerful traces of a vibrant history, particularly that of immigration. East Boston was second only to Ellis Island in the volume of immigrants processed as they entered the United States. The design has a transient space, a water terminal that will both facilitate movement to and from the city as well as recall the historical memory and experience of arrival by water. The focus of the design has been the archival library in which one can engage one's own personal identity and heritage on the very site where, potentially, one's ancestors arrived one hundred years ago. Genealogical research can be conducted in the dynamic spaces above the water so that there is a possibility of overlapping past and present experiences as well as connecting people around the world via modern technologies. The library addresses the modern American identity while remembering the historical threshold to a new world that was located along the waterfront of East Boston.



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## INTRODUCTION

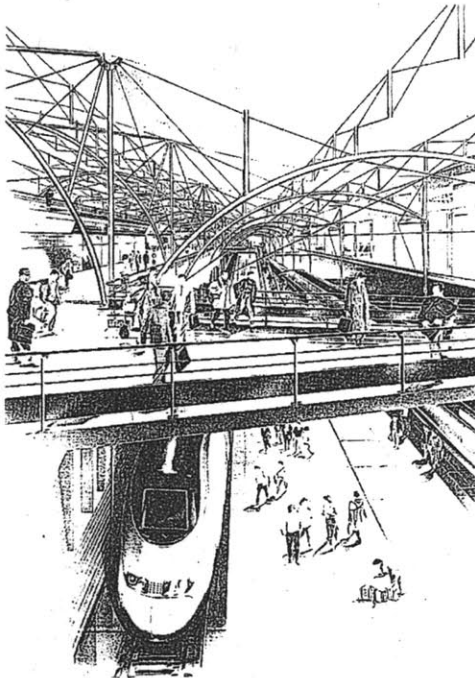


image 1. sketch of EuroTGV

### *transitory places*

The post-modern condition of 'placelessness' leaves architects as creators of space challenged. Tremendous technological advances have collapsed space. We can explore 'virtually' the vast globe from our living rooms and communicate across thousands of miles in seconds. What does this mean for architecture and for cities? Can there be a 'place' in the city that celebrates this mobility, while at the same time is a destination, or a 'place' in and of itself? This thesis will investigate these questions on an urban design level as well as in the space of a building itself. I think architects such as Rem Koolhaas have created transit places that are destinations while at the same time express a phenomenon of our specific culture by finding great pleasure and liberation in the various speeds and scales of movement possible today.

While it is possible that increased mobility makes the world more accessible, there seems to be a dearth of real places that have real meaning to people. Layers of interpretation have been stripped down to simplistic understandings so that there is little room for a meaningful interaction in cities. In a way this 'hyper-mobility' makes authentic places all the more desirable; as a simple quest for the rooted in a world where very little is anymore. Massive transit and commercial centers such as EuroTGV create a place that is meant to be moved through and enjoyed. It truly celebrates this mobility and the idea of passage in the city.

Architects today can employ greater technology and more sophisticated transit



image 2. Entrance to the subway by Norman Foster, Bilbao, Spain

modes are being developed but there still remains the essential human connection to these systems. The contemporary transit center still must act as a modern marker of motion in the city creating paths with fluid and coherent movements of people through space. Norman Foster's design for the subway in Bilbao is very simple and yet evocative, somehow expressing a dynamic connection of the street to the subterranean. That which pokes above the street surface suggests that a much more complex network lies below waiting to zip passengers around beneath the city streets. At the same time that it is exciting to move about contemporary cities, perhaps we mourn the loss of meaning and place. This displacement is occurring all over the world so that it is

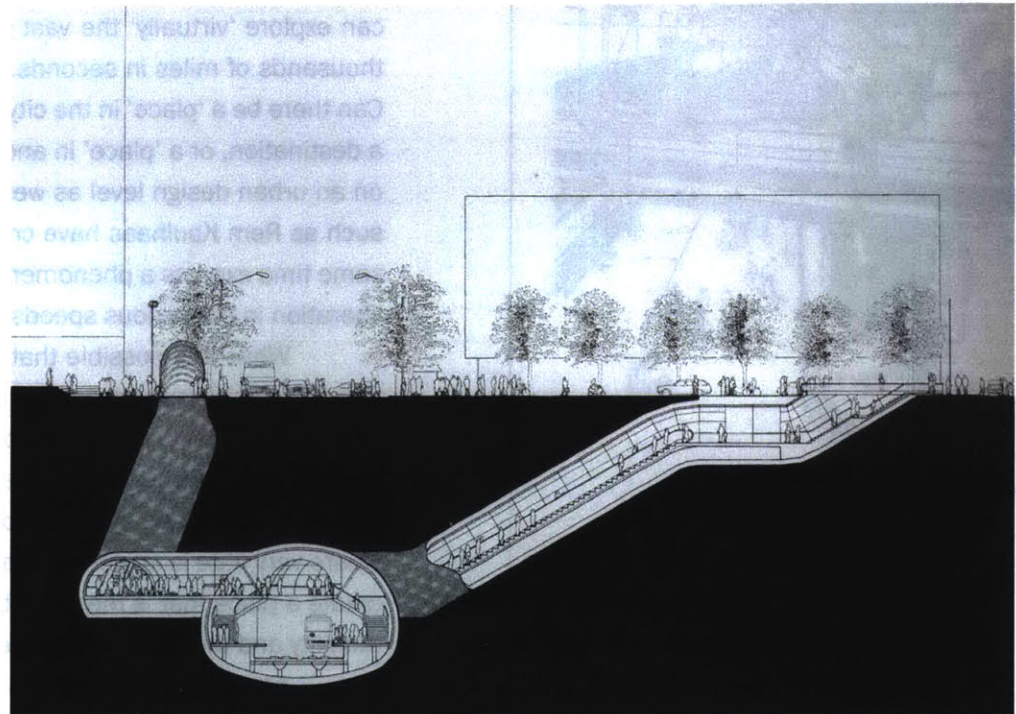


image 3. Bilbao subway section



becoming difficult to distinguish vastly separate parts of the earth. The investigation of spaces today in the city recalls Charles Baudelaire's feelings of both excitement and displacement with the onset of modernity. Empowered by the possible anonymity on Paris' bustling boulevards yet at the same time, mourning the loss of an older way of life, incongruous with the new, Baudelaire described Paris. To a certain extent virtual space challenges real space in this way. There exist overwhelming possibilities that are continually stimulating the mind but leaving the body, the experience and authentic quality of space behind. Design that heightens experiential awareness, of pedestrian movements, of the sun and shadows, of the water and of the natural ground and landscape, is a way of reclaiming authenticity and physical connection to space.



image 4. *Interior view of Eurolille*



## BACKGROUND

*"Though there were numerous vessels at this great distance in the horizon on every side, yet the vast spaces between them, like the space between the stars...impressed us with a sense of the immensity of the ocean,...and we could see what proportion man and his works bear to the globe..."*

Henry David Thoreau. *Cape Cod*. 1896.



image 1. *The Docklands, London*

## **waterfront development**

In addition to the notion of transitory places this thesis will explore the relationship of urban fabric to the water as edges in the city. I am interested in discovering a new understanding of this edge between the water and city in a contemporary space that recognizes this historical relationship without replicating it. The goal is the reclamation of the waterfront for the city and its residents as well as opportunities for tourists to engage in this reality. As the thesis is to be an expression of movement and place simultaneously, allowing both social interaction and personal reflection, the design will address these ideas on an urban and architectural level.

### **world-wide trends**

There have been a number of large-scale urban interventions that begin to rethink the waterfront in the post-industrial city. Throughout time, cities and water have been intrinsically linked as water has contributed to cities' establishments, situations and ensuing development for engineering, economic as well as inspirational reasons. Since the 1950's there have been thousands of projects around the world that focus on the redevelopment of a waterfront zones.

Viable waterfronts depend on technology. In the last fifty years this technology has changed to freight containerization thereby relegating many existing ports useless. Transportation facilities and port activities tended to be relocated away from city centers leaving large-scale factories, docks, railroad infrastructure and shipyards

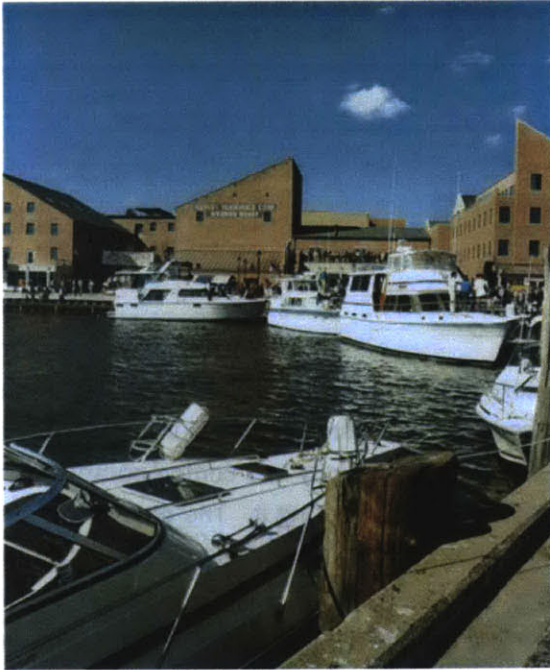


image 2. *Brown's Wharf at Fell's Point, Baltimore*



image 3. *Baltimore's Inner Harbor*

abandoned. Peter Hall describes these “abandoned doorsteps” as the zones between land and water that due to the relocation of ports have “emerged as spatial and functional vacuums.”<sup>1</sup> However, one advantage of this relocation is the availability of large relatively cheap land along the water with little displacement of residents or effect on established neighborhoods.<sup>2</sup>

Therefore new waterfront projects have been created ranging in scale from small parks to enormous infrastructure, planned neighborhoods and commercial centers. The results of these relatively recent efforts have been met with varying degrees of success. The United States and United Kingdom have led the way in this difficult task of updating waterfront images from deteriorated and abandoned facilities on polluted bodies of water to new commercial and recreational centers to be enjoyed.

Changing values in the 1970's that led to an environmental movement of sorts in the United States led to federal money being allocated to clean major bodies of water often located in city centers.<sup>3</sup> Naturally, environmental efforts in the purification of urban waters have also given new importance to cleaning and updating the land directly around it. Therefore in the last thirty-five years environmentalist have helped to spawn waterfront development by intensifying interest on the polluted waters in cities and thereby the city edges on these waters.

These emerging projects along the waterfronts have had the affect of reintroducing the experience of the horizon on water into the contemporary city. Development along water can preclude a real interaction with water by the city inhabitants by blocking. Water is absent from everyday reality of city dwelling. Unfortunately, the available and inexpensive land on urban waterfront in the 1950's was often taken to make interstate highways that connected through cities.<sup>4</sup> The Big Dig today is trying to rectify this mistake. However, the waterfront parkways for automobile traffic like Storrow and Memorial Drives of Boston and Cambridge demonstrate this as intense vehicular traffic blocks access to the water. Boston has claimed the space between the road and river as park although it is often thin and difficult to get to from the urban fabric. Slowly steps are being taken to reclaim and reconnect to the tenuous urban tissue severed by

these incisive perimeter roads.

Despite the great potential of connecting cities and their inhabitants to water there are a number of problems. Vast financial development can lead to gentrification and little has been done to enfranchise poorer city residents so while the city is cleaned-up and primed for tourist activities there is a loss working-class jobs. Often dislocation of neighborhoods is unnecessary because waterfronts have tended to be used for industrial uses or disconnected to the city. The impact is minimal from this respect. There are though, residential neighborhoods near ports that historically were working class and often foreign-born, whose inhabitants found work at the thriving ports. These neighborhoods should benefit from waterfront development but often do not. Creating expensive housing and attracting tourists does not benefit less fortunate urban inhabitants of cities who often have little opportunity to avail themselves of waterfront amenities.

Some attempts at reconfiguring waterfront industrial zones in this post-industrial age have been necessary steps are unconvincing despite praise. For instance, Baltimore's Inner Harbor was reactivated by a surge in development but Baltimore's Inner Harbor generated gentrification in become merely a new tourist center with high-end residential units. It is important that evaluation of 'success' takes into account more than just financial success. Questions need to be raised about the audience of these new urban waterfront developments.

Another problem with recent waterfront constructions are the creation of 'Disney-inspired' themed waterfronts which is not necessarily the intention of reclaiming industrial port lands. There has been since the 1960's a certain historic preservation movement that has sought to restore historic urban waterfronts.<sup>5</sup> This raises the question of authenticity. However, these historical malls and festivals seem to be more financially viable. New York's South Street Seaport involved the re-creation of an historic tableau that forced an historical image of a site so strongly that any alternative readings are impossible.<sup>6</sup> Furthermore, the commercial activity associated with the site makes it a mall, with the same stores and shops found anywhere around the



image 4. South Cove at Battery Park City, New York. Remnants of existing piers remained along the water's edge.



image 5. Water used along walkway, Sydney, Australia



image 6. View of container activity provide, Vancouver

country. Large-scale commercial developments have little to do with the residents of a city nor the movements that occur within it.

The clear separation of new viable ports with older port infrastructure does not seem to be a real answer. While drawing a line can facilitate zoning of sorts, the idea of 'hiding' the real inner workings of a port city does not seem logical. Venice is clearly a unique place, a true city of water. However, in an effort to preserve what was, the real city, Mestre was relocated away from the fragile lagoon. Now what remains is a city for tourists as well as a messier more industrial city with real inhabitants. This remains a complicated situation, but I think advocating for an attempt at reconfiguring what was within the context of a real working port is better than simply separating the two. The mixing of still-viable port activities such as fish markets and even container freight loading and unloading and cruise ship docks with newer waterfront interventions seems essential. Allowing engagement with these activities instead of blocking or relocating them will keep waterfronts alive and active.

The key to redeveloping along the waterfront seems to be integrating tourist and resident uses so that all can benefit from financial gains. Designs that allow interpretation, of layers and traces that serve as guides and are not forced but let the city narrate will make the waterfront accessible for all. Good designers will recognize existing patterns of movements, from streets to pedestrians and will enhance them. There is a tremendous potential to reintroduce consciousness of water into the everyday life of city residents. To enhance the natural environment in the urban realm is to intensify a truly powerful experience.

(Endnotes)

<sup>1</sup> Peter Hall. *Waterfronts: A new urban frontier*. (Berkeley: Inst. of Urban and Regional Development, May 1991) 6.

<sup>2</sup> Ann Breen and Dick Rigby. *A New Waterfront*. (New York: McGraw-Hill, 1996) intro.

<sup>3</sup> Ann Breen and Dick Rigby. *Waterfronts: Cities reclaim their edges*. (New York: McGraw-Hill, Inc., 1993) 14.

<sup>4</sup> *ibid.*, 13.

<sup>5</sup> *ibid.*, 15.

<sup>6</sup> Christine Boyer. "Cities for Sale: Merchandising History at South Street Seaport." *Variations on a Theme Park*. ed. Michael Sorkin (New York: Hill and Wang, 1992).





*"Despina can be reached in two ways: by ship or by camel. The city displays one face to the traveler arriving overland and a different one to him who arrives by sea."*

Italo Calvino. *Invisible Cities*

## **water transportation**

Throughout the world cities are rebuilding along their ports. As the infrastructure and industries located on these waterfronts are increasingly becoming archaic and relocated outside of the city, planners are realizing the value of the sites located along waterfronts to rebuild and reconnect cities to water. Out-of-date infrastructure needs to be revitalized to serve the modern city. Not only does this rebuilding make sense in terms of utilizing vast spaces that are often derelict, but transportation on water makes sense as it uses existing natural resources as travel surface. Congested roads make travel to and from, as well as within, a city often unpleasant and unnecessarily so when there exists harbors, rivers and waterways that can quickly connect commuters and tourists alike to downtowns from outlying areas. The Port Authority of New York conducted a study that reports that a ferry system transporting 4500 passengers per hour, such as the one connecting Staten Island and Manhattan, gives off 1/14,000 the amount of exhaust of the cars needed to do the same.<sup>1</sup> Facts like that make the move to water transit seem all the more ecologically imperative.

Technological advances and necessity of intermodal connections to increase urban mobility further compel cities to examine the possibilities of water transportation. Tremendous potential awaits cities that can imagine travel on ports, rivers, lakes and seas. These very water elements often contributed to cities' establishments, but have been relegated to the background with industrialization along them. Existing public transportation systems need to connect with water transportation making



image 1. View of Sydney Harbor

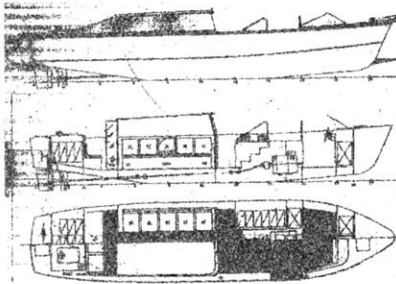


image 2. *Electric Vaporetti used in Venice*



image 3. *Riverbus used in London along the Thames*



image 4. *High-speed hovercraft used from Hong Kong to Macau*

interchange between the two easy and efficient. Opportunities exist to reconnect, making this once essential experience of water in the city readily available again in conjunction with efficient and environmentally sensitive water transportation.

### **environment & technology**

New technologies in boat design have enabled cities to overcome historic problems of water transportation. Recent technological advances are being utilized in the fragile lagoon of Venice to minimize boat waves that have damaged buildings along the canals. While perhaps Boston Harbor is not so threatened by this particularly sensitive problem, boats that would have a minimal impact on the already polluted waters are most desirable. Furthermore, advances involving electric boats and natural gas fueled boats, again used in Venice are significantly decreasing the environmental impact of water traffic. High-speed hydrofoils and other types of ferries are making water transportation more efficient and desirable for commuters. In Hamburg, Germany engineers developed a water taxi that is solar powered and requires only a one person crew.<sup>2</sup> In short, by using faster, more-efficient and more-renewable sources of energy that can operate on naturally occurring waterway and bays, water transportation can now be quieter, faster, more convenient and better for the environment than it ever has been before. If it is possible to entice commuters to travel by water, reductions in the volume of pollution in the air, roads and built environment could grow to be significant.

### **typological investigations**

Historically, transportation centers have played essential roles in cities' existences and everyday life. The architects though, attempted more – to express the technology of the age. The great railroad halls of the early industrial age are the most illustrative example of symbolic transit spaces although today they no longer express the 'spirit of the age.' Stations like New York's Grand Central or London's Victoria triumphantly announce the arrival of the train to the center of the city. These soaring space were hailed as modern cathedrals to industry. The station played an important part in the city in terms of moving people. But even more than that the complicated and multi-functional space within the station were clearly destinations,

like public squares and markets in the pre-industrial city. Train stations became commercial centers full of people, not just transients moving into and out of the city.

Like train stations before them, airport terminals developed into contemporary thresholds into the city. But even more than that, the playful forms of the 1950's especially by Eero Saarinen evoked the art of movement itself. Glass and aerodynamic shapes express movement and the aerospace technology. Unlike land transit centers, airports are not generally not located in city centers and do not play as complex roles in the urban fabric. They tend to be located out of the city and occupied by travelers only. They are not necessarily destinations themselves but a site to be moved through. Despite that the often long periods of time spent waiting make it a 'place' of sorts. The acceleration of movements in a more modern age resulting in the loss of 'placemaking' in airports. They are often impersonal and yet they are overwhelmingly the gateways to cities and countries providing first glimpses and impressions.

Today technology has exploded and these train stations are still viable but their symbolic forms are strong reminders of our industrial past. But our mobility today cannot even compare with what existed even fifty years ago. The advent of the Internet has made our world increasing small and easier to transverse in a matter of seconds. This 'hyper-mobility' perhaps describes the 'spirit of our age.' Telephones, computers, music players are all completely without site now and able to be moved with a person. Likewise, air transportation has enabled people to move about the country and world at startling speeds. How can this phenomenon be expressed in built form?

Transit centers today can offer both opportunities to move quickly through and to linger and interact. Situated within the city so as to celebrate the contemporary phenomenon in which various means of transport at different speeds come together, terminals express how cars, trains, subways, pedestrians can flow smoothly through spaces, interacting or not with one another and the spaces around them.

### **terminal design**

As the mediator negotiating two vastly different realities: land and water; the terminal becomes extremely important as the transition point. Moving passengers



image 5. *Kasai Kinkai Park waterbus landing, Japan.*



image 6. Water transport in Boston Harbor to Logan Airport provided by Massport

smoothly and safely from water transport to the land transport systems remains the obvious goal. Clear communication, easy flow of circulation, strong forms and ramps make this transition more powerful and easily comprehended by the passenger.<sup>3</sup> Beyond these pragmatic considerations transportation planners and architects express this dialogue between land and water poetically and invite passengers to participate.

I have discussed various speeds of movement and the potential of pedestrian, boats, bicycles, cars, subways and buses converging on a terminal. The average pedestrian flow of volume is 10-15 pedestrians per foot width of walkway or pier per minute. Their average speed is 200 - 230 feet per minute. The average pedestrian area can occupy 10 - 15 feet per person.<sup>4</sup> These rates of flow are essential for designers. There are a number of different speeds and modes to consider though besides just the person. The boats, bikes, subway and car all move at different rates, and thereby must be accommodated in the design.

#### **water transportation in boston**

Water transportation has long been a logical and popular means of moving about the city of Boston. The first ferry established was from Boston to Charlestown in 1630, the revenues of which went to support Harvard College.<sup>5</sup> Since then various means of connecting Boston's Inner Harbor and surrounding areas have been attempted including ferries, bridges and tunnels. In a study in 2000, the Boston Redevelopment Authority (BRA) found that though existing water transportation is not as developed or as successful as it could be, in the next ten years the ferry ridership could expand significantly. There is huge potential for growth seen in market demands for existing and new services for all routes. This includes both Inner and Outer Harbor routes for commuter and tourist/seasonal water transportation whose passenger numbers could be as much as triple.<sup>6</sup>

There are a number of different private and public ferry companies currently offering both commuter and tourist services within Boston Harbor. The scales of these services as well as the water vehicles themselves vary from enormous cruise

ships at the Black Falcon terminal docking once a week seasonally to the compact water taxis carrying but a few passengers at a time from Long Wharf to Logan Airport every fifteen minutes. These differences make the seascape, if you will, in Boston Harbor extremely varied but seemingly disorganized. It is my hope that through some urban analysis I can attempt to reconfigure a system on a small scale and develop in greater detail one water terminal at East Boston's Pier 1. An overarching plan developed that understands these various scales and paths could be crucial in establishing a unified vision for Boston's water transportation future.

Inner Harbor services offered to the daily commuter are associated with connecting to and from Logan Airport more than any other destination. Lovejoy Wharf at North Station, Pier 1 at the Charlestown Navy Yard, Logan Airport, downtown at Rowe's Wharf and Long Wharf, Fan Pier serving the Federal Courthouse and the World Trade Center are all served by regular water transportation thereby connecting the Inner Harbor to a certain extent. There is a demonstrated attempt at intermodality with Lovejoy Wharf at North Station, a terminal for subway, commuter rail and Amtrak lines to the North. South Station, situated along the Four Point channel has opportunities to connect rail travel as well as bus to the south at nearby Russia Wharf. There should be more opportunities for residents of existing waterfront neighborhoods of Charlestown, East Boston and South Boston to connect to downtown. It appears that existing services cater toward professionals working in the Financial District and regularly connecting to and from Logan Airport. However, there is a potential to serve city residents that needs to be explored.

Outer Harbor ferries connect the south shore communities of Hingham and Quincy to downtown Boston and Logan Airport without the hassles of a slow commuted on the over-traveled Southeast Expressway. Over half a million passengers ride the Hingham ferry service operated by the MBTA.<sup>7</sup> There are opportunities to connect other North Shore and South Shore coastal communities to downtown Boston, as vehicular traffic becomes increasingly frustrating and impossible. There are seasonal operations to the north to Salem and Gloucester as well as to the

### Existing Inner and Outer Harbor Water Transportation

**Commuter Service -- operating year round**

servicing:	schedule	# of runs
Hingham to Rowes Wharf	daily	20
Quincy to Logan & Long Wharf	daily	23
Pier 4/Navy Yard to Long Wharf	daily	37
Hull to Long Wharf	5x/week	
Rowes Wharf to Logan	daily	56
Lovejoy to Fan Pier to World Trade Ctr.	5x/week	21
Long Wharf to Logan	daily	
Lovejoy to Pier 4/Navy Yard	5x/week	24

**Seasonal Service -- operating April to November (approx.)**

servicing:	schedule	# of runs
Salem to Long or Rowes Wharf	5x/week	
Long to Rowes to Pier 1/Navy Yard	daily	
Water taxi to landings Inner Harbor	daily	on call
Long to Pier 4/Navy Yard	daily	
Downtown to Harbor Islands	daily	8
to Provincetown, Cape Cod	daily	2

image 7. Chart of existing water transportation in Boston Harbor

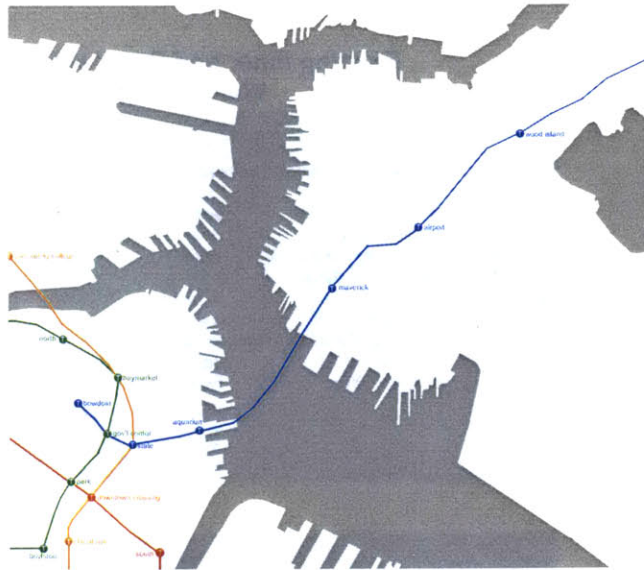


image 8. Existing subway transportation, Boston

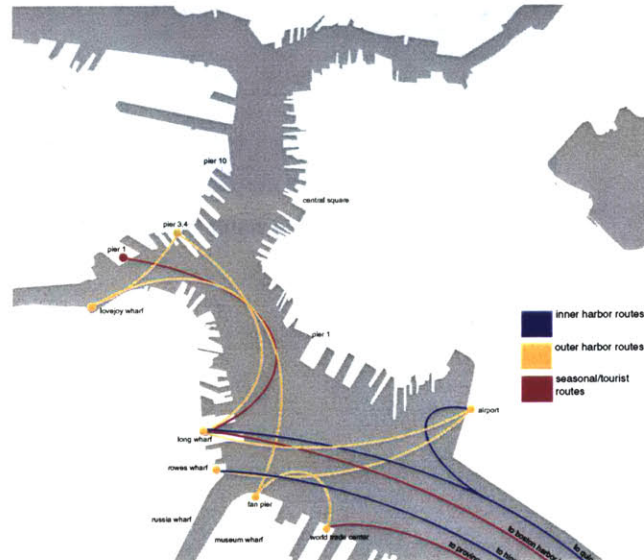


image 9. Existing water transportation, Boston Inner Harbor

south to Hull. Most all seashore towns in Massachusetts' North and South Shores have harbors that could easily accommodate a commuter transportation service. Though fewer opportunities exist today to commute by water, those who do remain devoted to their means of transport.<sup>8</sup> As frustration with existing highway traffic increases, so to may demand for water transportation.

Tourist and seasonal water transportation include a vast variety of excursions, boat types and routes. Outer Harbor routes include ferries to Provincetown on the tip of Cape Cod, a commuter ferry from downtown to the north to Salem and south to Hull, as well as the National Park Service to the Boston Harbor Islands. Inner Harbor routes include sightseeing cruises along the waterfront with stops along downtown wharves, the Charlestown Navy Yard, the USS Constitution, the World Trade Center among other Inner Harbor Sites. In warmer weather water taxis are also available serving a number of different wharves around the Inner Harbor in particular to the airport. There is great potential for expanding seasonal water transportation as well. Connections to Gloucester, Rockport and beaches to the North as well as Plymouth and Cape Cod to the South could be wonderful alternative to driving.

Although they are not transport per se, excursion boats which take passengers and return them to the same point are also part of the waterscape of Boston Harbor. Largely seasonal trips, these various routes serve both the Inner Harbor as sightseeing trips as well as the Outer Harbor in the form of whale watching and deep seas fishing excursions. There are some 20 or so Boston based companies that range in scale from the Spirit of Boston, a dinner cruise boat that can accommodate up to 600 passengers to AIA Yacht Charters that offer sailing trips for parties of up to thirteen passengers.

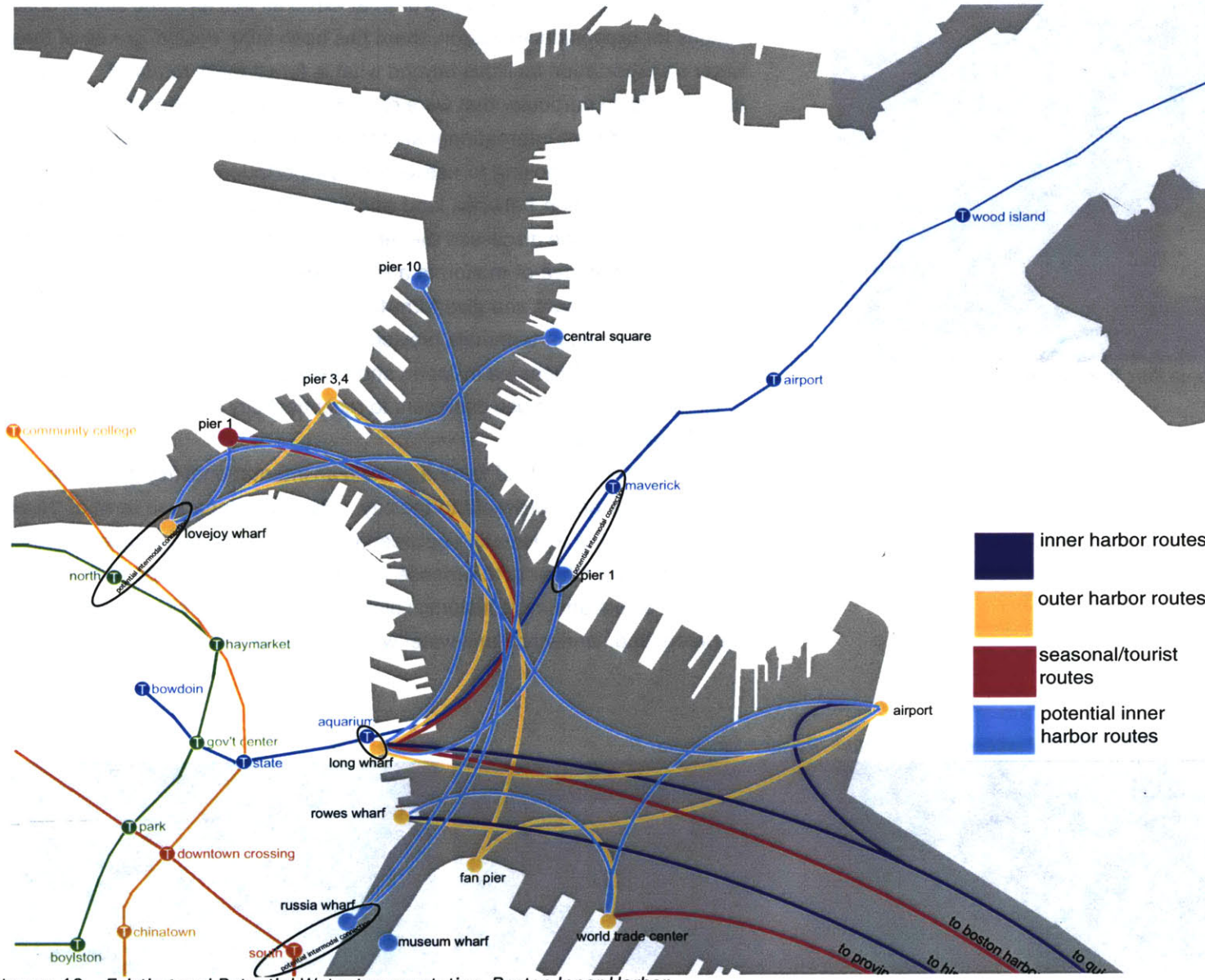


image 10. Existing and Potential Water transportation, Boston Inner Harbor

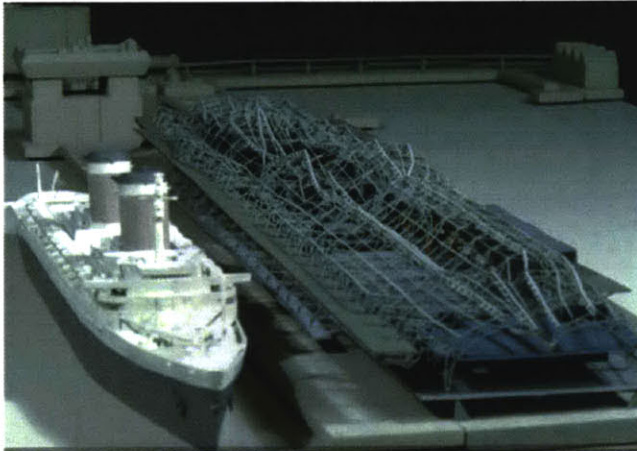


image 11 *Yokohama Port Terminal model, Reiser + Umemoto*

This has been an analysis of what exists as well as some simple observations for expansion. In Boston, there has been little 'design' per se of these water transportation facilities beyond what is functionally required. There are two projects, in particular that were examined to suggest what could be. Both involved prominent international architects designing major water land interchanges for cities looking to use water transportation both to re-establish a forgotten connection between land and sea, and to efficiently connect their city by water. I have discussed the terminal design and exciting opportunities to represent the idea of motion in a transit station. In addition to expressing an idea of movement and give form to the idea of urban mobility these new water transportation terminals provide a vital link between urban fabric and the water. Both Yokohama in Japan and Thessaloniki in Greece are examples of cities attempting to use designers to reconnect city and water.

#### **yokohama, japan**

In 1994 the city of Yokohama held an international design competition for a pier as a new threshold to the city. Using the Japanese term of 'Ni-waminato', meaning a mediation between garden and city, the competition committee invited architects to propose an international exchange at Osanbashi Pier, the oldest and most historical pier in the city. In this site the interchange between land, landscape and water was to become paramount for the design-

image 12. *Yokohama Port Terminal sections and structure, Reiser + Umemoto*





ers.<sup>9</sup>

The Reiser + Umemoto project describes the pier as shed while integrating park throughout the section and especially on the roof. The 'shed' has a dynamic three-hinge arch whose form changes along the length of the pier. Greg Lynn's project emphasizes the fluid movement between water and land as well as between city and garden. In this case the terminal is a tube with incisions of landscape to be experienced as one progresses along the space.

The winning proposal by Farshid Moussavi and Alejandro Zaera-Polo of the Foreign Office Architect attempted to merge the movements of local Yokohama inhabitants with those of visiting foreign tourists. It is essentially an organizer of flows. The scale of the project is large, and needs to be both to receive the enormous cruise ships and to establish a new identity for the city of Yokohama. It's interesting that these three projects have a linear form along which the transformation from water to land and land to water is registered.

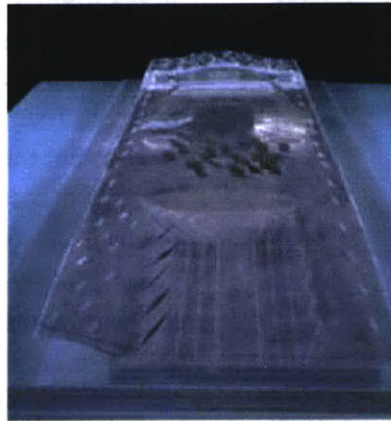
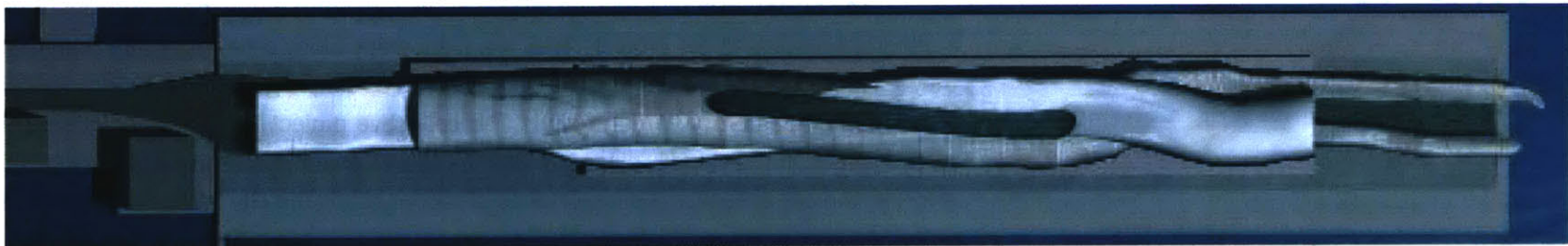


image 13. *Yokohama Port Terminal model, Foreign Office Architect*



image 14. *Yokohama Port Terminal model showing roof garden, Foreign Office Architect*

image 15. *Yokohama Port Terminal model, Greg Lynn Form*



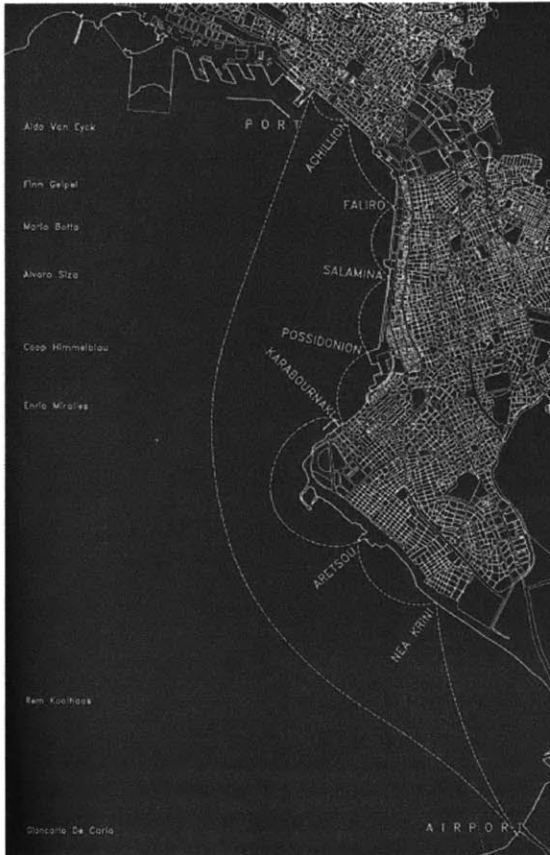


image 16. Site plan showing the eight piers, Thessaloniki

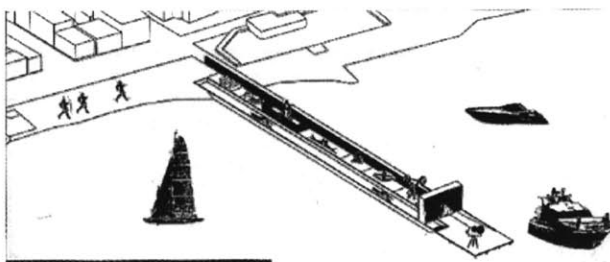


image 17. Pier for Thessaloniki, Rem Koolhaas

## thessaloniki, greece

The city of Thessaloniki in Greece, spread along a wide bay on the Aegean Sea, invited eight European architects to design a pier each along the city's waterfront. Traditionally Thessaloniki had had as many as twenty piers connecting different sites along the bay but this way of life, of travel by water, has changed. While partly a pragmatic problem of reorganizing the waterfront, the design problem given to each architect was relatively simple: express the relationship of the city to the sea. While there was an existing urban fabric to which these piers could connect, in some way the design problem was posed in a more poetic way. The city planners showed great foresight in allowing these architects play such an important role in what was largely considered a planning, environmental and public works project. They consciously removed the distractions of financial demands, and allowed the architects to interpret freely this boundary between water and land today. In this respect the project is remarkable.

Although these eight piers serve a great transport purpose, connecting across the bay from the airport to downtown in twenty minutes, they continue to be much more, and stronger as poetic expressions. The eight piers vary tremendously and yet are cohesive. Rem Koolhaas' pier acts as a contemporary marker of exchange and movement in the city.<sup>10</sup> While Alvaro Siza's intervention is a simple expression of two divergent paths of arrival and departure that share the same structure form and language. One for landing in the city the other for arriving to the water.<sup>11</sup> Coop Himmelblau use the metaphor of a wave itself as pier. The quiet motion of the sea, force of nature meeting the city constantly pounding, usually relatively calm, though sometimes violent, but a constant force, the movement of the water.<sup>12</sup>

Their location simply spaced maybe 30 meters apart along the waterfront bring a coherent reading to the project. They are eight stops along a bay but more than that they serve to connect the bay and the city. Yet, read as simple gestures the piers enable a true contemplation of sea and city. The collective project for Thessaloniki's eight piers resulted in individually elegant solutions as well as an impressive and successful effort by the city to realize the importance of reconnecting the city fabric with the water

for historical, social and environmental reasons. The result was delicate and sensitive interventions that allow a heightened awareness of the historic relation between land and sea in Thessanoliki as well as allowing contemporary interpretations to occur. Different than the Yokohama Port project in scale and number of interventions, the Thessanoliki project is a more refined—an overarching plan— whereas the Yokohama Port Terminal is a singular new identifier for the city. Both show innovative ways that designers can rethink water and transportation in the urban realm.

image 18.  
*Sketches for a pier in Thessanoliki, Alvaro Siza*

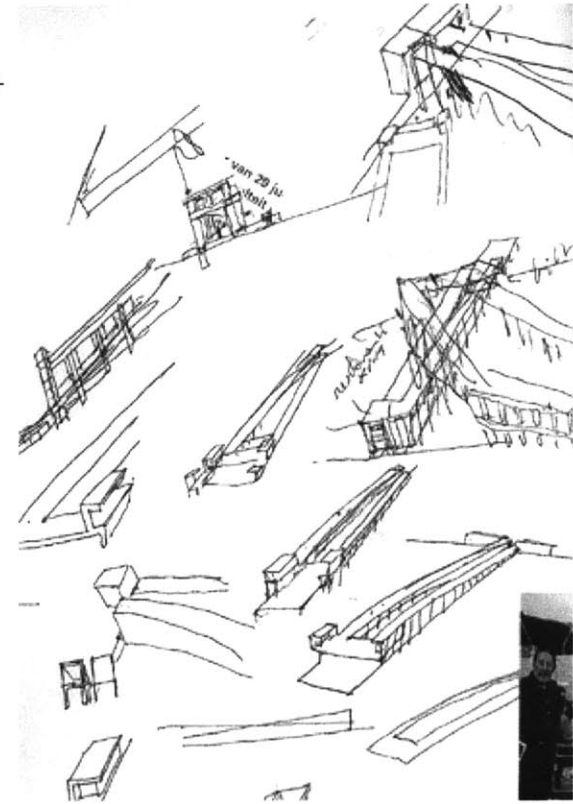
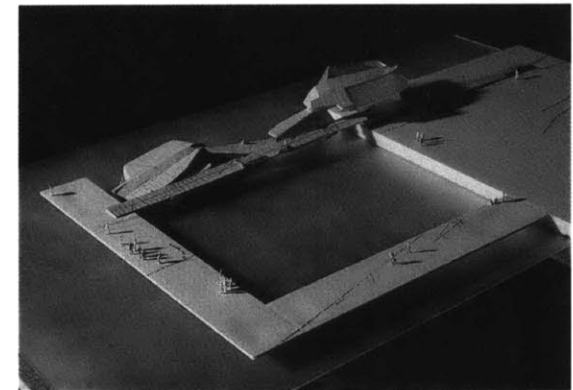


image 19.  
*Model for a pier in Thessanoliki, Coop Himmelblau*



**(Endnotes)**

<sup>1</sup>Rinio Bruttomesso, ed. *Cities on Water and Transport*. (Venice: Cities on Water, 1995) 18.

<sup>2</sup> *Aquapolis*. New Ferries for Waterborne Transportation. June 2000.

<sup>3</sup> Frank Height and Roy Cresswell, editors. *Design for Passenger Transport*. (New York: Pergamon Press, 1979) 109.

<sup>4</sup> Bruttomesso, Rinio. editor. *Land Water Intermodal Terminals*. (Venice: Marsilio Editori, 1998) 99.

<sup>5</sup> *Boston Inner Harbor Passenger Water Transportation Plan* (City of Boston: BRA, January 2000) 2-2.

<sup>6</sup> *Boston Inner Harbor Passenger Water Transportation Plan* 2-7.

<sup>7</sup> *Boston Inner Harbor Passenger Water Transportation Plan* 2-10.

<sup>8</sup> Martha A. Reardon. "Water Transportation and the Urban Environment." *Cities on Water and Transport*.

<sup>9</sup> <http://www.city.yokohama.jp/me/port/general/syourai/index-e.html>

<sup>10</sup> Sabine Lebesque. editor. *Between Sea and City: Eight piers for Thessaloniki*. (Rotterdam: NAI Publishers, 1997) 126.

<sup>11</sup> *ibid.* 79.

<sup>12</sup> *ibid.* 94.

*"Whenever in the world...a city has provided opportunities for people to walk and sit under pleasant conditions where they can watch the water and the life upon it, where they can enjoy the breadth of outlook and the sight of the open sky and the opposite bank and the reflections in the stream, the result has added to the comeliness of the city itself, the health and happiness of the people and their loyalty and pride."*

Frederick Law Olmsted.



image 1. Satellite view of Boston Harbor

## **boston harbor**

### **history of the port**

One of the oldest ports in the Western Hemisphere, Boston Harbor was a natural resource for its inhabitants as early as the thirteenth century. Native American tribes used the strategic harbor for trading and settlement, as it was naturally well protected and conducive to trading. Boston's peninsula was known as 'shawmut' by the natives, meaning "living waters" indicating the close relationship between life and water.<sup>1</sup> When European settlers arrived in 1630 to form the Massachusetts Bay Colony the naturally existing port helped Boston to develop quickly into a busy international trading center. As the colony and port grew a shipbuilding industry emerged, as did new trading routes with other colonies as well as to Europe. In the 17<sup>th</sup> century Boston was the most active and largest port on the Atlantic Ocean. Independent Boston traders sought to improve their fortunes by expanding their trading routes. The result was the notorious "triangle route" in which sugar from the West Indies was brought to Boston to make rum which was consequently sold in Africa for slaves. This wildly profitable endeavor created conflict with England who wanted to trade exclusively with her colonies. This hostility escalated to the Revolutionary War that included several battles in the Harbor itself resulting in the destruction of the entire Boston fleet.

The independent colonies prevailed and formed a new country and trading continued to expand bringing vast wealth to the city. Neighborhoods such as Beacon Hill arose at this time settled by wealthy sea captains. At this time, a number of wharves



image 2. *View of Boston by F. Fuchs, 4th of July, 1870*

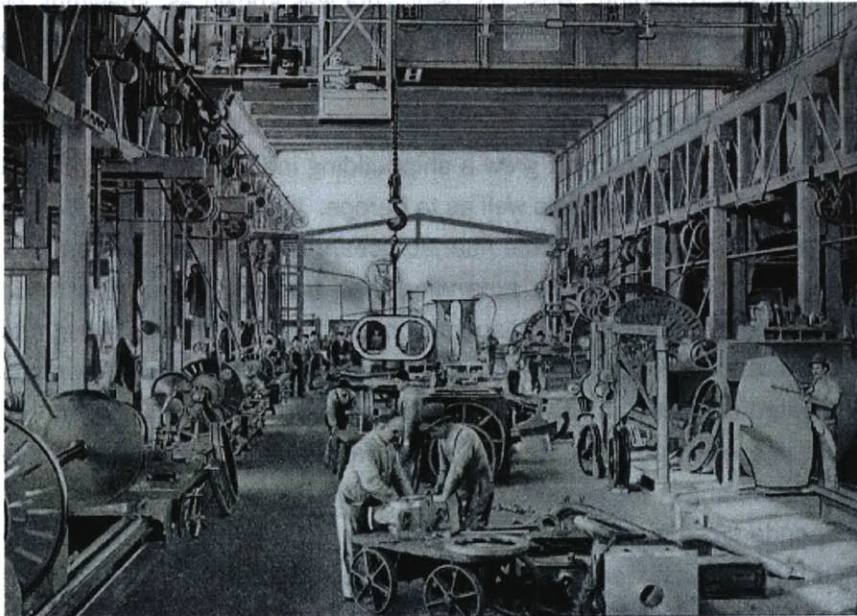


image 3. *View inside the machine shop at the Atlantic Works in East Boston*

jutting out onto the water from downtown Boston as well as from Charlestown. In 1708 there were 78 wharves lining the Inner Harbor in total including the most impressive Long Wharf, aptly named as it extended some 800 feet into the harbor from State Street.<sup>2</sup> What was once water around the area has been filled in, including most of the downtown waterfront as the city expanded. The city and the port continued to thrive into the 19<sup>th</sup> century.

Industrialization in the United States led to a decreased emphasis on international trading. Trade began to be focused more with other American ports on the coast. In the 1850's Boston Harbor became renowned again as a world-class port with the introduction of East Boston's Donald McKay's clipper ships. These 'fastest ships in the world' set the record from New York to San Francisco in eighty-nine days in 1851.<sup>3</sup> Nonetheless, advancing technologies in shipbuilding tended toward more mass production involving iron and steam. This led to Boston's port with its craft-oriented ship builders being eclipsed by New York's, which evolved into the major international hub for the East Coast.

Railroad companies built directly on the waterfront of the port to maximize efficiency. This proved to be vital in connecting the water to the industrial interior of the country. Much of the infrastructure that exists on the waterfront today remains from these days of railroad in which goods produced at inland factories were brought to the water via train and loaded onto ships. Likewise,

railroads were essential in connecting the coast to inland and transporting imported goods to the countryside.

Similar to the industrial presence in Boston Harbor dating from the early days of shipbuilding, a military presence can be traced to Boston's early colonial settlements. Besides the leftover infrastructure built to facilitate railroad connections to the Harbor, there is still today a lot of remaining infrastructure from a long tradition of military residence along the Harbor. The same fortuitous layout that made Boston an ideal natural trading center made its shore naturally strategic sites for military protection. Forts were constructed on the Harbor Islands that played roles in the Revolutionary, Civil and World Wars. The Navy Yard in Charlestown came into existence around the Revolution and remains today as the home of the USS Constitution. Other Navy facilities existed during World War II but soon declined. Much of their infrastructure remains derelict around the edge of the Harbor.<sup>4</sup>

#### **the modern port**

Since 1956 Boston Harbor has been managed by the Massachusetts Port Authority, which continues to attempt to attract international investments to keep the port vital. Container shipping—involving 20 x 40-foot boxes that are mounted on trucks and carried on trans-Atlantic routes—proved to be essential to Boston remaining a working port. Castle Island's Container Terminal built in 1966 was one of the first in the country. Container shipping has dominated international shipping and since 1980 in Boston three times as many containers pass through the harbor so that in 1999 1.3 million tons of cargo was handled in Boston Harbor.

In addition to cargo ships, passenger ships are increasingly visiting the port of Boston. In 1999, 62 passenger ships docked in Boston making it one of the fastest growing ports in cruise markets. Furthermore, Boston Harbor boasts two shipyards, numerous public and private ferry companies, marine research institutions, marinas, and major Coast Guard facilities. Despite regulation on intakes in the North Atlantic and economic hardship, the fishing industry in Boston is one of America's most valuable.<sup>5</sup>

As the city is undergoing one the worlds largest ever infrastructure over-hauls,



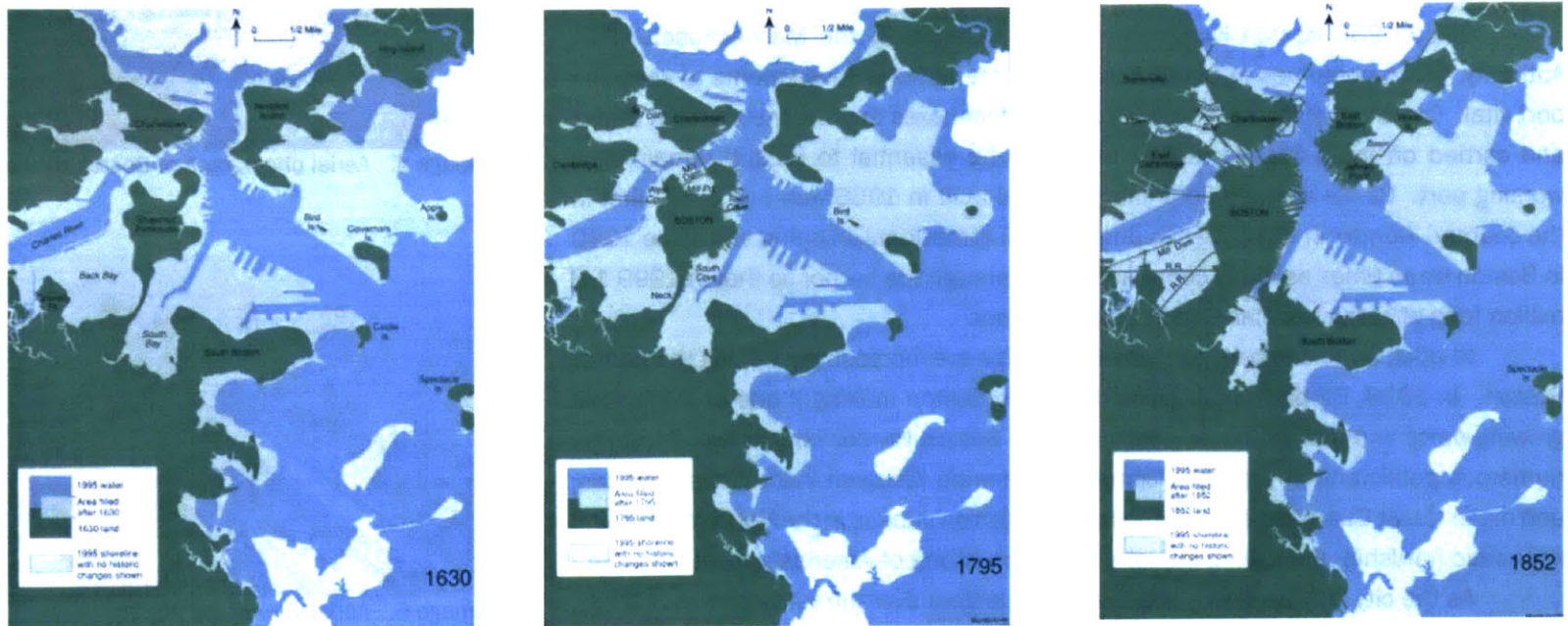
image 4. Aerial photograph of Boston Harbor



image 5. Aerial view of the Big Dig

now is the time to re-examine the harbor's connection to the city. All three major components of the Big Dig – the third harbor tunnel, the new bridge to Charlestown and the depression of the central artery - have implications for the city in terms of its relationship to the harbor. Obviously the bridge and tunnel serve to connect the downtown to outlying areas of the city for vehicles. However the depression of the elevated expressway that currently separates the city from its waterfront will also have a major affect. In the past fifty years buildings built have had their back to this elevated highway and turned inward to the Financial District and Government Center. Perhaps these buildings will begin to change to react more with the views to the Harbor and parks envisioned by city planners. Furthermore when the elevated expressway was constructed in the 1950's several long linear buildings that connected to the North End and to wharves along the waterfront were literally severed to allow construction. These conti-

image 6. Maps showing Boston's encroachment onto the water from 1630 to the present





nunities can be restored once the highway is underground thereby allowing the city to extend more fluidly towards the harbor as it once did.

Beyond connecting the downtown to derelict waterfronts, there is a chance to connect to outlying sections of Boston. Particularly there are a number of opportunities in Charlestown, East Boston and South Boston where out-dated infrastructure on larger tracts of land abounds as do strong existing neighborhoods. Plans for developing South Boston's waterfront include the creation of a new residential neighborhood, Seaport, Rafael Vinoly's one million square-foot convention center, hotels and a new modern art museum among other waterfront developments. This investigation will focus on the waterfront of East Boston directly across the Harbor from downtown Boston.

Physically the line marking the city and water's edge has been altered

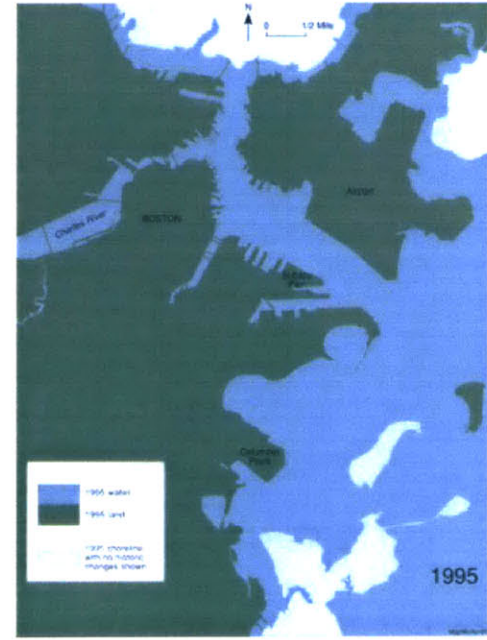
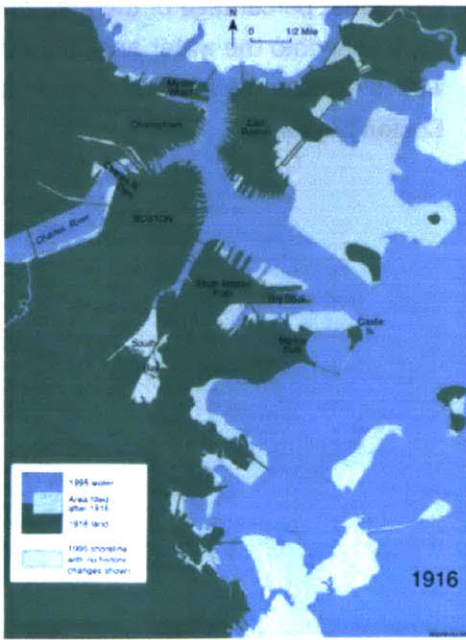


image 7. Computer rendering of Rafael Vinoly's convention center to be built in conjunction with the redevelopment of South Boston's waterfront.



dramatically since European settlement. What was once on the waterfront is now inland. Waterfront infrastructure from the colonial times, such as Quincy Market (former wharves) and Custom Tower are situated several blocks inland separated from the water by landfill and the central artery. This edge between urban and water has been constantly morphing as docks and piers extend into the harbor, eagerly consuming the water as the city spilled outward. It is an interesting phenomenon as fluid edge demonstrates the pull and push between city and water. Landfill is responsible for a great percentage of the area of Boston today as the city's growth has mandated expanding into the water and connecting islands where possible. Perhaps there is a way to express the static in relation to the ever moving, the 'edge' of Boston city and Boston harbor.

**(Endnotes)**

<sup>1</sup> Alan Mikal. *Exploring Boston Harbor*. (North Quincy: The Christopher Publishing House, 1975)

16.

<sup>2</sup> *Boston Looks Seaward*. 41.

<sup>3</sup> Anthony Sammarco. *East Boston*. (Charleston SC: Arcadia Publishing, 1997) 98.

<sup>4</sup> <http://www.massport.com>

<sup>5</sup> <http://www.massport.com>



## east boston

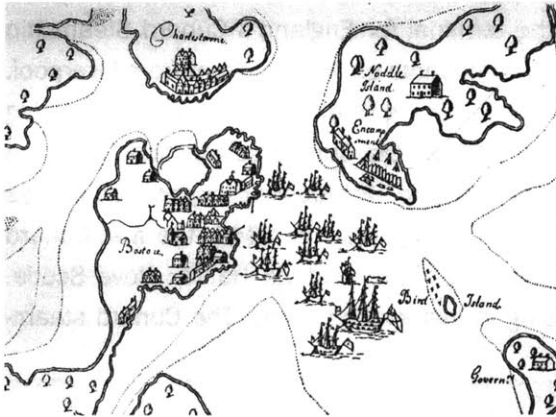


image 1. Map of Boston from 1711

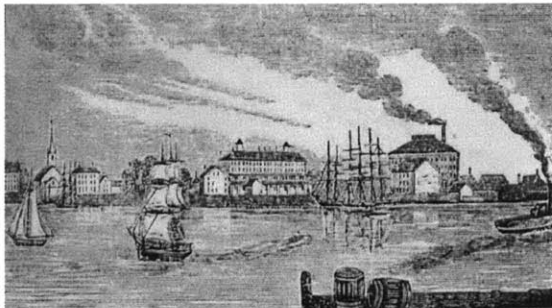


image 2. Lithograph of East Boston's waterfront from 1839

### history

Originally comprised of five harbor islands: Noddles, Apple, Governors, Bird and Hog, East Boston was created largely by landfill as a retreat from the city on the mainland. Although Noddles Island was first annexed by the city of Boston in 1637, it would remain physically isolated and virtually uninhabited for nearly the next 200 years.<sup>1</sup> The first resident was Samuel Maverick who settled some 500 acres on Noddles Island in 1634. It remained a pastoral island used for recreation and farming, across the Harbor from the developing city until in 1833 General William Sumner paid eighty thousand dollars for the islands. He founded the East Boston Company to carry out his plans to develop East Boston into a commercial trading center. Recognizing the value of its location on the harbor, Sumner created wharves and piers that were to become, over the next hundred years or so, one of the busiest shipping centers in the world. In the 1830's and 1840's commerce thrived as did fledgling shipbuilding industries. The East Boston Company also planed roads and squares and the supporting infrastructure that would allow a growing residential population. In 1835 East Boston was home to 700 residents and some 50 homes, 10 wharves, some light industries and the stately Maverick Hotel that lured wealthy Bostonians across the harbor. The islands of East Boston first became connected to the city by a regular ferry in 1833.<sup>2</sup>

As East Boston continued to grow as an international trading port, industries including the famous clipper shipbuilding which made the port famous developed.

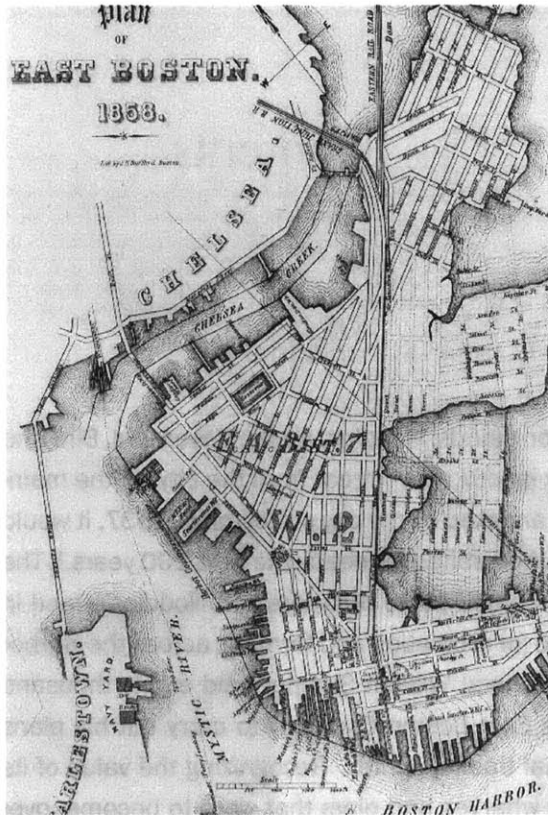


image 3. Plan of East Boston from 1858.

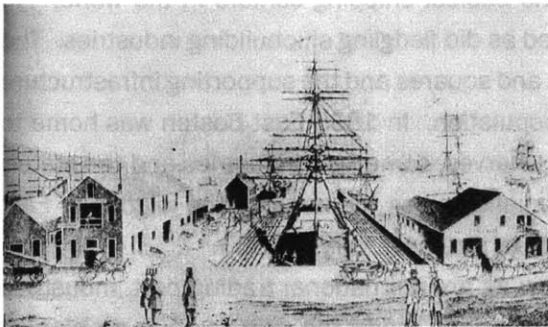


image 4. View of a drydock on Marginal Street

Since its settlement Boston had had a tradition of shipbuilding that was associated with a certain craft. From 1630 shipbuilding burgeoned in Boston so that over the next thirty-five years some 300 New England vessels existed as well as some 1300 smaller craft.<sup>3</sup> In East Boston, Donald McKay's famous Clipper Ships continued that tradition and were known as the fastest ships in the world from 1839 until well after the Civil War. Over the next twenty-five years East Boston prospered tremendously from shipbuilding and trading. Skilled workers flocked to the area as did sea captains and wealthy merchants who built homes in East Boston. While the industries of East Boston grew, people began residing on the islands. The first houses were mansions designed as retreats for wealthy Boston residents and prosperous sea captains.

In 1840 East Boston became the terminal for England's Cunard Steamship Lines which began weekly depositing new immigrants on its waterfront from Liverpool. Upper class Bostonians could easily travel to Europe from Pier 3 as well. According to East Boston Company founder, William Sumner, the Cunard connection forged an essential connection between old and New England. It brought prosperity as well as the mail, news, imports and new residents, immigrants. In 1840, the first Cunard ship, the *Unicorn* arrived to Boston Harbor from Liverpool via Halifax Nova Scotia. The steamship made the Atlantic crossing in just sixteen days. The Cunard steam-

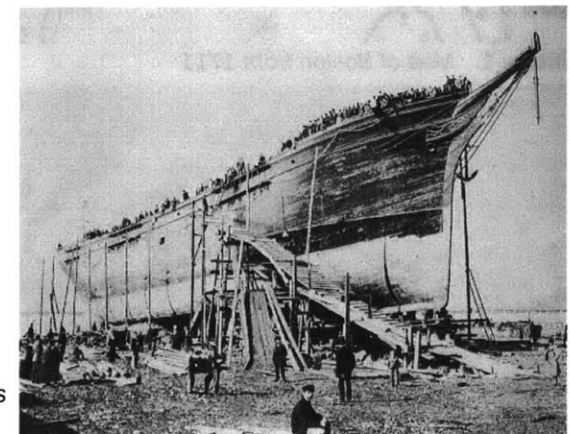


image 5. View of a clipper ship being constructed in Donald McKay's shipyard

ships unloaded on the piers near Marginal Street and Maverick Square to make use to the railroad lines for their great cargoes. Train connections also served European immigrants whose families had settled inland in America. These Cunard steamships continued to depart every two weeks from both Boston and Liverpool for the next eighty years or so.<sup>4</sup> This established an important connection to Europe that remained, exerting a tremendous influence on the development of East Boston. The ensuing influx of immigrants formed the basis of wealth and a growing population of East Boston that became a new threshold to a new world.

Beyond its characterization by a close relationship to the harbor and marine industries East Boston has been comprised of a diverse immigrant population. Starting in the 1850's East Boston's growth became increasingly reliant on immigration populations from Europe. In the 1850's and 1860's the Irish arrived in great numbers comprising a labor force that built many of the early piers and railroad lines. At this time the craft-oriented shipbuilding of East Boston began to decline in favor of more mass produced

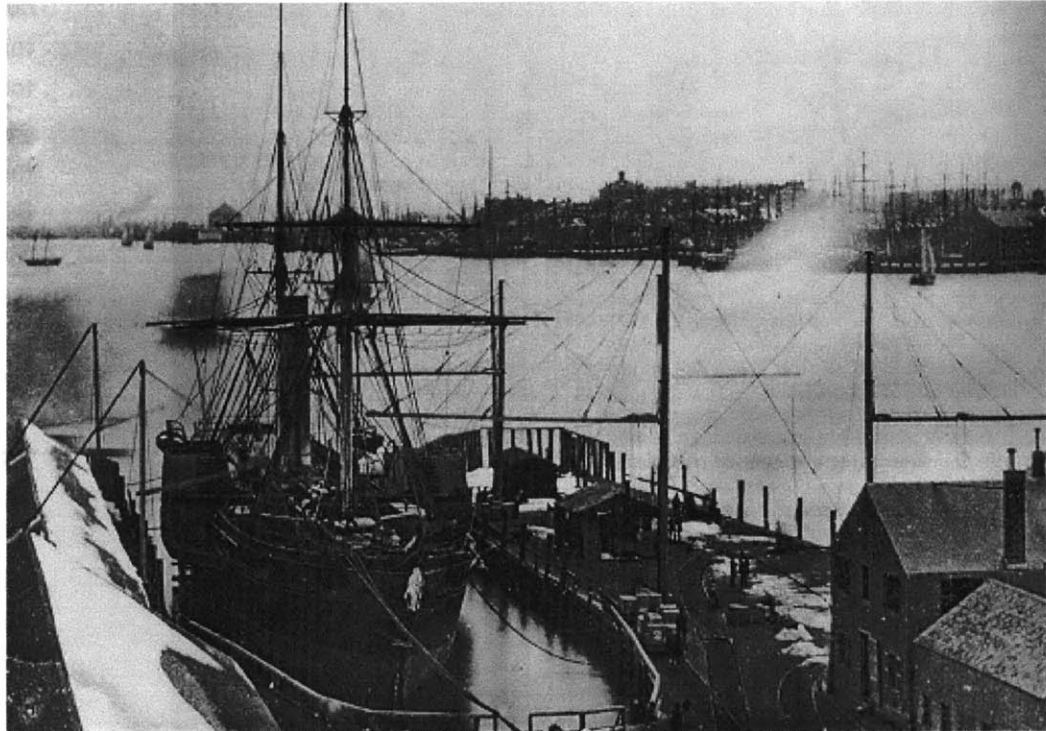


image 6. Photo of the Niagra at the Atlantic Dock with Boston's waterfront across the Harbor



image 8. The Sovereign of the Seas built by McKay in 1852



image 7. Carlton's Wharf at Sumner Street

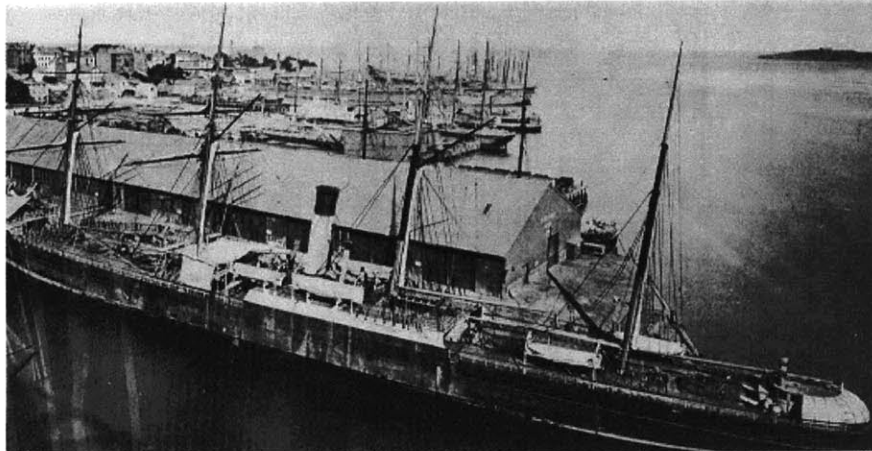


image 9. *The Istrian at one of the piers in 1876.*

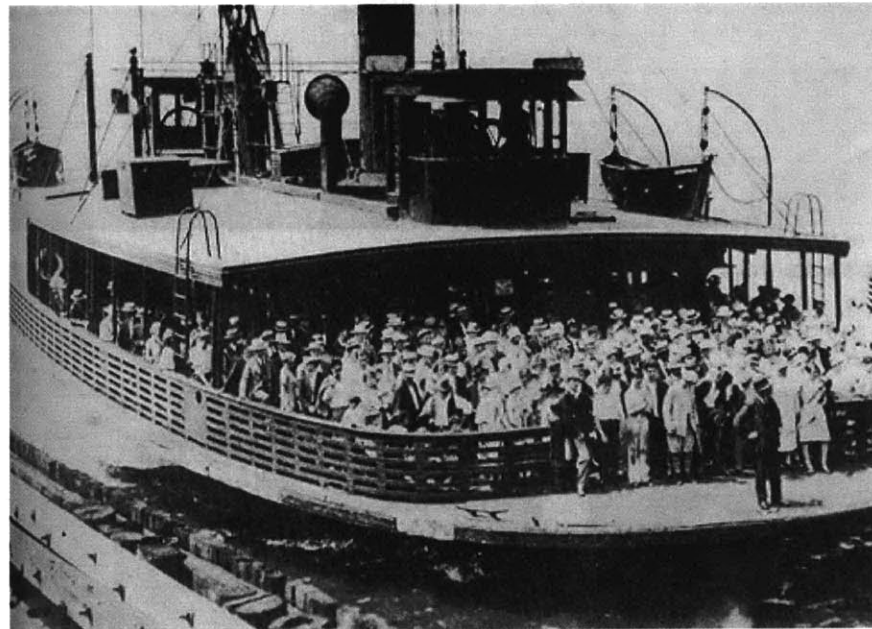


image 10. *A ferry approaching East Boston in the 1920's. Most passengers would then proceed on train to Revere Beach*

construction associated with iron and steam, and unfortunately for Boston's economy, New York. But East Boston's neighborhoods continued to grow as immigrants arriving settled its neighborhoods. Following the Irish migration, great numbers of Canadians settled in East Boston from 1855 to 1905, due in part to the Cunard Steamship stop in Nova Scotia. More inexpensive housing began to be built, the so-called triple-deckers that still today house thousands of Boston residents. This dominant housing type is characterized by its capacity to house three families or extended families, by stacking three residences atop one another as well as by its cheaper construction costs.

From 1885 to 1915 Italians and Russian Jews moved into East Boston replacing earlier Irish neighborhoods. In 1905 East Boston boasted the largest Jewish community in New England. These Jewish immigrants set up shops, prospered and moved on to Dorchester and Chelsea and other parts of Boston to form prominent Jewish communities. Italians from the North End and directly from Italy poured in subsequently. East Boston's population swelled to its peak of 60,000 residents between 1915 to 1935.<sup>5</sup> After that immigration quotas slowed the growth, as did the continuing expansion of the airport at the expense of residential neighborhoods.

In 1880 two settlement houses, the Good Will House and Trinity House were founded to aid immigrants. One immigrant house remains today on Mar-



ginal Street close to the Cunard dock it once served. Today East Boston remains somewhat of an ethnic enclave with numerous vibrant cultural celebrations. While many of the residents are Italian-American descendants from early 20<sup>th</sup> century immigrant families, affordable housing has made East Boston a neighborhood for new immigrant groups as well. In the 1970's and 1980's immigrants from Spanish speaking countries especially the Dominican Republic, Columbia and Central America arrived in significant numbers. Haitians, Eastern Europeans and Vietnamese are among the recent immigrant groups settling East Boston. The latest census (1990) shows a growth in the number of minorities as well as foreign-born.<sup>6</sup>

### transportation

Marine industries and transportation evolving from the early ferries to clipper ships and today's busy international airport historically define and distinguish East Boston's existence. Transportation has always dominated East Boston and needs to be revitalized and celebrated. It is not just as a transient place to be moved through en route to the airport, but should be truly a destination that is remembered for the important role it has had in the city's history.

From the onset as an island, East Boston's very existence depended on transportation - in those early days in the form of ferries. These ferries

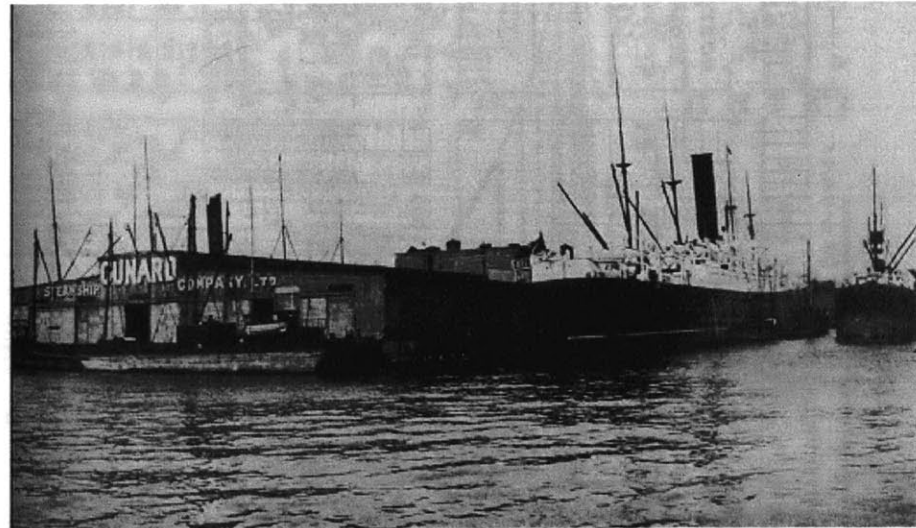


image 11. *The Cunard Wharf, or Pier 3*



image 12. *The East Boston Tunnel entrance from Maverick Square, 1905*

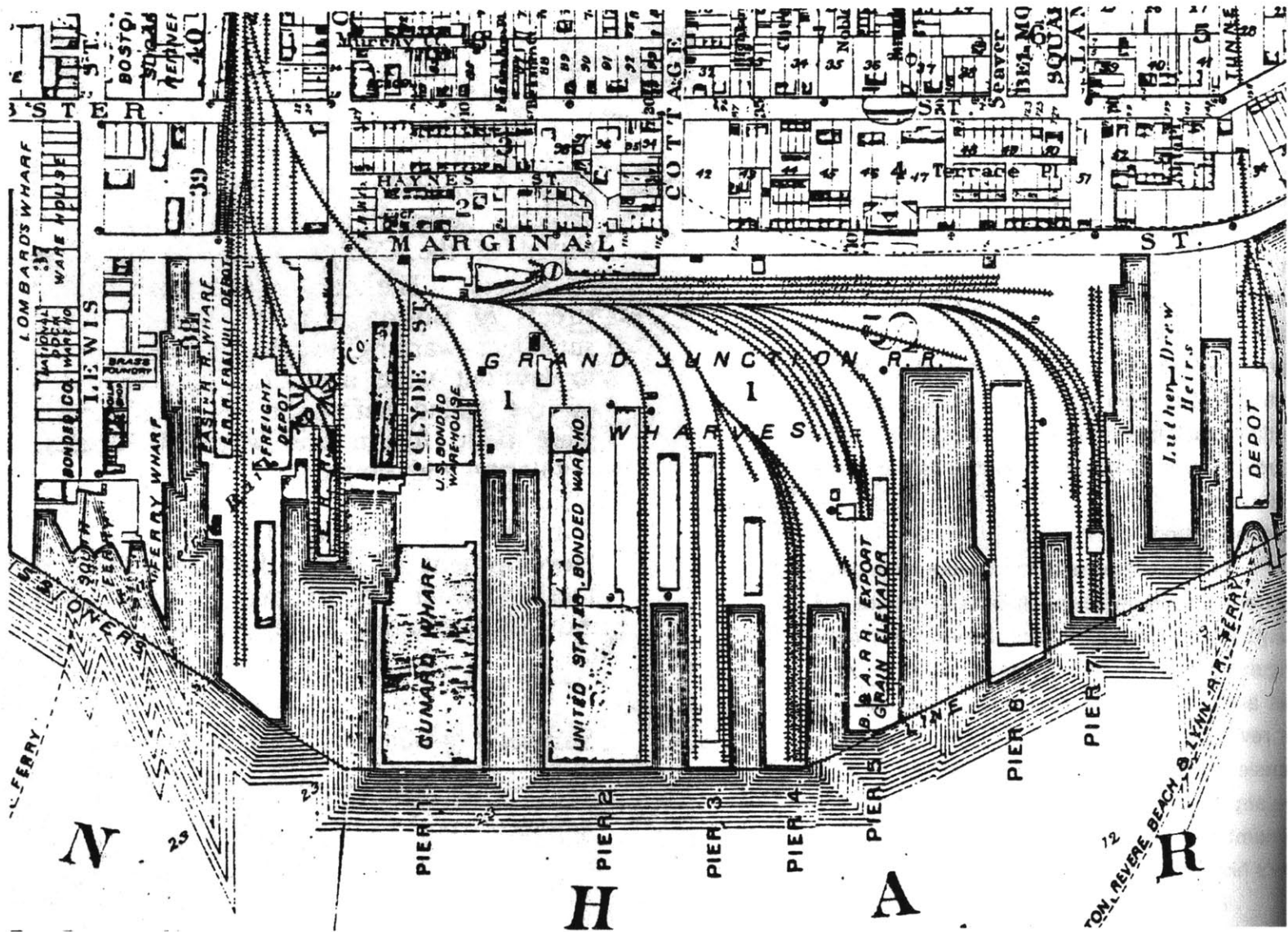


image 13. Plan of East Boston 1882

proved to be a critical link to downtown Boston until the twentieth century when the tunnels beneath the Harbor were constructed. A study in 1890 shows the two municipal East Boston ferries carried nearly 10.2 million passengers and some 900,000 horse-drawn vehicles annually.<sup>7</sup> As the automobile began to dominate the American landscape tunnels were constructed and these ferries declined until service was restored in the late 1980's. The first underwater tunnel in North America was constructed from 1900 to 1904 connecting Scollay Square (Government Center today) to Maverick Square in East Boston by subway. This East Boston Tunnel (today's MBTA's Blue Line) carried 17 million passengers in 1915. While some six million ferry riders paid a fare of one cent each way to cross from Long Wharf.<sup>8</sup> The number of ferry riders clearly declined from 1890 due to the automobile tunnel. The Callahan Tunnel, for two lanes of vehicular traffic, connected East Boston to downtown in 1934. From the 1958 to 1961 a second tunnel, the Sumner, was constructed to alleviate the already congested Callahan.

An airport opened in 1923 again propelling East Boston into limelight in terms of transportation in Boston. Logan International Airport began as a few airfields but grew quickly, expanding both onto the water by landfill and by claiming residential neighborhoods for runways. In 1930 it was considered one of the best airports on the East Coast.<sup>9</sup> However, its continued expansion remains a source of conflict with the community.

The transportation initiatives completed in East Boston have all had a major impact on the community. The subway and automobile tunnels as well as the expressway to the airport have all expedited transportation to and from East Boston and the airport but at a cost. These expansions dislocated hundreds of families and businesses that were forced to relocate.<sup>10</sup> Logan started as a meager 189 acre plot and today occupies 2/3 of the land of East Boston. Of course, much of the land for runways was infill claimed from the harbor. But sections of East Boston neighborhoods have been taken by eminent domain. East Boston residents had remained relatively passive towards the encroaching airport but this changed in 1968. In October Maverick



image 14. *Airplane over the skyline*

Square was a scene of resistance. Mothers took to the street occupying the Square to protest Massport's trucking of fuel and dump wastes through the neighborhood. The mayor sided with the women and for the first time the residents of East Boston had challenged and beaten the expanding airport. Still the relationship between the airport and community continues to remain fragile.

Today the expansion at Logan continues as does a new modernization project. According to Massport who owns and operates it, Logan International Airport is the 17<sup>th</sup> busiest airport in the nation and 26<sup>th</sup> in the world serving 26 million passengers while providing 16,000 jobs to the New England region. In addition the airport handles some 800 million pounds of cargo and mail while annually averaging approximately 40,000 flights per month in 2000.<sup>11</sup> The ever increasing number of flights creates disturbances in immediate neighbors to the airport, including East Boston and noise pollution remains quite a serious problem.

In the 1980's a new ferry, or water taxi, emerged to bring passenger and travellers to and from Logan Airport from the downtown area as surface roads and tunnels have grown increasingly congested. Several companies operate water taxis and regular services to Logan from Rowes Wharf, Long Wharf and Quincy. These services are successful because of the high demand for connections to the busy airport. In the BRA's *Boston Harbor Inner Harbor Passenger Water Transportation Plan* the water terminal at Logan is perceived as a crucial stop making water transportation viable. It is an established and efficient way to travel from the airport to the downtown in a short seven minutes avoiding frequent automobile delays in the tunnels. Other potential water taxi stops at Maverick and Central Squares in East Boston are considered secondary, depending on the success of connections at Logan. This projects hopes to anticipate the secondary stop by providing not only a water terminal but also a reason to come there, a new immigration museum/resource center and meanwhile connecting the Maverick Square neighborhood to downtown Boston.

#### **piers 1 – 5**

Several abandoned piers that face downtown Boston remain prime building

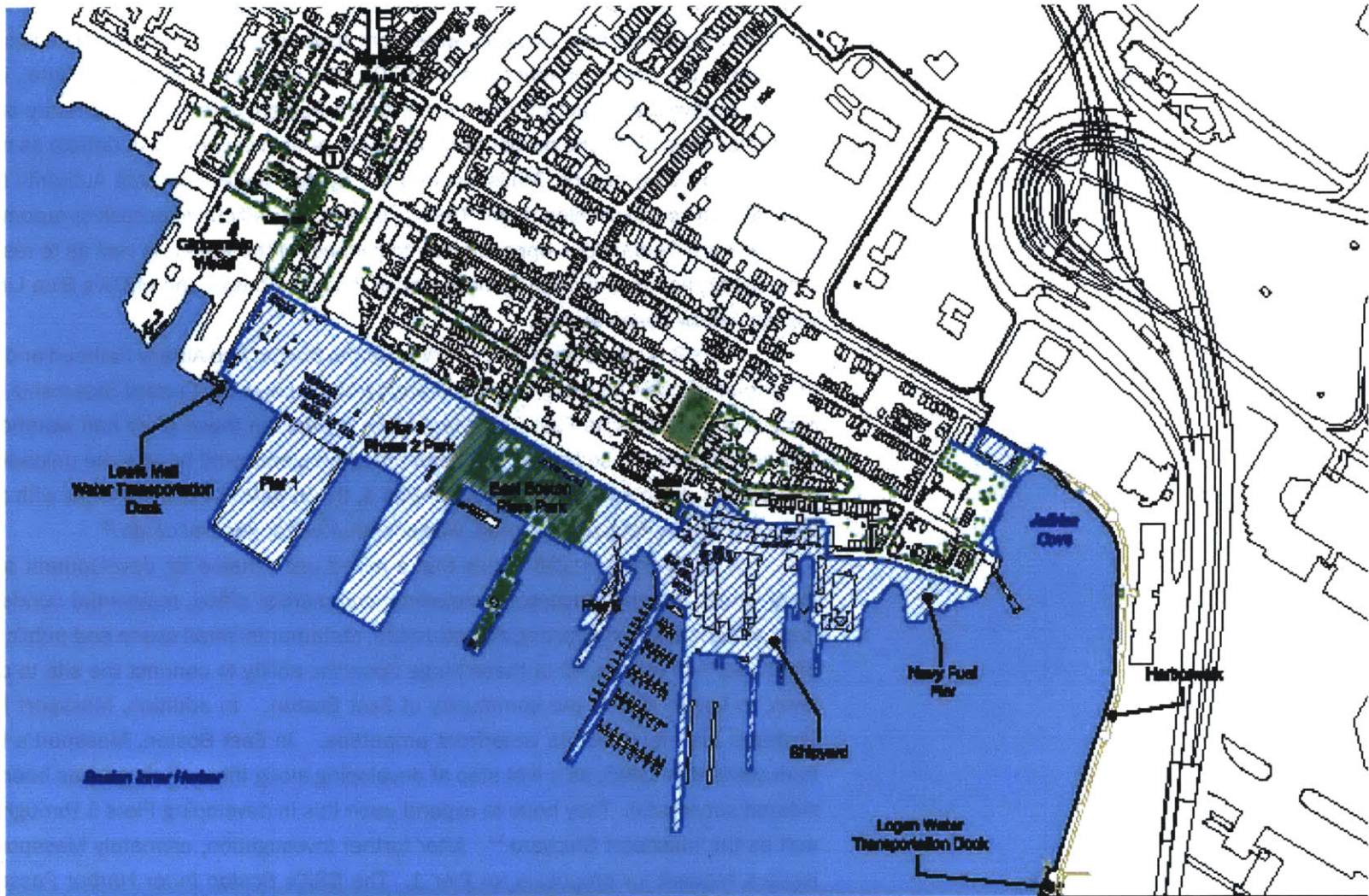


image 15. Map of Massport-owned land on the East Boston waterfront. The blue-striped land is owned by Massport. They have developed a park on pier 4, and have plans to expand it as well as to develop on the other piers.

spots for an integrated water terminal and immigration museum/resource center. Piers 1 – 5 located along East Boston's waterfront have remained inaccessible since they went under the control of Massport in 1970. The site, some 35 acres in total, is the largest undeveloped tract of land on the entire Boston waterfront. Currently one of the choice sites along the harbor front, the piers remain very much in debate as neighborhood advocacy groups, Massport and the Boston Redevelopment Authority (BRA) grapple with how to develop them. The site is relatively difficult to access by automobile but there are tremendous opportunities to connect to the water, as well as to residential neighborhoods and existing mass transit including buses, the MBTA's Blue Line as well as nearby Logan Airport.

Piers 3, 4 and 5 began as wharves for the Boston and Albany Railroad and were the site of transfer for many a trans-Atlantic freight. Later the Cunard Steamship Company used Pier 3 as its East Coast terminal. In addition these piers had warehouses and a grain elevator so that at the same time, the piers could handle the unloading of passengers, grain and cargo. In 1950 Pier 1, the largest of the piers today with about 180,000 square-foot storage area, was constructed for general cargo.<sup>12</sup>

A study done in 1983 finds that a mixed use scheme for development on the piers would be most successful including: commercial office, residential condominiums, a marina and supporting infrastructure, restaurants/retail space and public/non-profit use.<sup>13</sup> Of course, all of these hinge upon the ability to connect the site to downtown, to Logan and to the community of East Boston. In addition, Massport has a Strategic Plan for all of its waterfront properties. In East Boston, Massport's Pier's Park created in 1995, as a first step at developing along the waterfront, has been considered successful. They hope to expand upon this in developing Piers 1 through 5 as well as the Massport Shipyard.<sup>14</sup> After further investigation, ultimately Massport will issue a request for proposals for Pier 1. The BRA's *Boston Inner Harbor Passenger Water Transportation Plan* released in January of 2000 also finds that Pier 1 is most strategic in developing water transportation, albeit a secondary one. With its proximity to the MBTA Maverick Square stop as well as the success of water transportation to

Logan Airport, Pier 1 remains an area of high potential in connecting East Boston to downtown via water.<sup>15</sup>

These specific studies are not essential for my thesis except that they all suggest that a large public-use/museum on the site is feasible provided adequate transportation connections are made. I am interested in grasping onto both this transportation issue and the idea of developing a non-profit public space. The 1983 *East Boston HarborSide* study is of little use to an architect as it is more a financial feasibility study with parking requirements. Their findings, that a non-profit/public-use building is feasible, contingent upon adequate transportation connections, is what I find essential. I am ignoring parking requirements for the time being because I am confident that public transportation can do the job for the time being.

The development of a large public museum and cultural center will be an essential first step in setting a tone and reactivating a derelict area. There is little existing context on the immediate waterfront suggesting an opportunity to create a landmark building such as the Sydney Opera. The scale of such a gesture could be felt across the harbor and this reverberation would be an important step in establishing a presence on the east of the Harbor. However, the 'object' quality of an opera house does not seem appropriate. Instead this new waterfront proposal will have an openness or permeability that will reinforce the relationship of the city to the water at this important and yet neglected edge.



image 16. View of the waterfront from Border Street

### (Endnotes)

<sup>1</sup> *East Boston Neighborhood Profile*, (City of Boston: BRA, 1988) 2.

<sup>2</sup> *East Boston: 200 neighborhood history series*. (Boston: The Boston 200 Corporation: 1975) 3.

<sup>3</sup> *Boston Looks Seaward. the story of the port 1630-1940*. (Boston: Northeastern University Press, 1985) 25.

<sup>4</sup> William Sumner. *A History of East Boston*. (Boston: J.E. Tilton and Company, 1858) 702.

<sup>5</sup> *East Boston: 200 neighborhood history series*. 6.

<sup>6</sup> *Change and Diversity in Boston's Planning Districts 1980 vs. 1990*. (City of Boston: BRA, January 1994)

<sup>7</sup> *Boston Inner Harbor Passenger Water Transportation Plan*. 4-37.

<sup>8</sup> George Gibbs Jr. preparer. *East Boston: A survey and a comprehensive plan*. (Boston: Report of the City Board, 1915) 27.

<sup>9</sup> *East Boston: 200 neighborhood history series*. 10.

<sup>10</sup> *East Boston: 200 neighborhood history series*. 10.

<sup>11</sup> <http://www.massport.com>.

<sup>12</sup> *Reconnect: An East Boston of the Future*. 1989 MIT Urban Design Studio and NOAH.

<sup>13</sup> *East Boston HarborSide*. 3.

<sup>14</sup> <http://www.massport.com>

<sup>15</sup> *Boston Inner Harbor Passenger Water Transportation Plan*.



*“Once I thought to write a history of the immigrants in America. Then I discovered that the immigrants were American history.”*

Oscar Handlin.

## immigration



image 1. Photo of immigrants arriving to Boston Harbor

To a great extent, the United States' history can be defined in terms of a history of immigration. The massive influx of persons and the ensuing process of acculturation is a fascinating and complex narrative. What is important and interesting to this thesis is the fundamental experience of these early immigrants and the role that architecture played, as well as creating a place where people can locate themselves with this history. Did the Great Hall at Ellis Island mark a threshold to the 'Land of Opportunity' or was it an intimidating cold place in which immigrants were examined like cattle? The vast volume of persons channeled through Ellis Island make it worth examining.

The immigration station is not a common building type. Borders that exist between countries for immigration today are more fluid, or at least linear. New York's Ellis Island is the most emblematic 'station' as it channeled the "the largest human migration in modern history" by processing some 12 million immigrants as they arrived in New York Harbor.<sup>1</sup> The vaulted Great Hall at Ellis Island is a symbolic space, suggesting a threshold into a new life. Today these grand ports of Boston, San Francisco and New York no longer harbor boats filled with immigrants. The modern 'port' of entry is the airport. They are the new gateways to cities and countries as well places of great movement energy. Still though, the experience of arrival by water to bustling turn of the century American ports ought to be remembered as it is a definitive American experience.

### ellis island

What was the Ellis Island experience? The recently reopened Immigration Museum



image 2. images from the Ellis Island Museum including a view of the restored building, some interior displays and immigrant artifacts.



on Ellis Island attempts to re-create the journey of a passenger through the buildings there, an experience shared by the ancestors of 40% of Americans today.<sup>2</sup> After a harrowing cross-Atlantic journey, immigrants must have found the imposing Beaux-Arts architecture intimidating. While most spent two hours in the building before being approved for entry into the US itself, some 20% were detained in dormitories overnight for medical or other examinations thus experiencing the building as an initial lodging in the United States.<sup>3</sup> The buildings expanded over the years so as to include facilities such as a hospital, kitchen, laundry and dining hall. As immigration increased, the capacity of Ellis Island grew so that at its height it could intake some 5000 immigrants per day. Gradually the numbers of immigrants waned with the onset of the first World War and later due to government-inflicted restrictions. Ellis Island was decommissioned in 1954 and put under the National Park Service in 1965.

Renewed interest in remembering this history led to a rediscovery of the abandoned Ellis Island. In 1992, for its centennial Ellis Island 're-opened' as a 200,000 square-foot museum including two theaters, exhibition halls, meeting rooms, an oral history room and library. The renovation was designed to take the visitor



image 3. View along the wharf. The housing and school on the hill indicate that this is taken on Pier 3 where the Cunard steamship landed from Liverpool. This document is one of the few I have found relating the actual process of immigration along the wharves in East Boston.



image 4. This historical marker on an old Immigrant House on Marginal Street is one of a few traces of the port activities and immigration that occurred in East Boston.

on a re-creation of the path an immigrant took through the various structures including the refurbished original hall and supporting wings. In addition to a number of permanent and changing exhibitions documenting immigration in photos, oral histories, maps and artifacts there is an interactive learning center.

### **east boston's waterfront**

Historically East Boston's waterfront is second only to Ellis Island in volume of immigration. In fact one in six Americans can trace ancestors that arrived to the United States through Massachusetts Bay.<sup>4</sup> Fundamentally different then processing passengers through an enormous hall as on Ellis Island, arriving to the wharves in Boston was more of a transaction on the docks. As discussed in the chapter on East Boston the direct connection to Europe through the Cunard Steamship Line resulted the depositing of thousands of immigrants on the piers of East Boston. It is easy to imagine a chaotic mix of foreign born, Americans, cargo and mail being sorted on the docks of East Boston with little success. Little has been written about the historical process of arrival, inspection and entrance. All immigrants disembarked in East Boston

**East Boston population statistics  
1980 and 1990 Census Data**

	1980	1990
total population:	32,178	32,941
english proficiency:	94.90%	87.1%*
race:		
white	96.10%	76.40%
black	0.30%	1.60%
latino	3.10%	17.30%
asian	0.40%	4.10%
poverty rate:	16.70%	19.30%

\* (lowest of all Boston's 16 Planning Districts)

image 5. Census data showing the composition of East Boston's population.

**East Boston Population Statistics - 1990 Census  
Maverick and Central Square Neighborhood**

	number	percentage
total population:	7,834	100.00%
born in Mass.	4,609	58.80%
born in US	5,485	70.00%
foreign born:	2,349	30.00%
arriving:		
years	number	percentage
1987-1990	706	30%
1985-1986	363	15.40%
1982-1984	252	10.70%
1980-1981	223	9.70%
1975-1979	190	8.10%
1970-1974	158	6.70%
1965-1969	117	5.00%
1960-1964	63	2.70%
1950-1959	78	3.30%

image 6. Census data showing the arrival years of East Boston's foreign-born population.

and were processed at an Immigrant house on nearby Marginal Street. Pictures depict some waiting for the train after this process, so that some moved to other parts of the city perhaps where family or immigrants from their country had established a small community. For many though, East Boston, the precise location where they arrived remained where they lived.

Immigrants did not necessarily settle East Boston because it was where they landed. The maritime industry located along the water provided numerous jobs especially unskilled ones, in later years of immigration before World War I. The wharves of the West End, North End, South Boston and Charlestown all provided immigrants with work and were settled accordingly.

These recent immigrants formed vibrant communities within East Boston. First the Irish arrived, followed by Canadian, Jewish and Italian immigrants until quotas enacted in the 1920's severely limited the number of immigrants arriving. Today, East Boston's less expensive housing and tradition of harboring immigrants has made it home to new immigrant groups including Vietnamese, Eastern Europeans, Central Americans. Subsidized housing along the waterfront assists low income, and often foreign-born residents. Ironically, it settles them exactly where their predecessors once arrived by boat.

Today few remnants exist of this human migration. On Marginal Street, an immigrant house, erected in 1912 to assist immigrants settling in Boston, stands though it has been converted to elderly housing. When it first opened, it even housed some former immigrants who had arrived at this very house years ago from the wharves. This renovation shows great

capacity in the architecture to transform and yet remember.

The East Boston waterfront has relatively little human activity. Instead there are industrial scaled abandoned sites with some activity. There are a number of parks and small plazas that are inhabited by local pedestrians that speak to the past human activity on what was once a bustling wharf filled with people and cargoes arriving to a new port from all around the world.

East Boston is not exactly a transient community even though the earlier immigrants, the Irish and the Jewish tended to stay for at least a generation, before moving on to other sections of the city. Later immigrants, Italians in particular tended to form longer ties to the community so that even today there are a number of Italian-Americans who still reside in East Boston. However, the demographics of the community have clearly changed and will continue to do so. The numbers of Spanish-speaking, Asian and Caribbean immigrants have grown significantly. The demographics indicate a shift from white population (largely Italian-Americans) that dominated since the early 1900's to a more diverse one. Again the numbers of foreign-born are climbing, and in fact, of the sixteen Planning Districts of Boston, East Boston has the lowest percentage of proficient English speakers indicating it is that is still attracting a large number of immigrants.<sup>5</sup>

This project is a contemporary examination of immigration and the site explored is the site at which thousands of immigrants arrived into Boston Harbor along the piers of East Boston. The image of 'huddled masses' shuttled from a huge ocean liner into large hall and the ensuing confusion is perhaps outdated and more an historical memory yet the foreign-born today account for over 9.3% of the United States population.<sup>6</sup> This percentage is as high as 45% in port cities favored by immigrants today such as in Miami. In Boston, the number is closer to 12% as about

Language	Percentage of the populations of:	
	East Boston	Rest of Boston
English	64.30%	74.40%
Spanish	15.50%	9.50%
Italian	13.20%	2.10%
Portuguese/Creole	2.30%	1.40%
Vietnamese	1.40%	0.80%
Mon-Khmer	1.20%	0.20%
French/Creole	0.70%	3.60%

image 7. Census data showing languages spoken at home

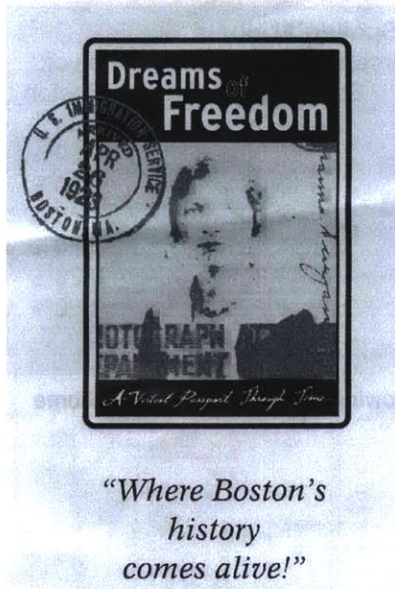


image 8. Brochure for Boston's new Dreams of Freedom Museum that chronicles Boston's immigration history



image 9. Interior view of the Dreams of Freedom Museum, Boston

18,000 have arrived annually since 1990.<sup>7</sup> However the number of foreign-born residents is slightly higher in East Boston which tends to attract more than other Boston neighborhoods.

Airports have replaced piers, wharves and island stations that once processed immigrants. Immigration and Naturalization Service as well as customs are located deep within the airports. As Logan Airport is the true threshold this new immigration station and resource center is to be located proximately to the airport on the piers where immigrants arriving by boat de-boarded. The modern immigrants are often transients fleeing homes for various reasons. The displacement they must feel and depersonalized experience through customs at Logan by INS can perhaps be rethought.

#### a museum

There exists in Boston a museum dedicated to the history of the city in terms of immigration. It is located in the financial district along the Freedom Trail. In many respects the museum, called Dreams of Freedom, is meant to be an experiential journey on which you are given a passport to reenact a narrative so as to experience the 'day in the life of' an early American immigrant. This approach seems like a valid one, although I have some problems with the forced nature of it and the sentimental manner in which the 'journey' occurs. However, it is an oversight that the experience of the water is not addressed. Today of course, arrival by water is rare. But it was the prevalent experience in the nineteenth and early twentieth century. I am proposing to relocate this museum's collection as well as a number of other archival institutions with great original historical documents to this site in East Boston.

This new complex will have two functions: a genealogical research library to serve community, as well as New Englanders who can trace their history to immigrants who passed through East Boston, as well as some spaces for display of artifacts, archives and photographs. Genealogical research has become an increasingly popular way of grasping roots in our mobile and fast-paced society. Looking to the past and tracing family histories gives people identities and clues that inform their lives today. Also due to America's relatively complicated identity the search for a link to European

past perhaps gives some identity.

The advance of the internet is particularly well-suited to research of this kind. For this reason, and because of the powerful idea of connecting people across tremendous distances this new immigration center will support computer research as a way of personalizing this history of immigration to the United States.

Beyond this opportunity to explore the past through displays and search engines tracing family histories, this space can support a resource center for immigrants today. The library will provide support for those newly arrived needed jobs, a place to live and a center to meet other newly arrived. Today there are a number of ethnic immigrants resource centers located throughout the city. However, a centralized approach could begin to allow some sharing resources as well as a connection to federal immigration offices so that official papers, visa and documentation could occur for all recent immigrants at one centralized facility. The intent is to overlap memories with modern interpretations and understandings on a site that contains traces of the past.

### **(Endnotes)**

<sup>1</sup> <http://www.ellisland.org>.

<sup>2</sup> <http://www.ellisland.org>.

<sup>3</sup> Allen Freeman. "Ellis Island Revisited." *Historic Preservation*. (September, 1990) 35.

<sup>4</sup> <http://www.dreamsoffreedom.com>

<sup>5</sup> *Change and Diversity in Boston's Planning Districts 1980 vs. 1990*.

<sup>6</sup> <http://i2i.org/ippc.htm>.

<sup>7</sup> <http://i2i.org/ippc.htm>.

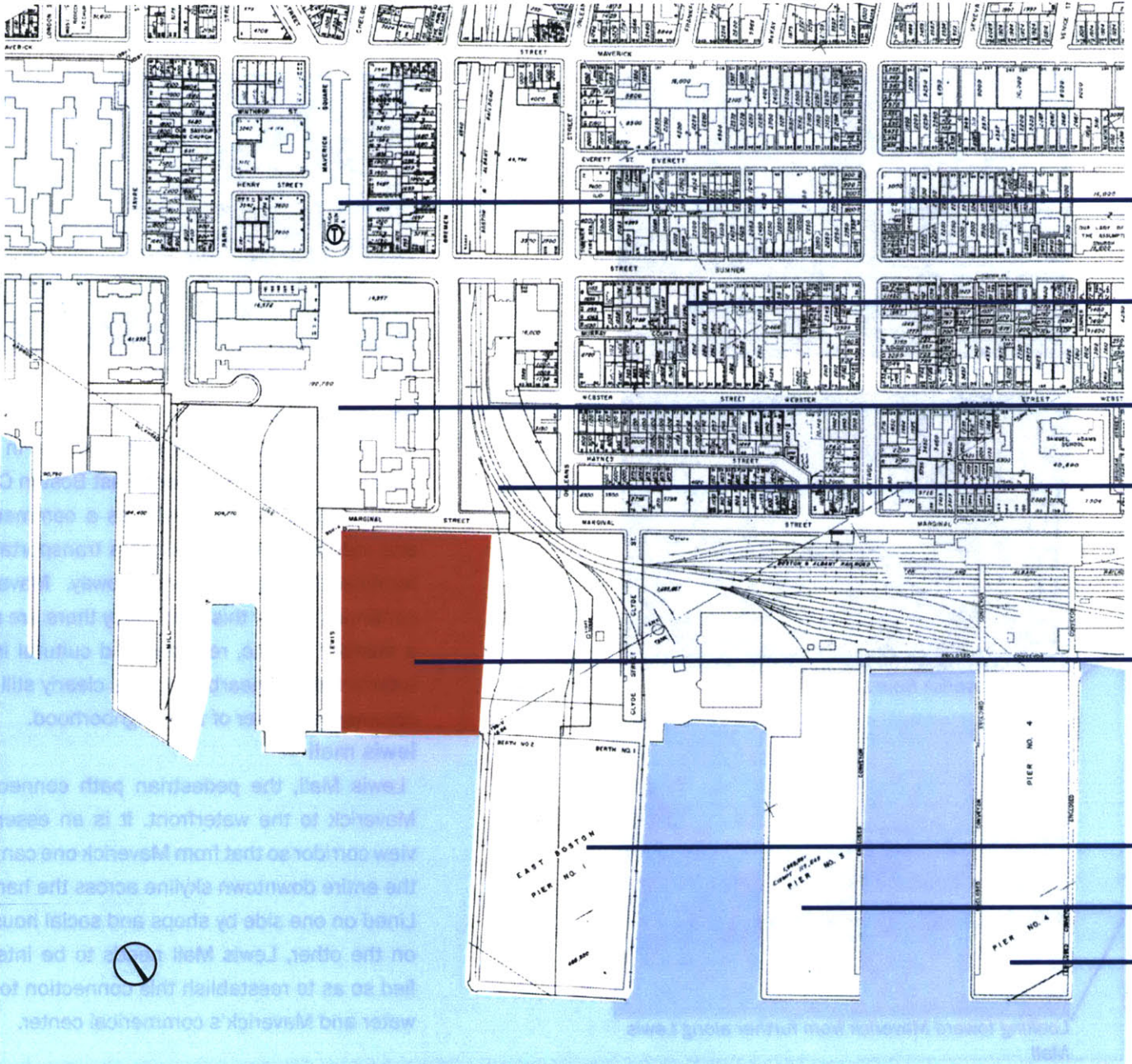


*View from the end of Lewis Pier to the Harbor*

## the site

The strong commercial center of Maverick Square and its proximity to the area around Pier 1 has the most potential in becoming an intermodal transit terminal connecting water and land transportation. For this reason it was determined to be the site for this project. Currently a parking lot used as a truck driver training site, it is surrounded by a number of very distinct conditions. Its southwest face is to the Inner Harbor directly across from downtown Boston. Lewis Mall, an established pedestrian park and view corridor is located directly to the north along the water extending from the water into the commercial center of the area. Maverick Square containing a MBTA stop and city bus connections is approximately 800 feet inland at the terminus of Lewis Mall. The neighborhoods along Marginal Street out to Jefferies Point border the site to the east and finally, the Boston Marine works is located to the south along the waterfront.





maverick square

existing residential neighborhood

lewis mall (pedestrian)

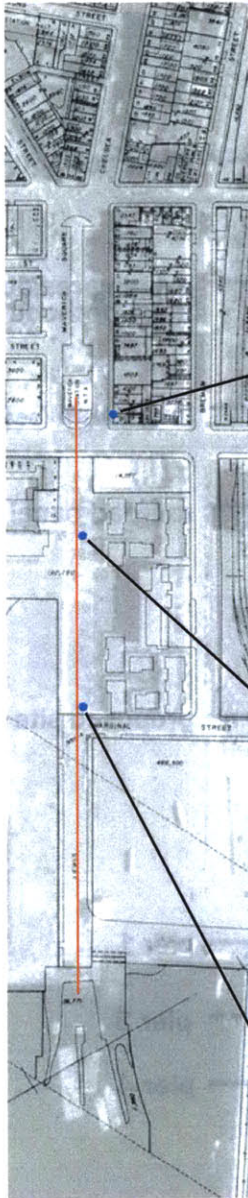
railroad canal

proposed site

pier 1

pier 3

pier 4



*Maverick Square*



*View to Maverick from Lewis Mall*



*Looking toward Maverick from further along Lewis Mall*



*Maverick Square MBTA station*

### **maverick square**

Maverick Square was laid out in the 1830's by William Sumner's East Boston Company. Maverick has served as a commercial and industrial hub as well as a transportation terminal, for boat, bus and subway. Maverick continues to play this role. Today there are also a number of civic, religious and cultural institutions located nearby and it is clearly still the commercial center of the neighborhood.

### **lewis mall**

Lewis Mall, the pedestrian path connecting Maverick to the waterfront. It is an essential view corridor so that from Maverick one can see the entire downtown skyline across the harbor. Lined on one side by shops and social housing on the other, Lewis Mall needs to be intensified so as to reestablish this connection to the water and Maverick's commercial center.



*Existing edge condition*

### **water's edge**

Lewis Mall leads from Maverick to the water. The path is about 800 feet but the draw of the water and the view at the end are compelling. In the photographs a more contemporary dock can be seen at the water's edge. It was used in the 1990's as a water transportation site. However, the service was stopped in 1996. To the right as one walks toward the water is an abandoned industrial site, a former ship building center with the remnants of a dry-dock. To the right are the Massport-owned piers 1-5.

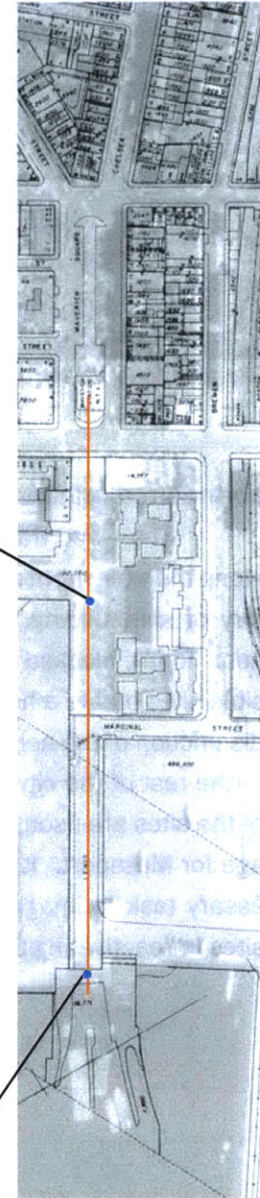
Despite the deteriorated edge conditions, the view corridor connecting Maverick to the water is strong. However, it is really the view out across the water that makes these edge sites attractive to build upon.



*View down Lewis Mall toward the water*



*View from the end of Lewis Mall of the skyline and harbor*





*Site along the waterfront as seen from Lewis Mall*

### **abandoned industrial sites**

The vast tracts of land left derelict along the waterfront speak of an important history of shipbuilding, trade and marine activities. Today, blocked by fences, these inaccessible sites create a hostile edge, furthering the disjunction of the neighborhood of East Boston to the rest of the city and to the water. Some of the sites are used as parking lots or for storage for Massport. It is a tremendous but necessary task to imagine the potential of these sites in reactivating the waterfront for the city.



*View to pier 1 from the end of Lewis Mall at the water's edge*



*View down Marginal Street from Lewis Mall showing Massport owned Piers 1-5 on the right*



*View from Marina to neighborhood on the hill*



### **industrial and waterfront activities**

While many of the sites along the waterfront of East Boston are abandoned industrial sites, there remains some actively used ones as well. There are some industrial sites to the north being cleaned by the city. There is a working marina in which a number of local boats are stored for the winter. In the summer this marina is full of activity. Further along the waterfront-towards the airport, there is the Jefferies Point Yacht club, the oldest chartered yacht club in the country.

Massport in 1995 turned pier 4 into a new waterfront park that is used by residents and particularly by the children attending the school above it on the hill. These marinas and parks are a first step in setting a more recreational tone along the waterfront.



*Pier 4 has been converted to a park by Massport*



*Houseboat in the marina*



*View along Summer Street of old firestation and a residential street*

### **existing residential neighborhood**

Residential neighborhoods along Marginal Street to Jefferies Point, just southwest of Logan, are older neighborhoods dating from the mid 1800's. Urban renewal has brought some larger social housing projects with a markedly different scale and footprint. Older neighborhoods consist of dense single-family houses as well as triple-deckers. The newer social housing is inexpensive, brick and typically more spartan with more open space around it. Some of these residences although run-down have tremendous views of downtown Boston. The neighborhood has been severely affected by the presence of Logan Airport.



*View down Webster Street*

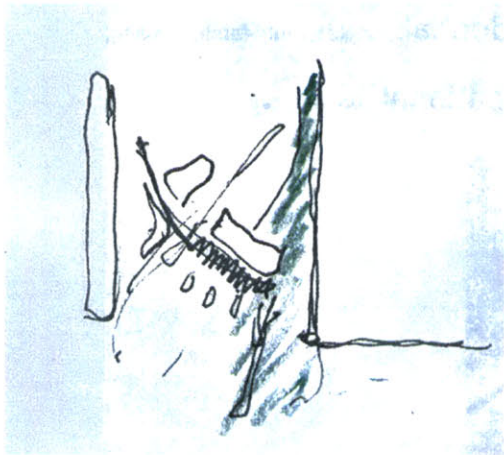


Housing along Lewis Mall



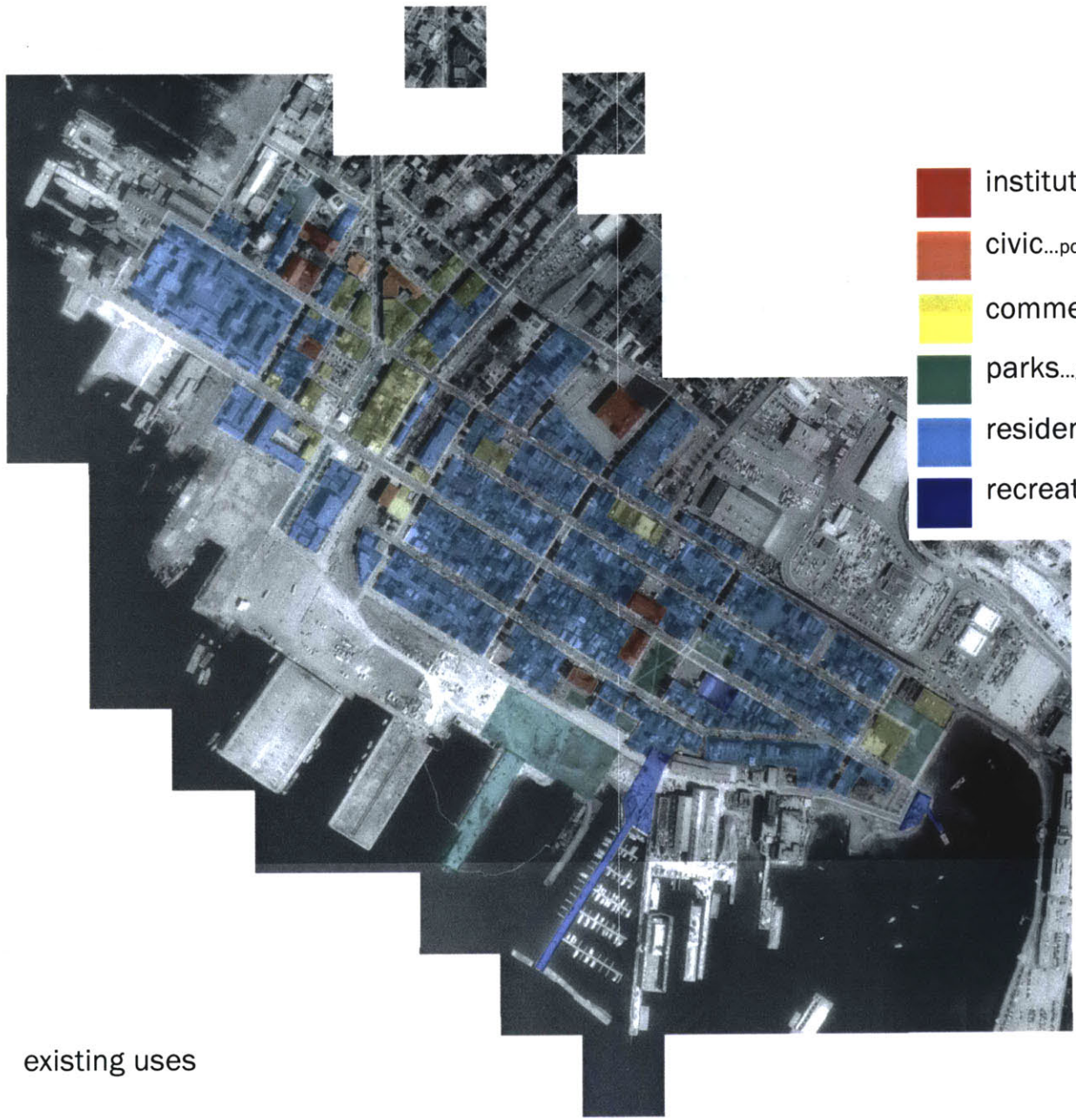


## DESIGN PROPOSAL



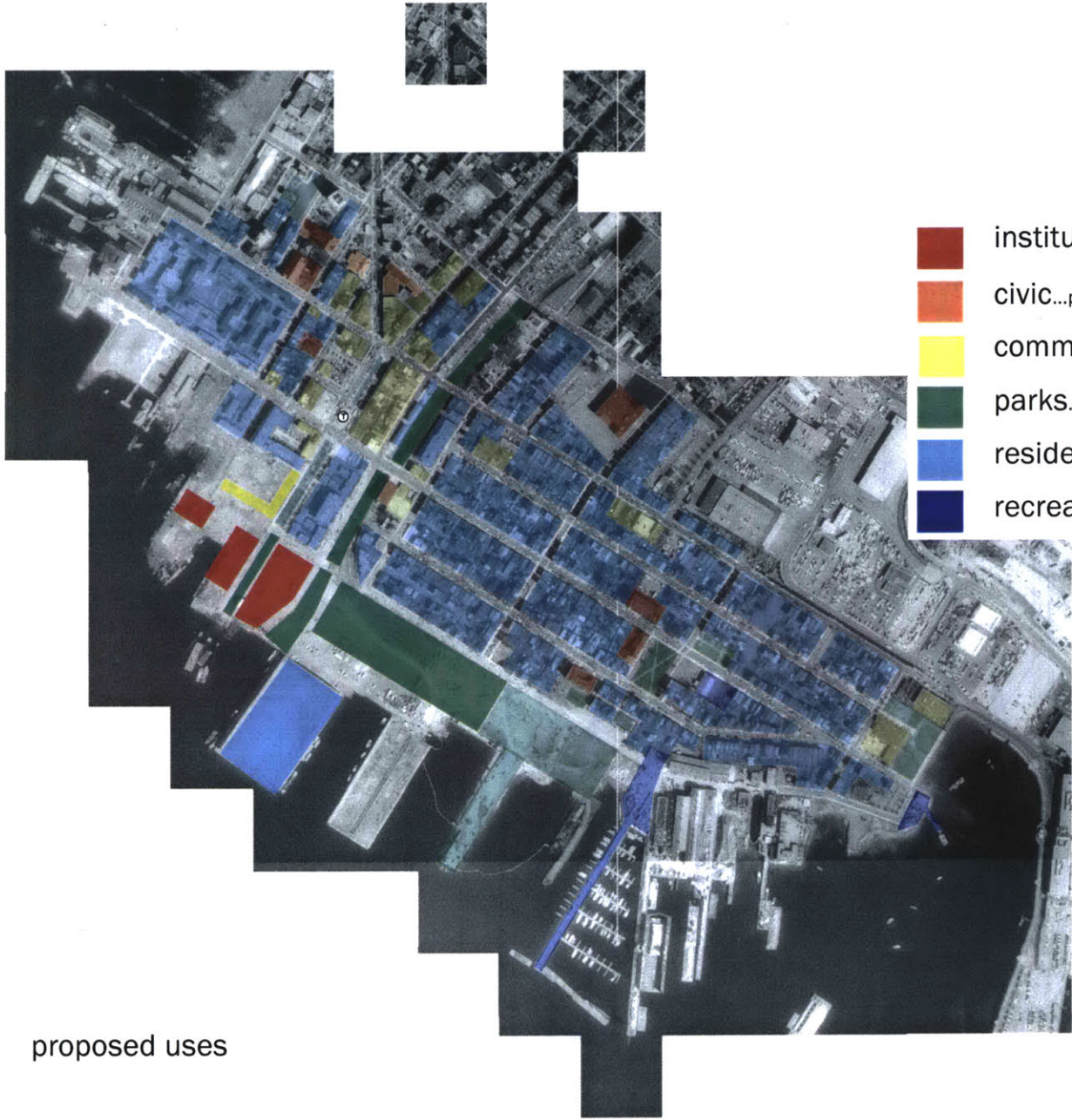
### *urban investigations*

The urban investigations ranged in scale from the entire Inner Harbor to the specific site in the context of the neighborhood of Maverick Square. Considerations included the force of the following elements: the water, the city and the landscape. Each exerted a certain pressure that helped to define the resulting form.



- institutional...schools, churches, museums
- civic...police & fire stations, post offices
- commercial...retail, offices, garages
- parks...green spaces, public plazas
- residential...single & multi-family housing
- recreational...boating centers, gyms

existing uses

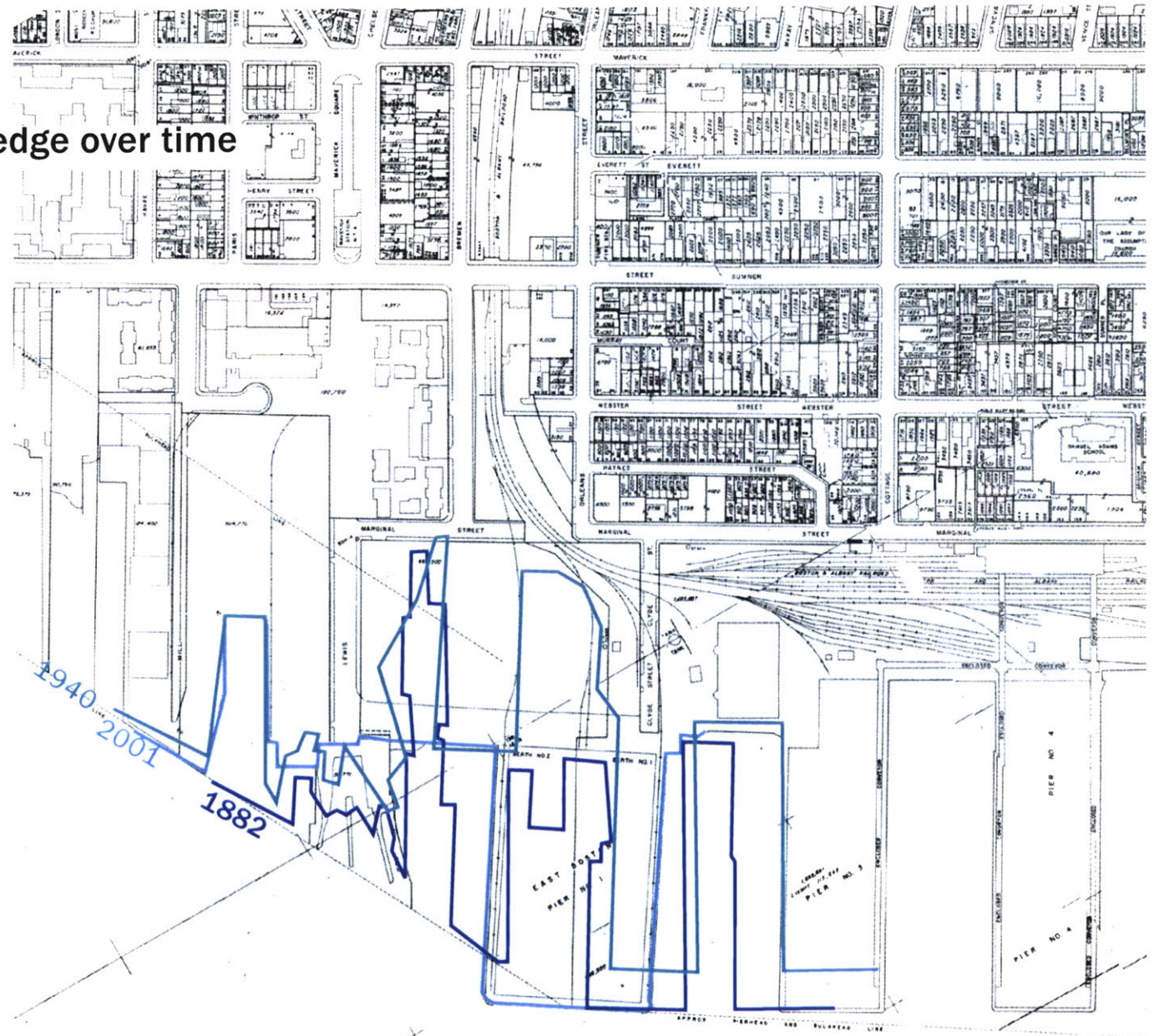


- institutional...schools, churches, museums
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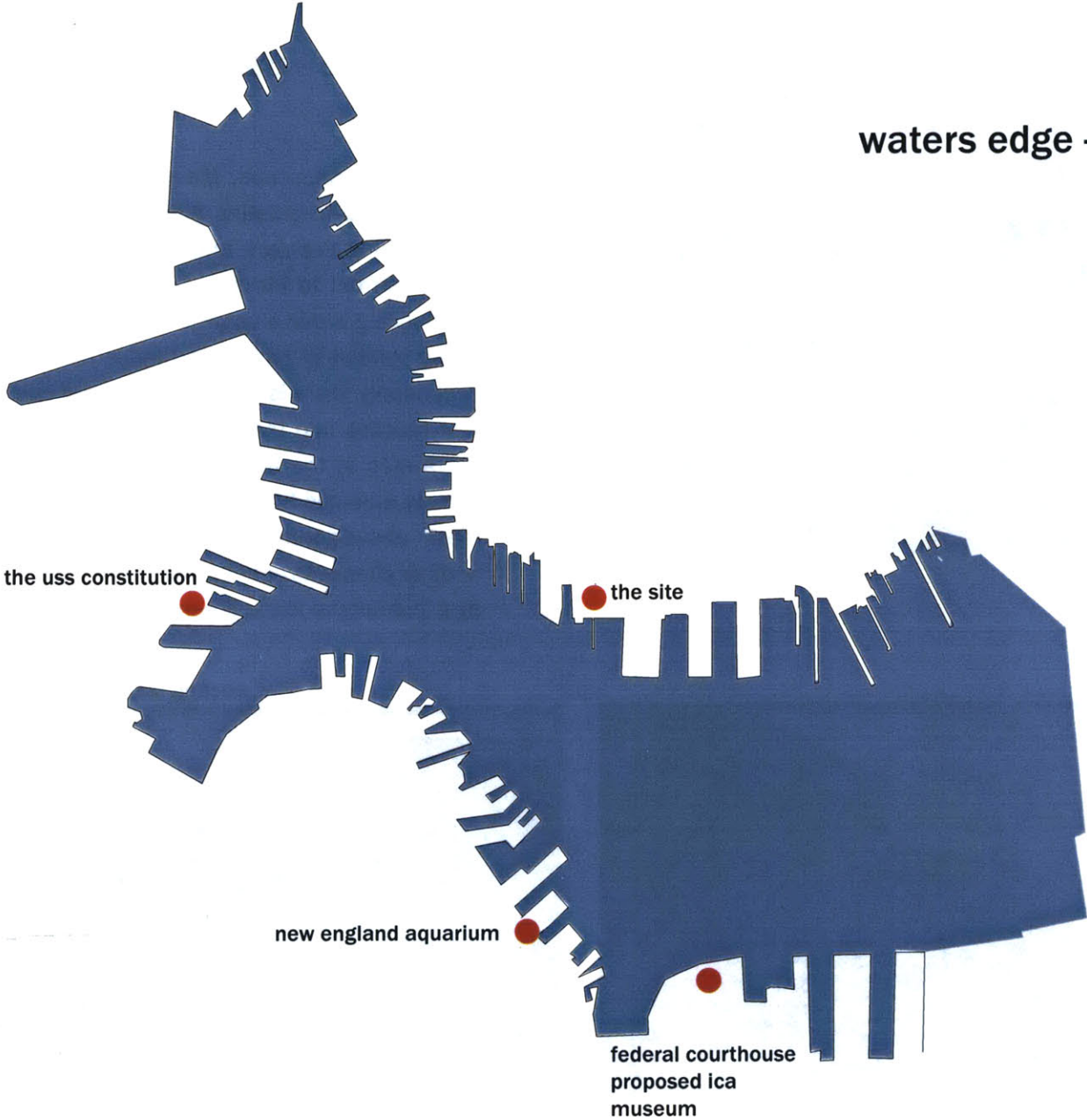
proposed uses

## water-land edge over time

Mapping this edge between land and water reveals the constant fluctuations and fluidity of this 'line' that is drawn between city and water. Blurring the distinction between the two conditions starts to allow the experience of the water and of the land begin to be blurred as well.



# waters edge - Boston Inner Harbor



Waterfront land use across the Harbor varies tremendously. Using cues set by institutional projects around the Inner Harbor, one can start to imagine that in fact a cultural program on East Boston's waterfront could make a lot of sense when seen within the context of a number of institutional waterfront projects connected by water.



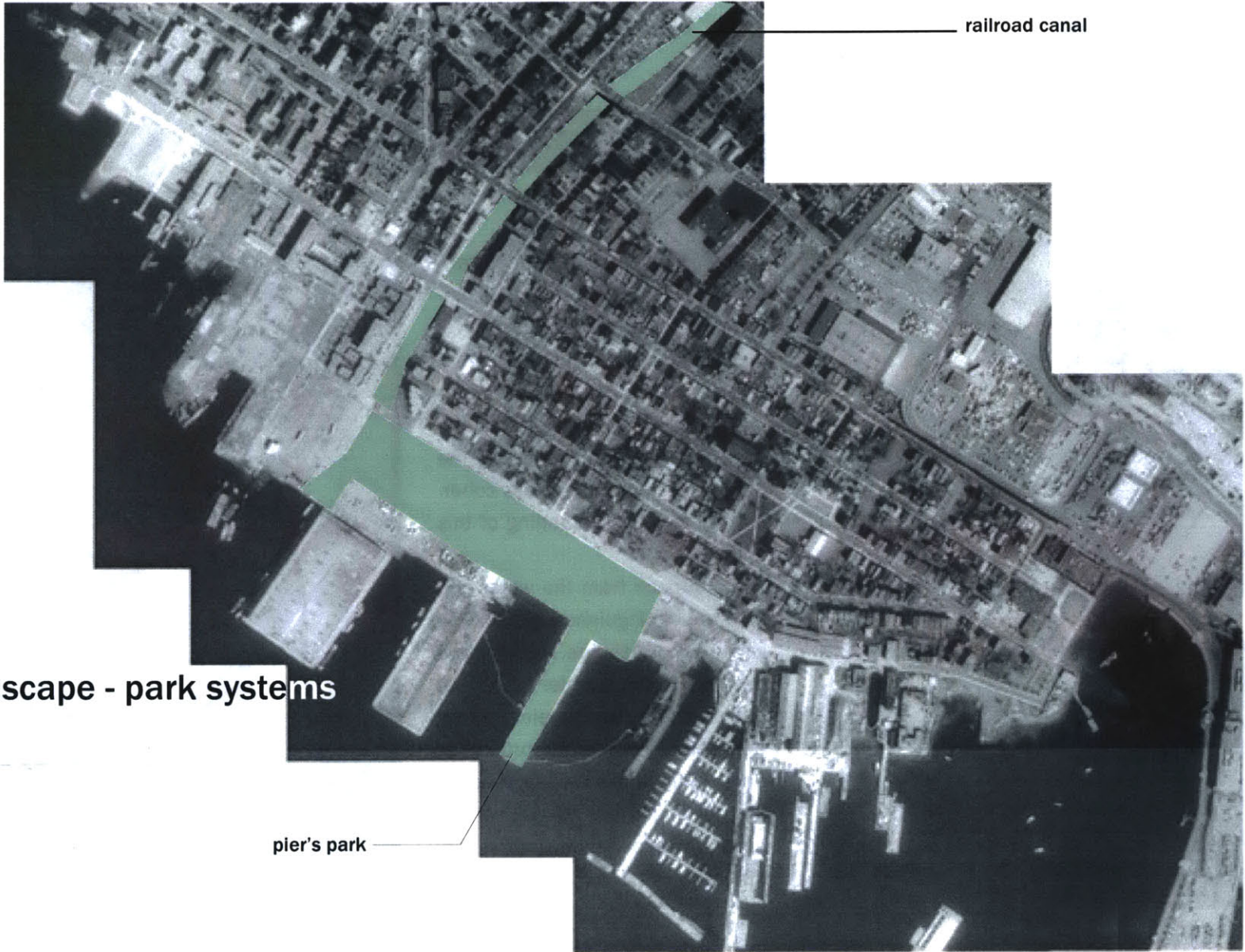
## landscape - park systems

In terms of landscape, Massport has made the first step in creating Pier's Park on Pier 4. Extending this park and connecting along the waterfront to the site, begins to situate any building within a context of park and landscape instead of abandoned industrial sites. Secondly, there is an existing railroad canal that reaches into the city as far as the next MBTA stop at the airport at which point the subway emerges from underground and uses these above-ground tracks. This presents another chance to connect the city to the edge by a connective linear green space.



existing railroad canal





landscape - park systems

pier's park



## *site gestures*

There are two equally important gestures in the landscape that initiated this design process: the movement from the land out to the water and the movement from the water into the land. By working on the edge of these two conditions, the project attempts to express coherently a new understanding of this edge.

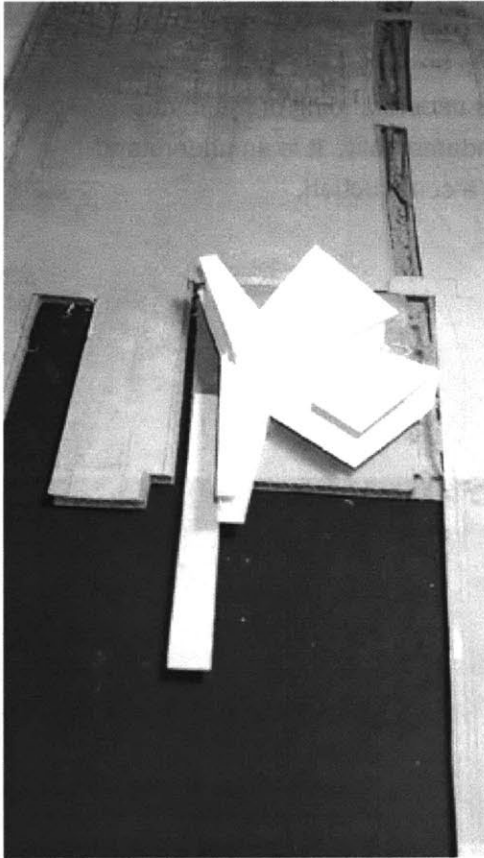
The approach from the water and land are distinguished in Italo Calvino's city of Despina, that displays one face to the traveler from land, and another to the traveler arriving from sea. This is an important distinction since the two approaches are not equal, but equally considered. The experience itself is very different.

*study model*

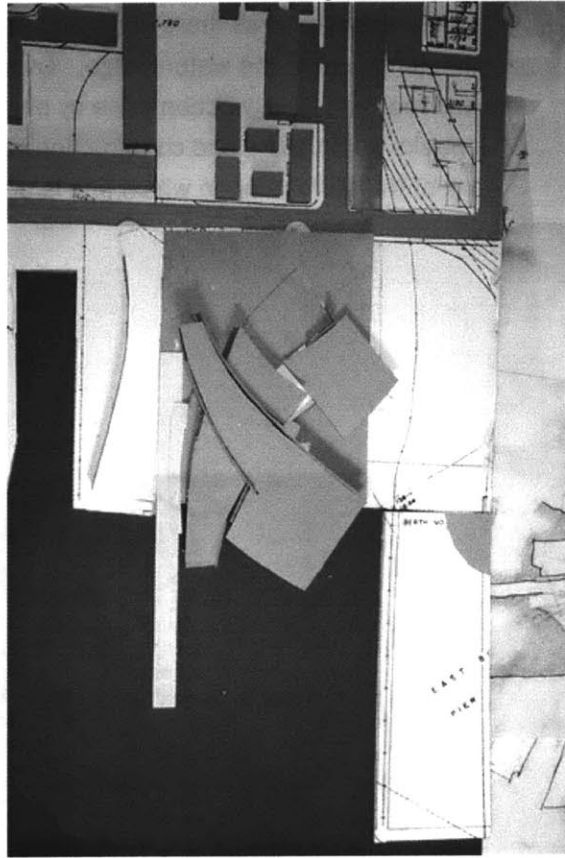




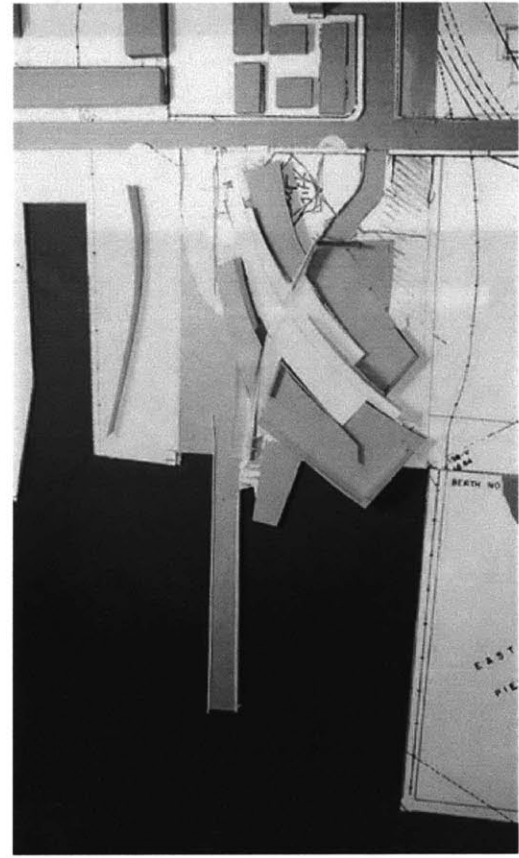
*study model 1/100" = 1'-0"*



*study model 1/50" = 1'-0"*



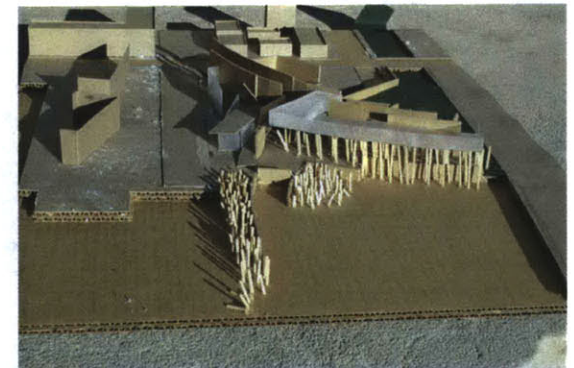
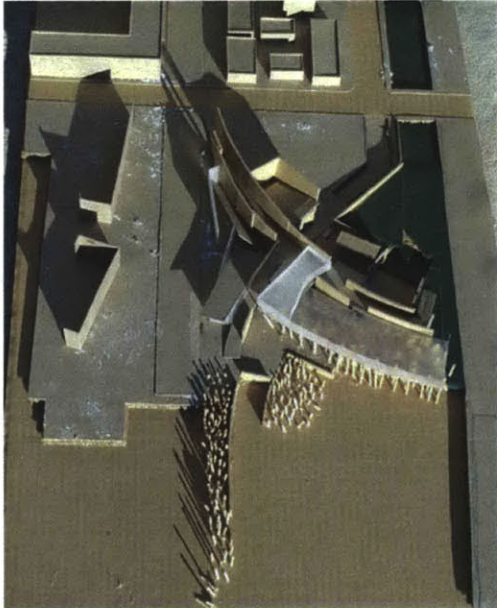
*study model 1/50" = 1'-0"*





*language: walls and piers*

From these gestures there appeared walls. Walls that carved into the land, and swept up at the waters edge. Landing on the water is a much lighter and more delicately action done by piers. An understanding of the forces speaks of structure and construction but fundamentally, it is an understanding of the surface upon which one is placing a construction.

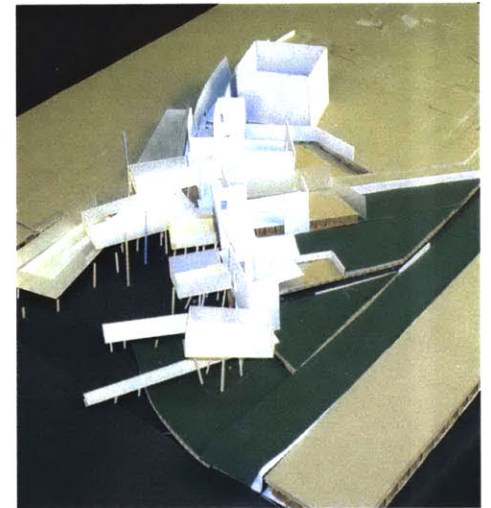


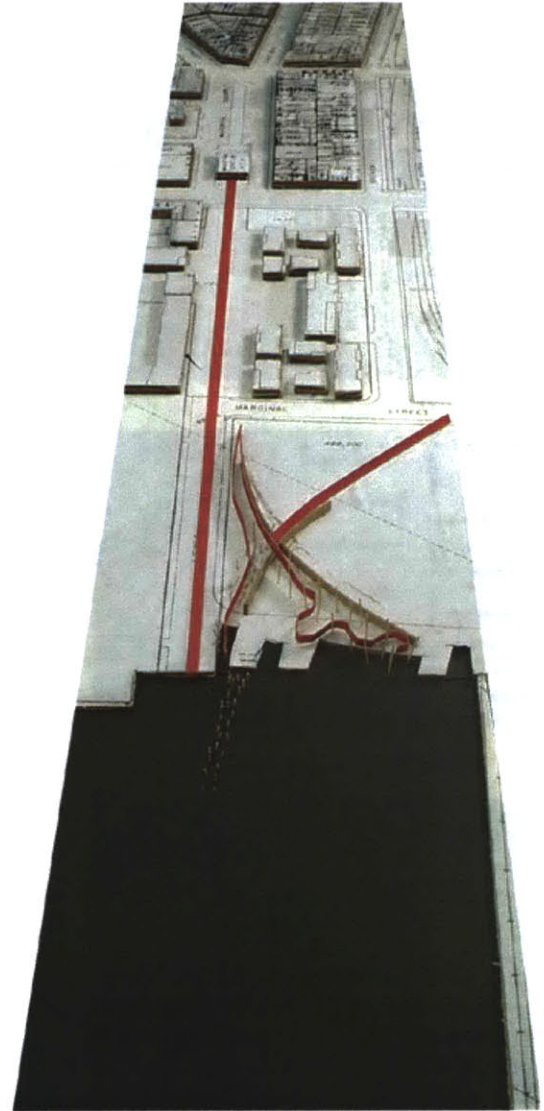
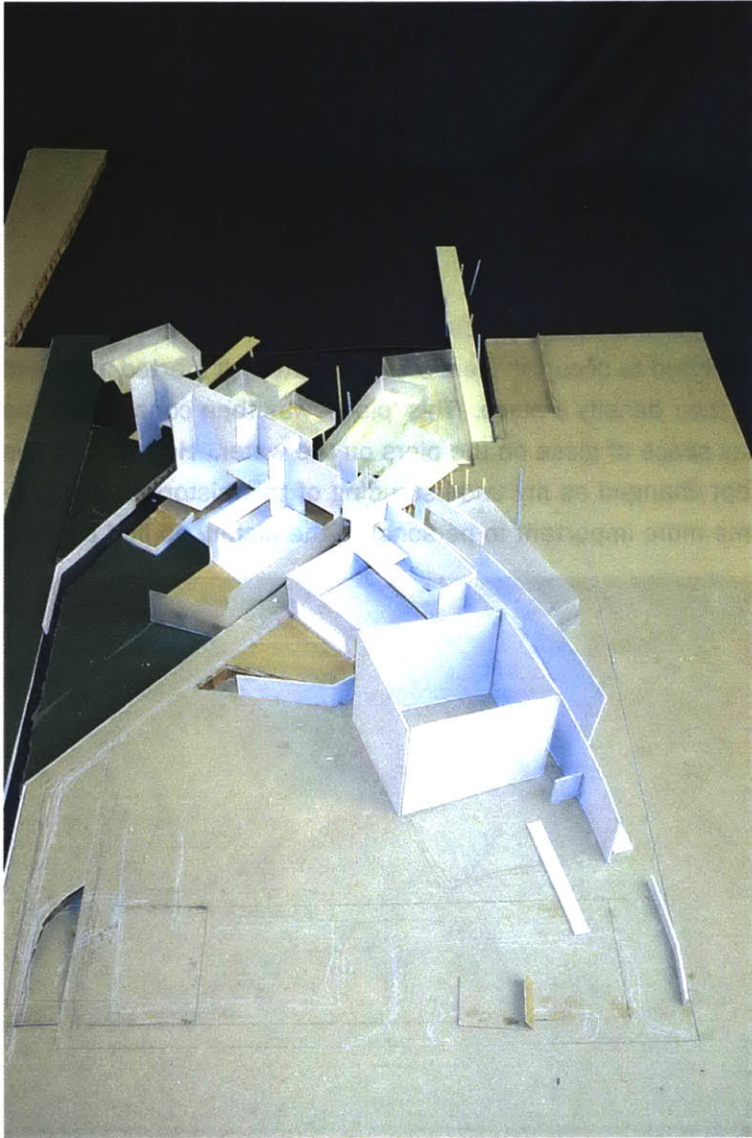


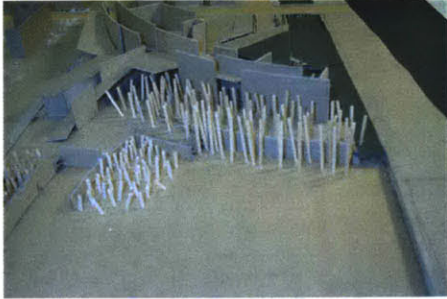


## *paths of movement*

The building is two sided. It is meant to be approached from both the land and the water. Although these two approaches were considered equally, the experience themselves are not equal. The wall centers the project and is the primary circulation route. Various spaces all peel off of this spine. However, it is not meant to be a rigid spine, but rather a tissue, or fluid spine through which one can navigate through the building, and the site, thereby understanding the relationship of land and water. From the water one approaches into a plaza and up perpendicular to the wall. From the land, the approach is tight and compressed, releasing only when one has ramped up and can look out across the harbor.





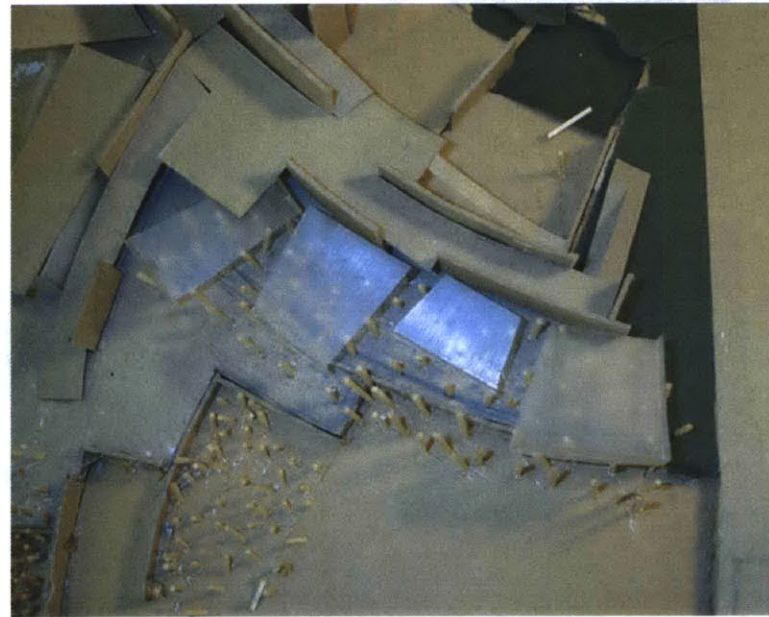


## *a re-understanding*

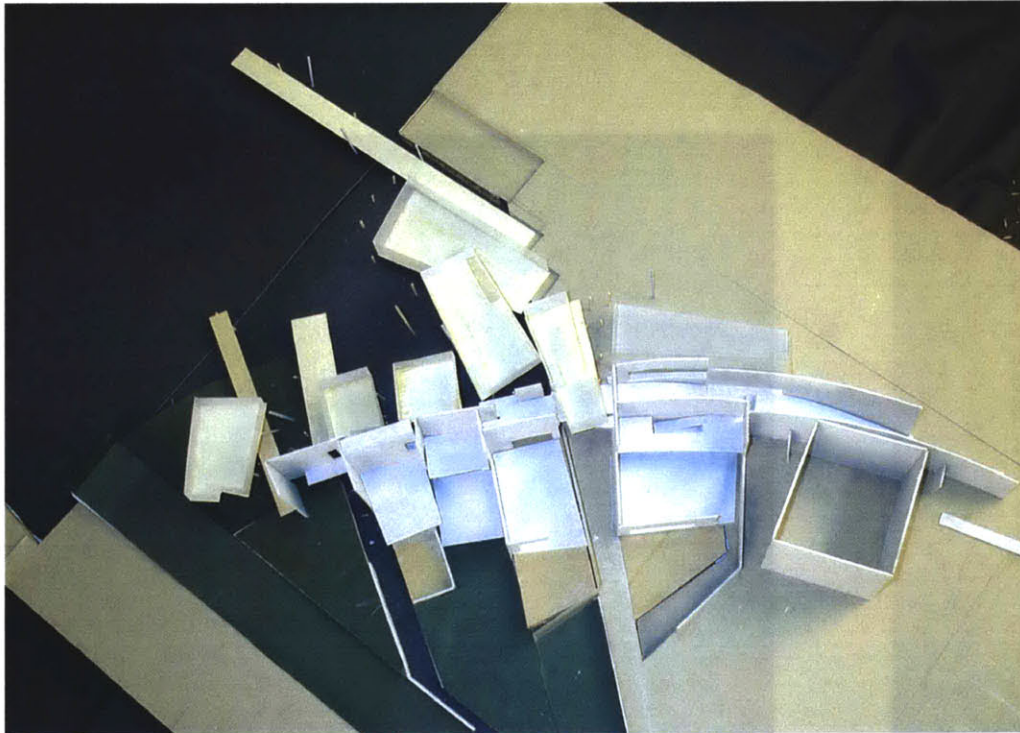
An important development in the design process had to do with the main museum space of the building intended to occur on piers over the water. It started as a field of piers that created by their density a place. This 'place' was then conceived of as a large gallery or display space of glass on the piers on the water. However, at this point the design concept changed as my understanding of this history of immigration changed. It became more important to personalize the history, to find a narra-



tive that had meaning to one's own identity and place in contemporary terms. The scale and sorts of sentimental displays that would occur in the larger space of a museum became undesirable and the space became broken into a series of smaller spaces that could be inhabited by individuals or small groups researching, identifying and tracing their personal stories. These photos of a study model reveal this transformation from a site with piers defining a raised place, to a large scale room to several smaller places.

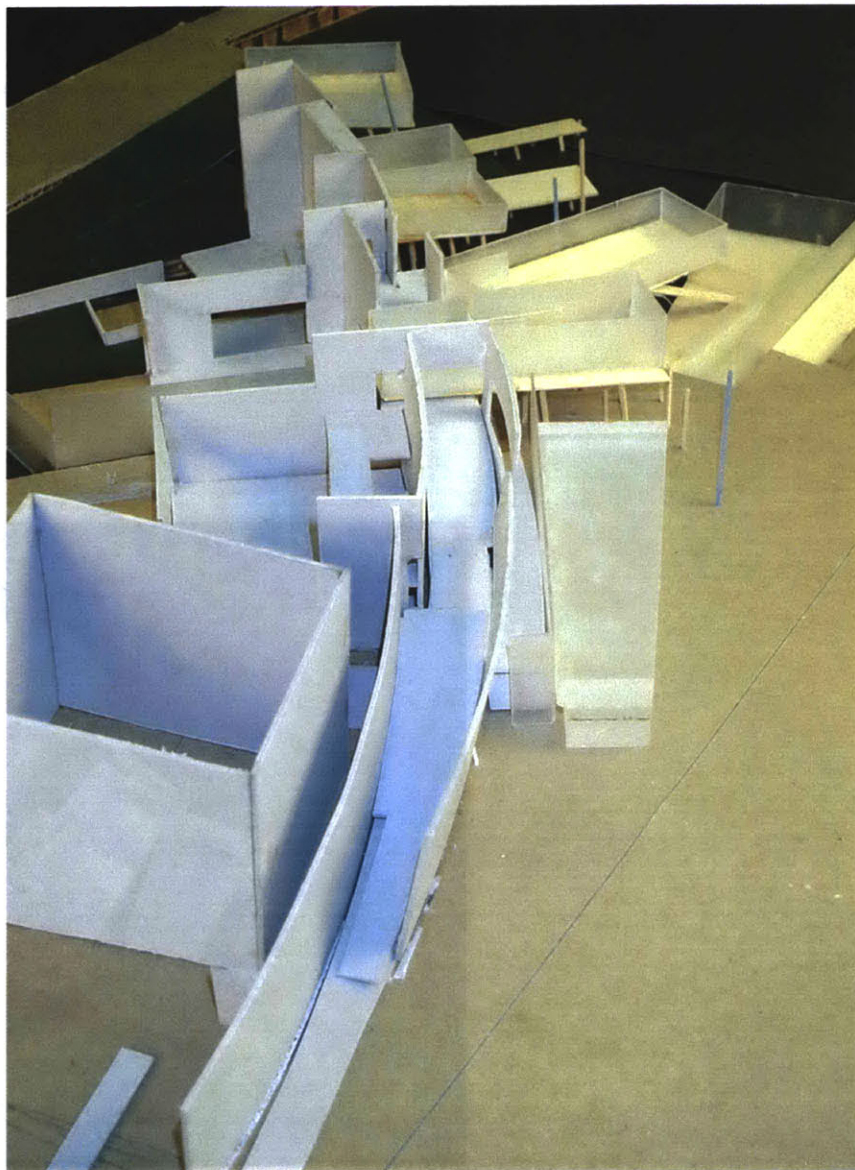


## *mediation*

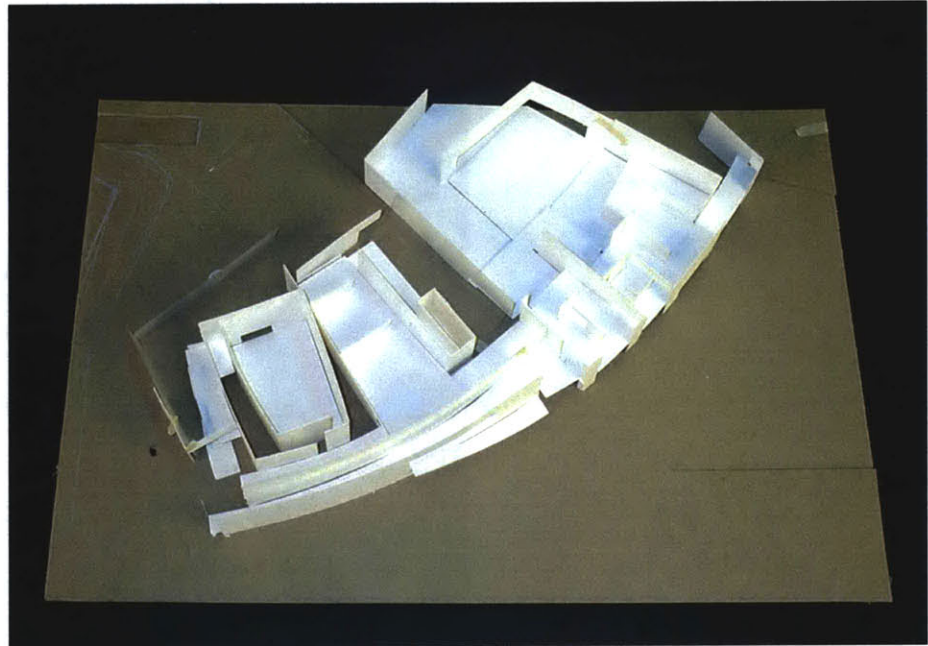


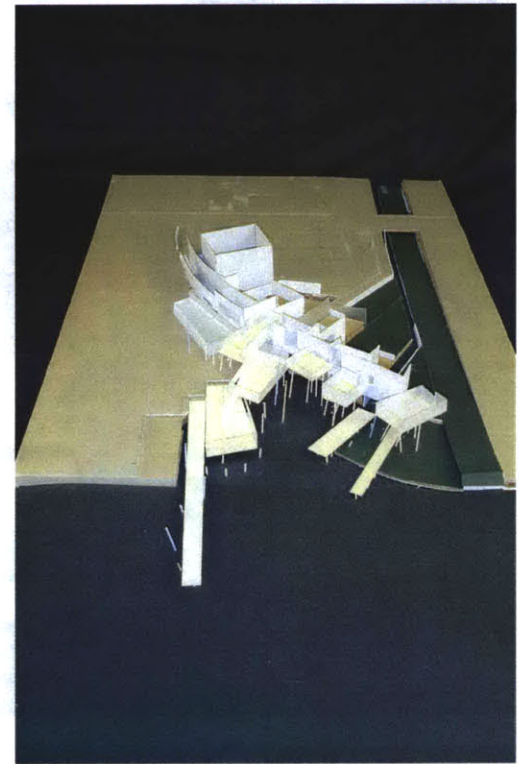
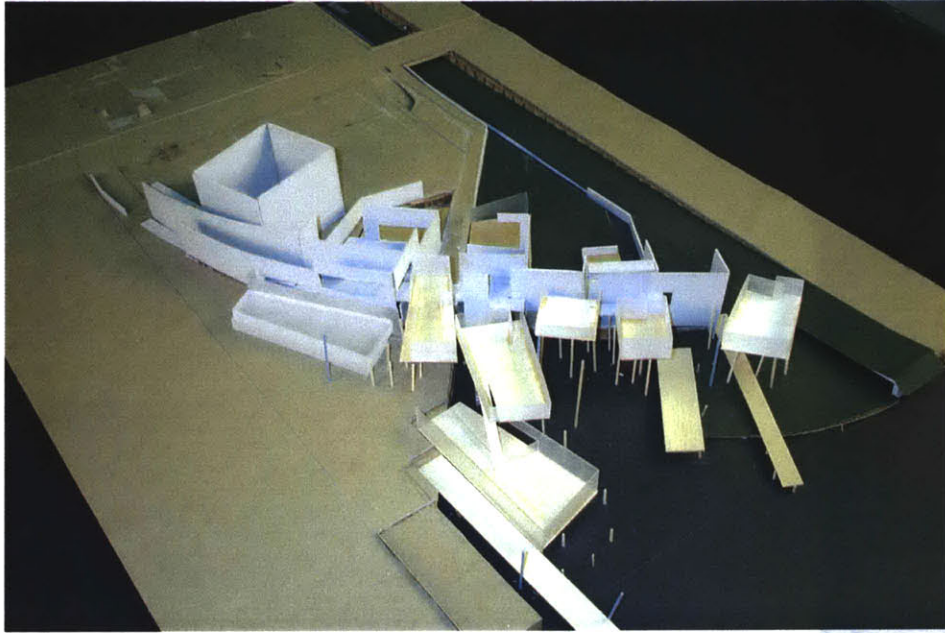
The wall is meant to negotiate the conditions of land and water not by blocking them but by allowing them to blur together through it. As one navigates along the curve wall an understanding of place begins to occur with glimpses of both the land and water. The wall mediates the two conditions but by allowing permeations of light and view through it begins to blur these distinctions.

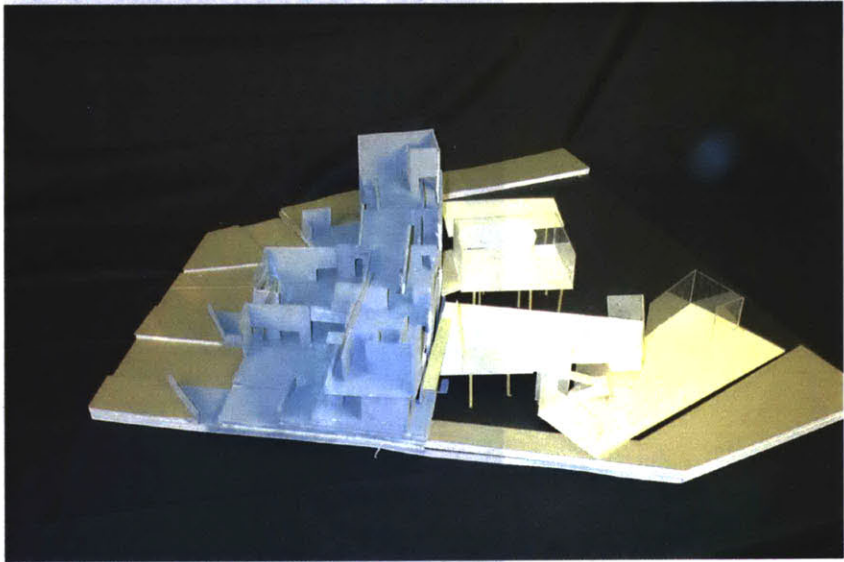
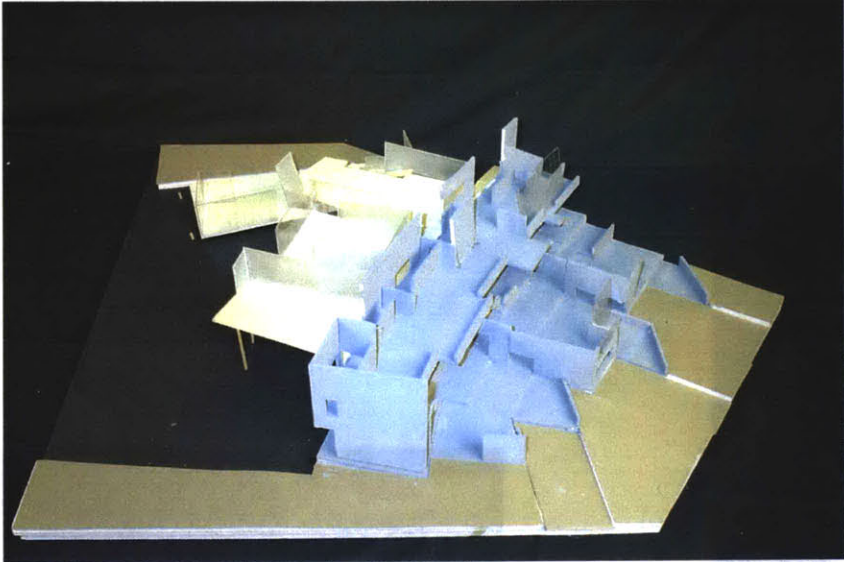


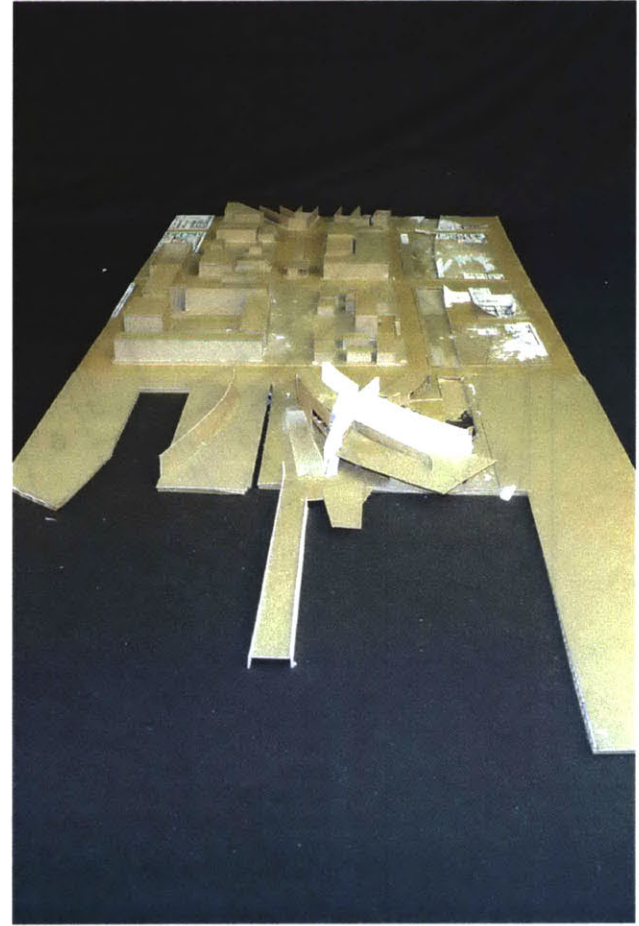
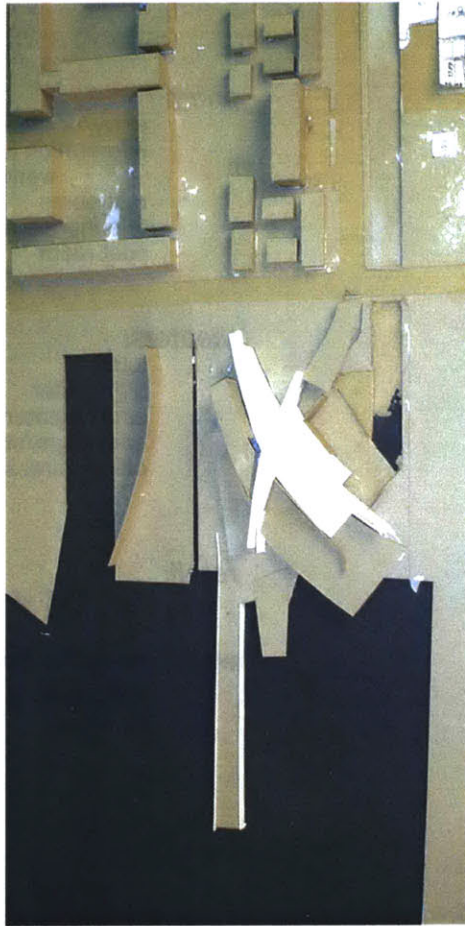


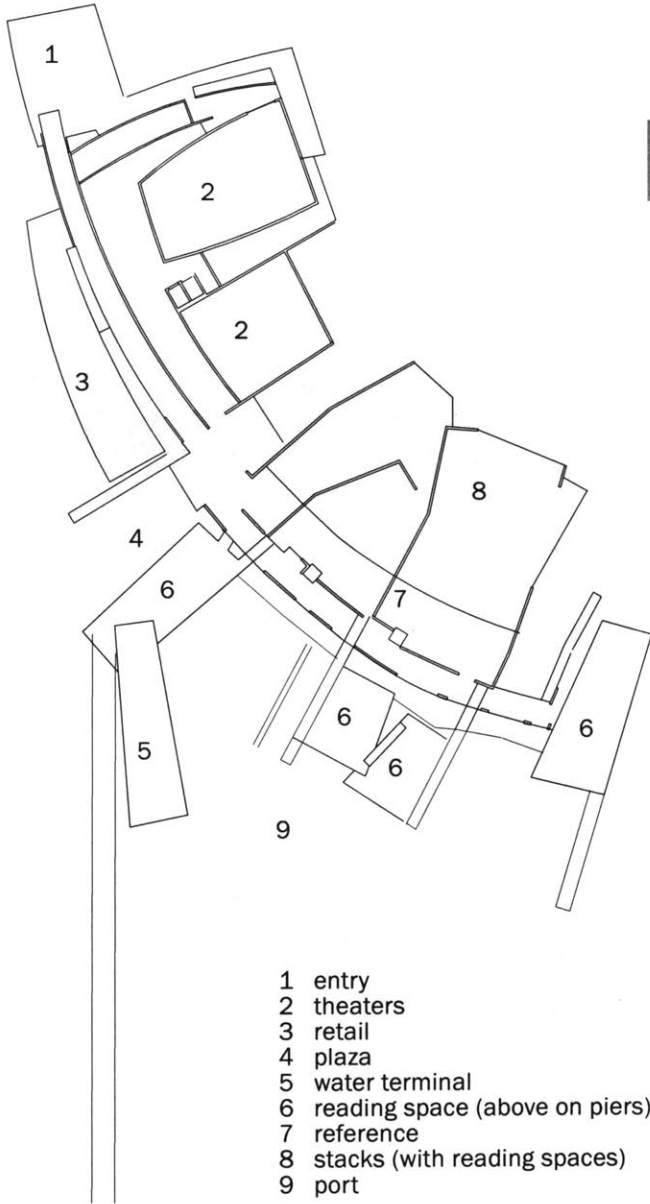
*study models*











- 1 entry
- 2 theaters
- 3 retail
- 4 plaza
- 5 water terminal
- 6 reading space (above on piers)
- 7 reference
- 8 stacks (with reading spaces)
- 9 port

**program**

**entry:**

entry/ticketing	400 sf
information kiosk	300 sf
workroom/storage	200 sf
restrooms	600 sf
telephones/atm	150 sf
coat room	150 sf
	<b>4200 sf</b>

**theaters:**

lobby	5000 sf
big theater	4500 sf
small theater	3000 sf
backstage/storage	1500 sf
offices/dressing 4 @ 300 sf	1200 sf
	<b>14200 sf</b>

**retail:**

3 @ 1200 sf	<b>3600 sf</b>
-------------	----------------

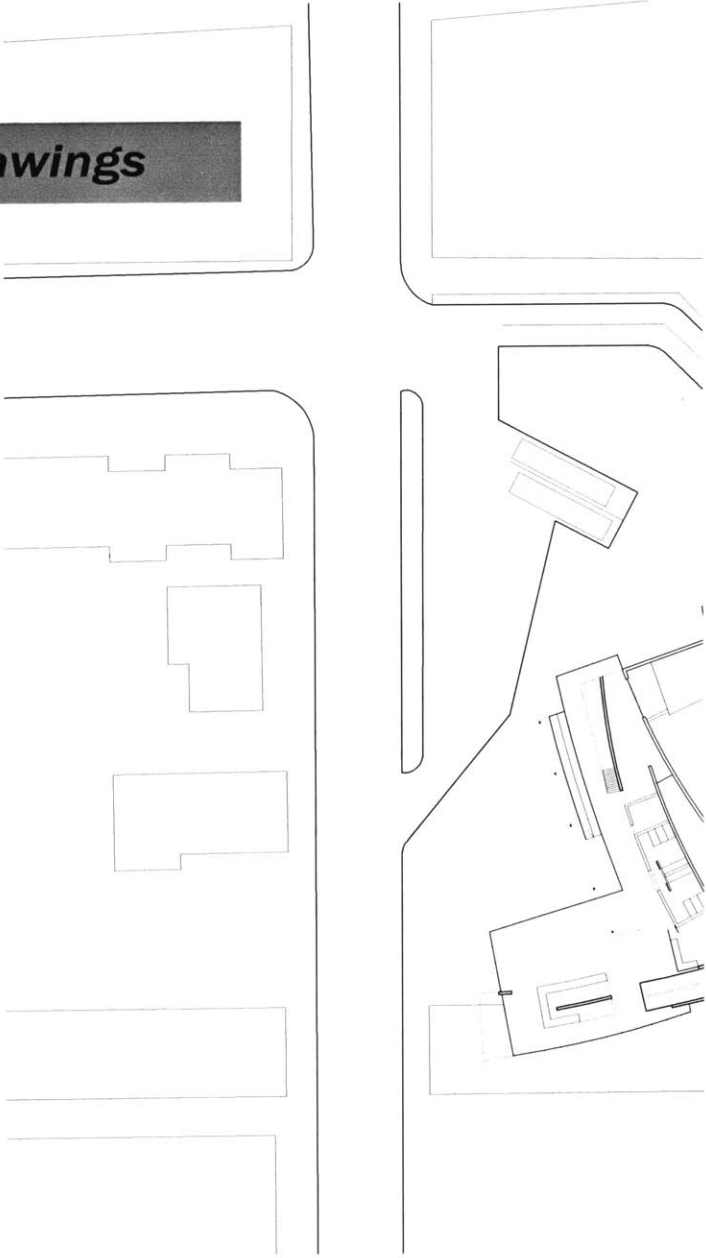
**water transit terminal:**

waiting room	2200 sf
ticketing	800 sf
	<b>3000 sf</b>

**immigration library:**

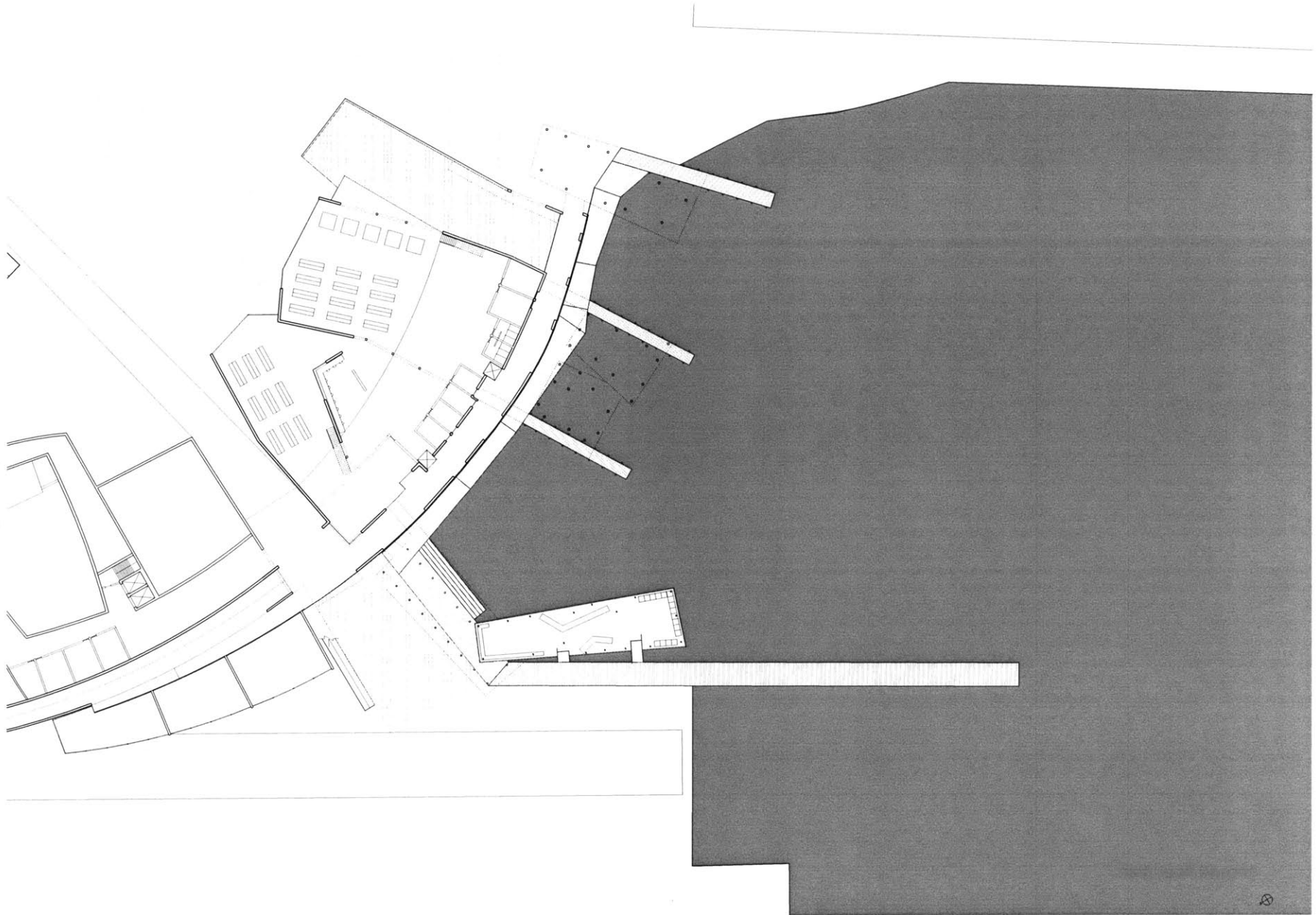
1st floor:		
offices 4 @ 150, 2 @ 400		1400 sf
stacks		6000 sf
restrooms		300 sf
reading areas		
multi-media room	700 sf	
map area	1500 sf	
mezzanine:		
reference		5000 sf
2nd floor:		
general computer research		2500 sf
multi-media		1400 sf
maps		1200 sf
navigational systems		2200 sf
galleries/circulation		4000 sf
		<b>36000 sf</b>
<b>total (with circulation/mech.)</b>		<b>75000 sf</b>

**drawings**

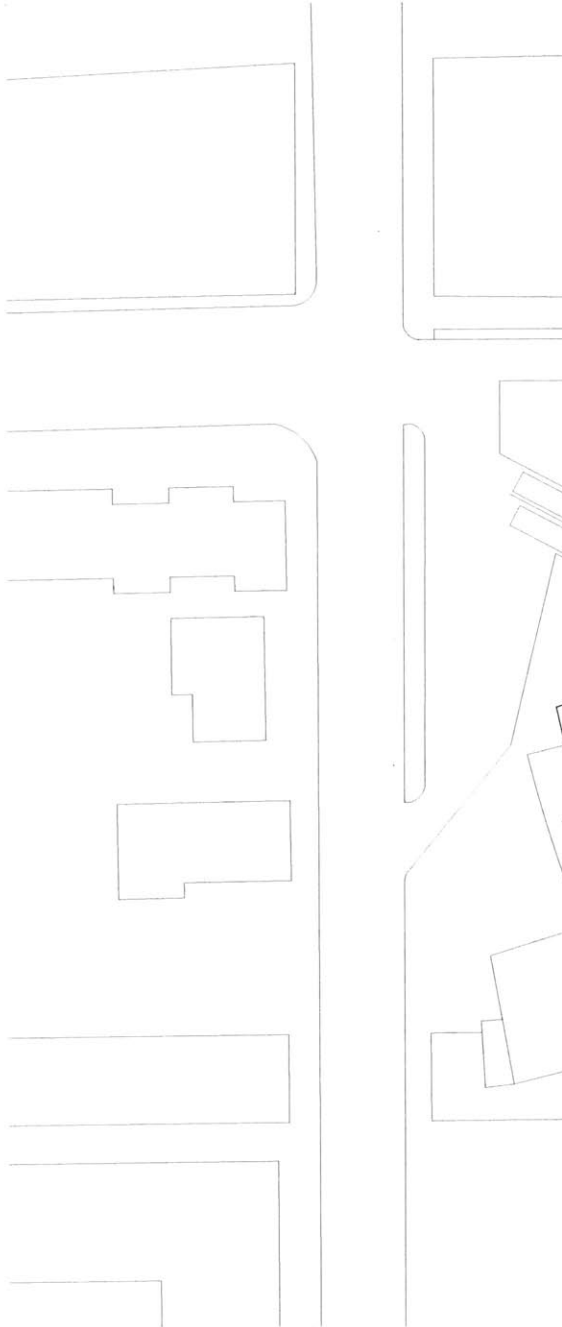


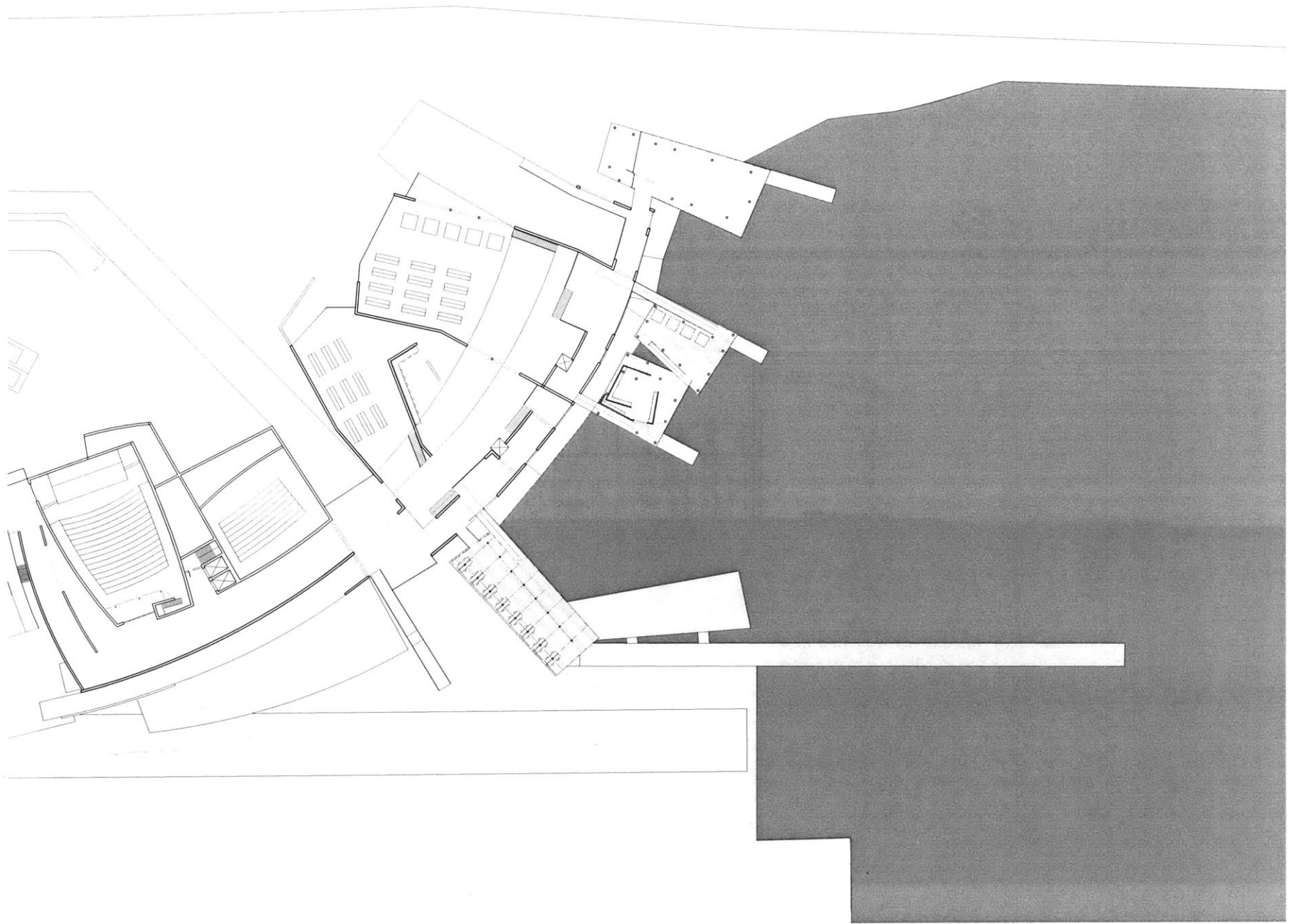
**ground floor plan**

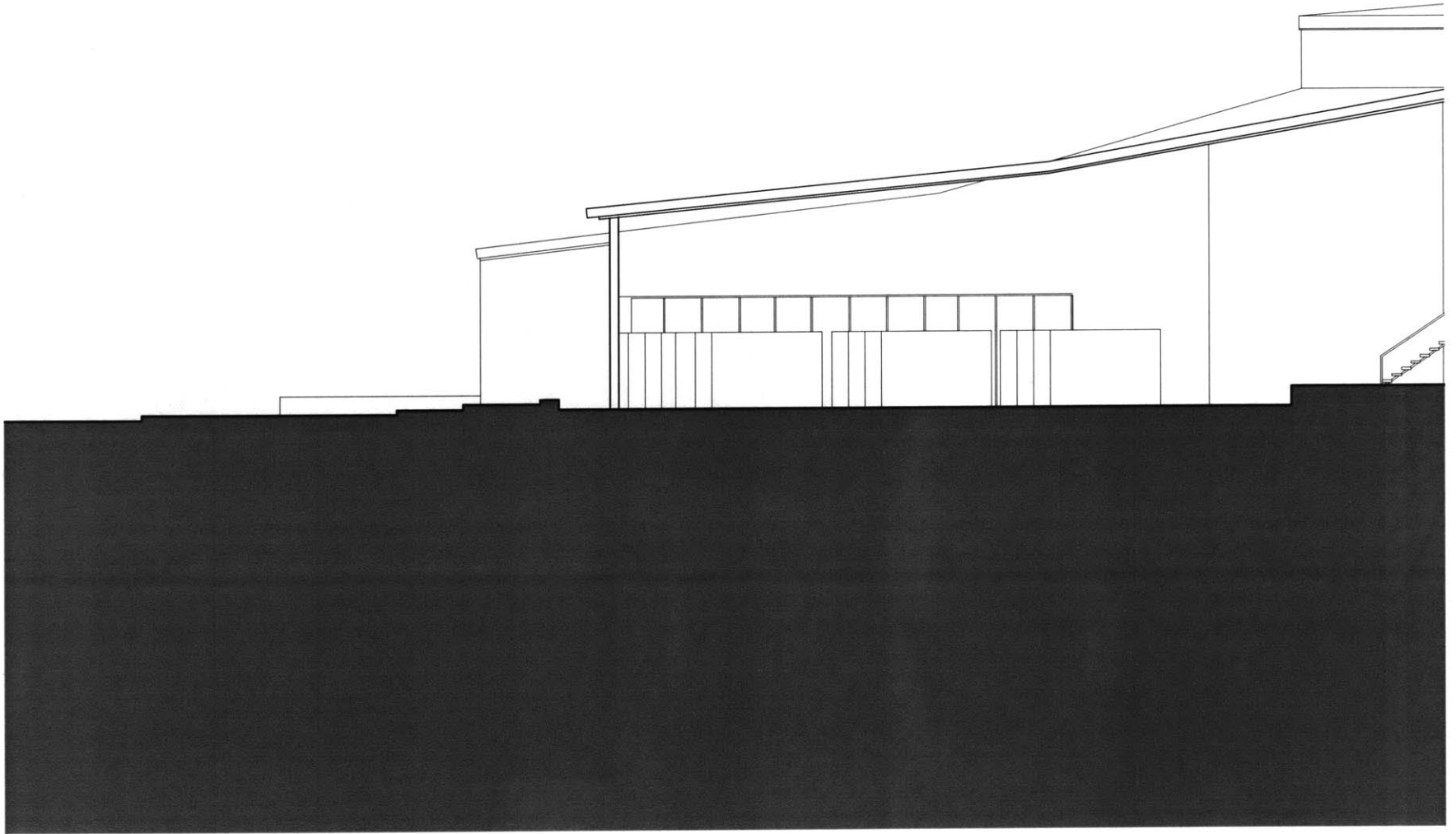


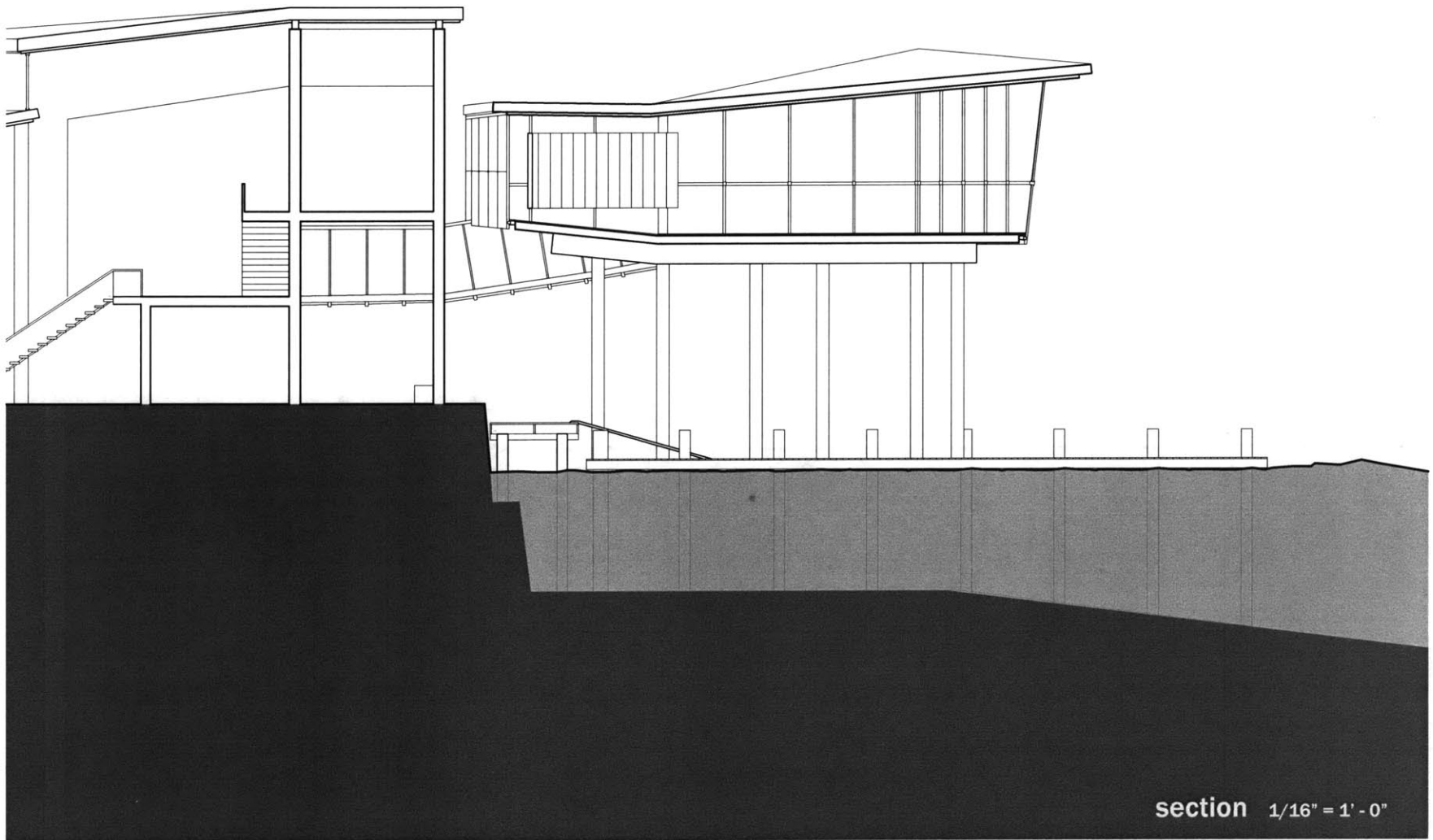


second floor plan

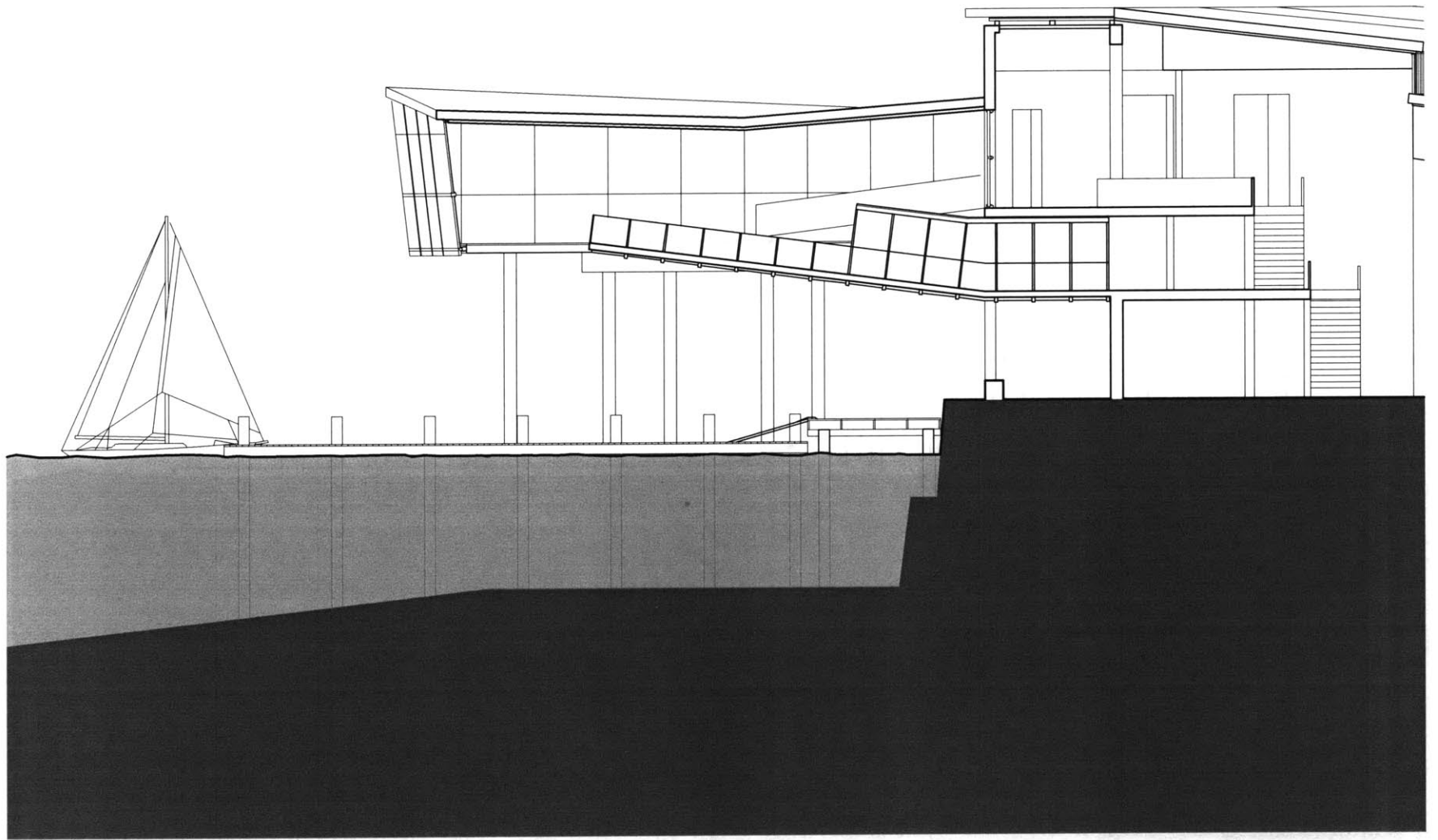


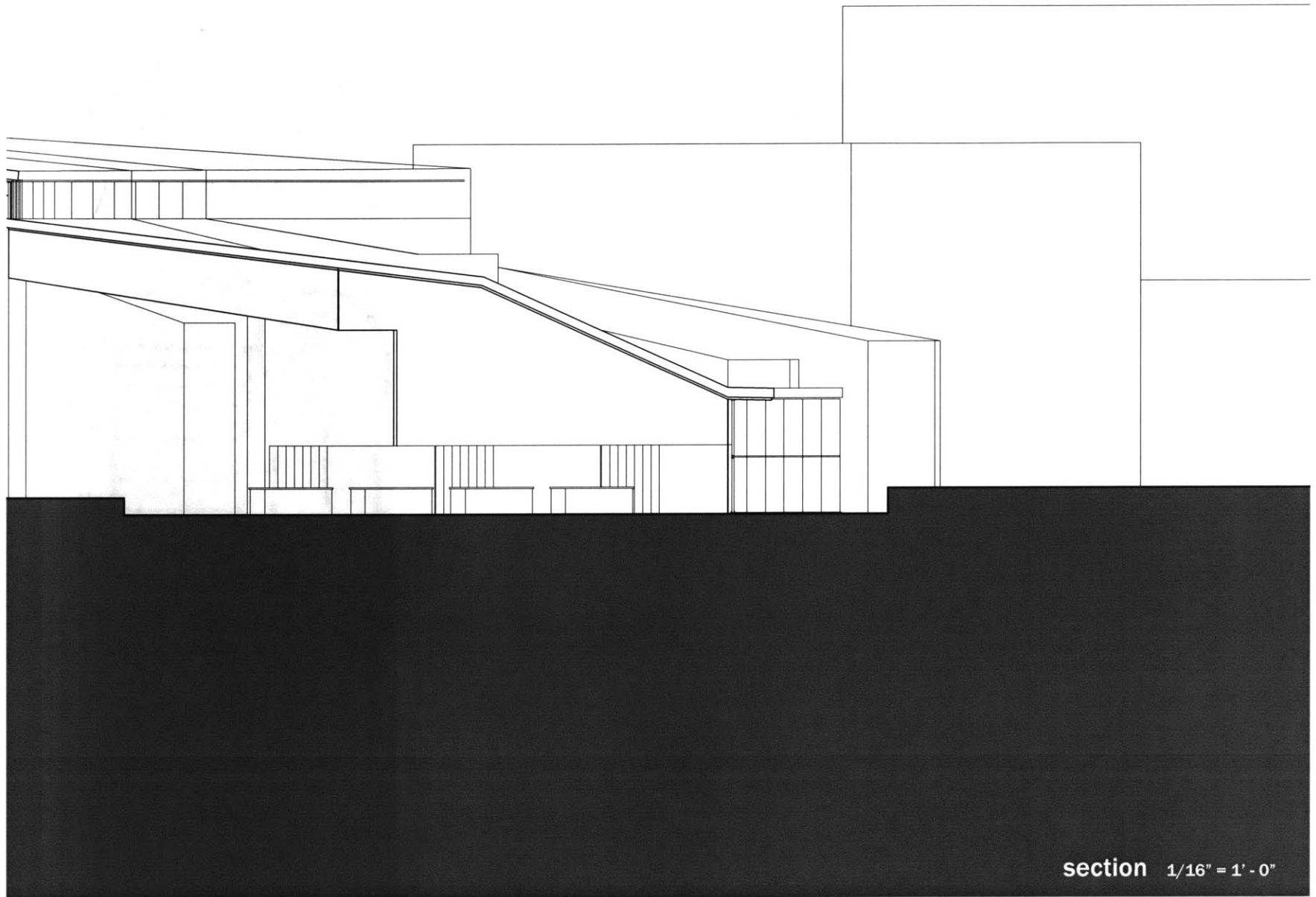






section 1/16" = 1' - 0"



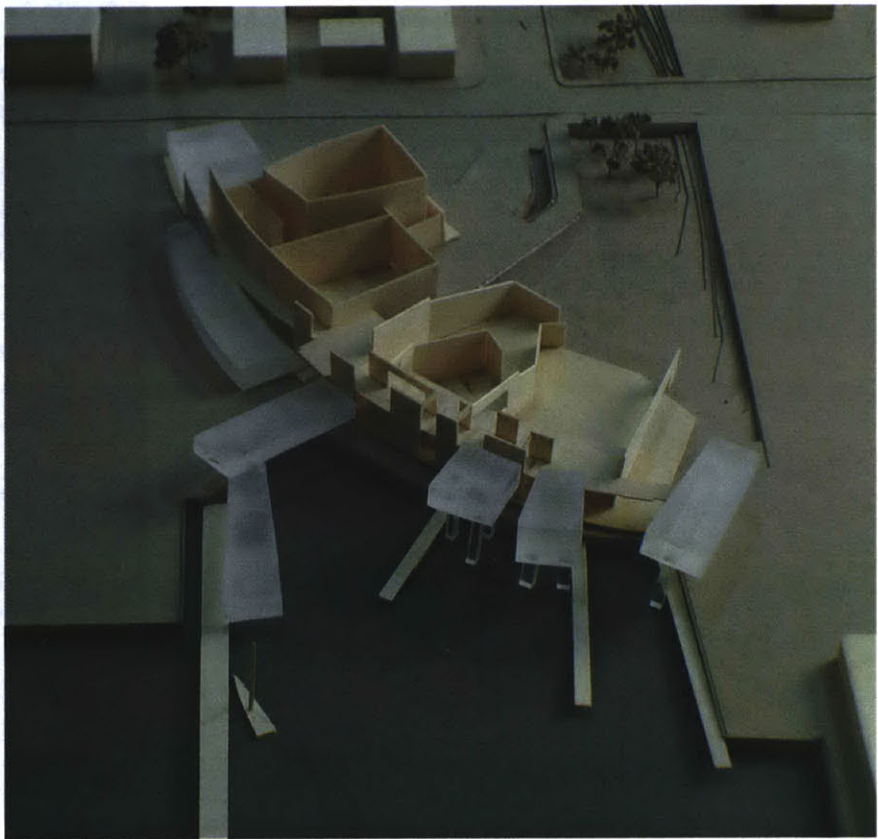


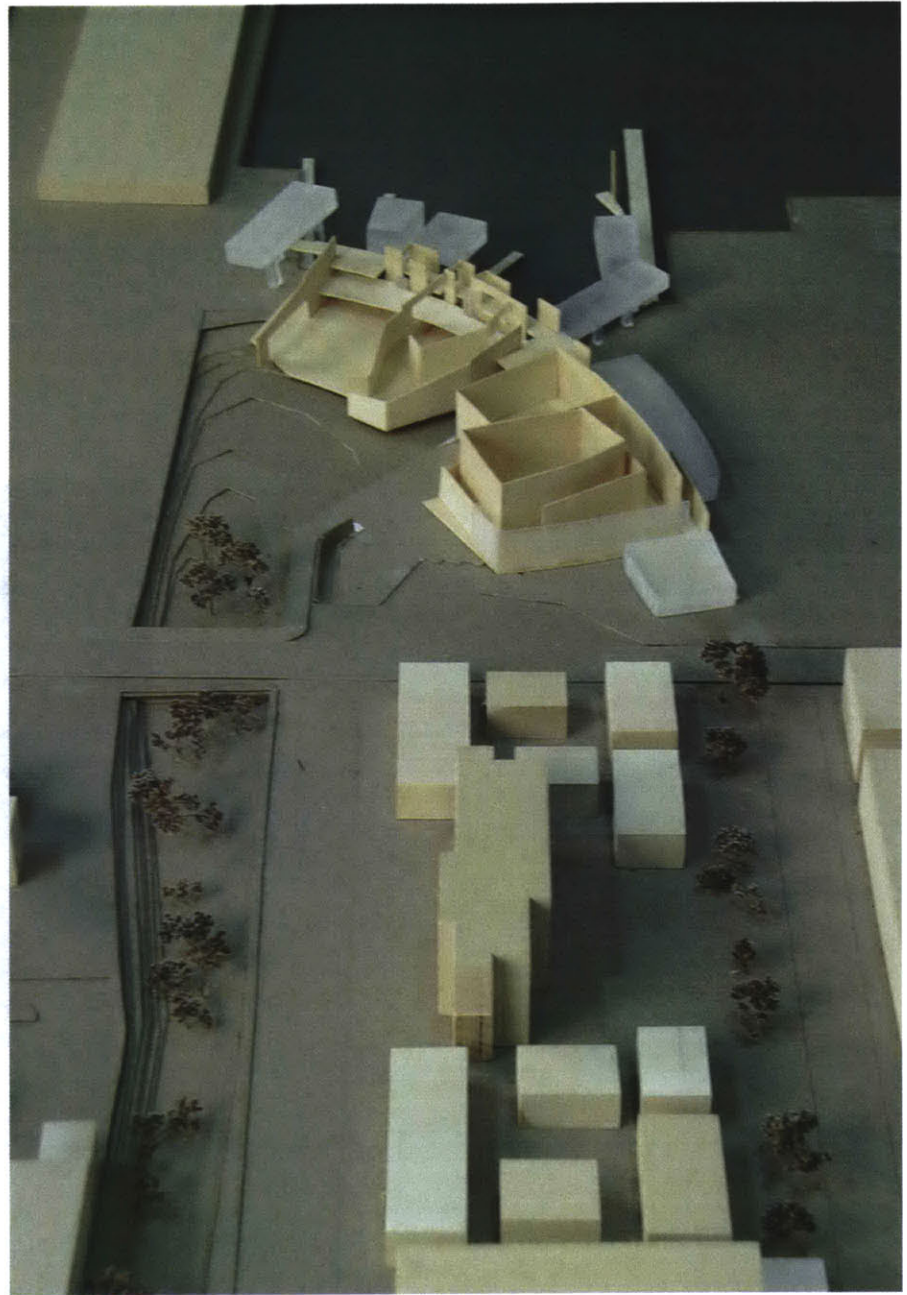
section 1/16" = 1' - 0"

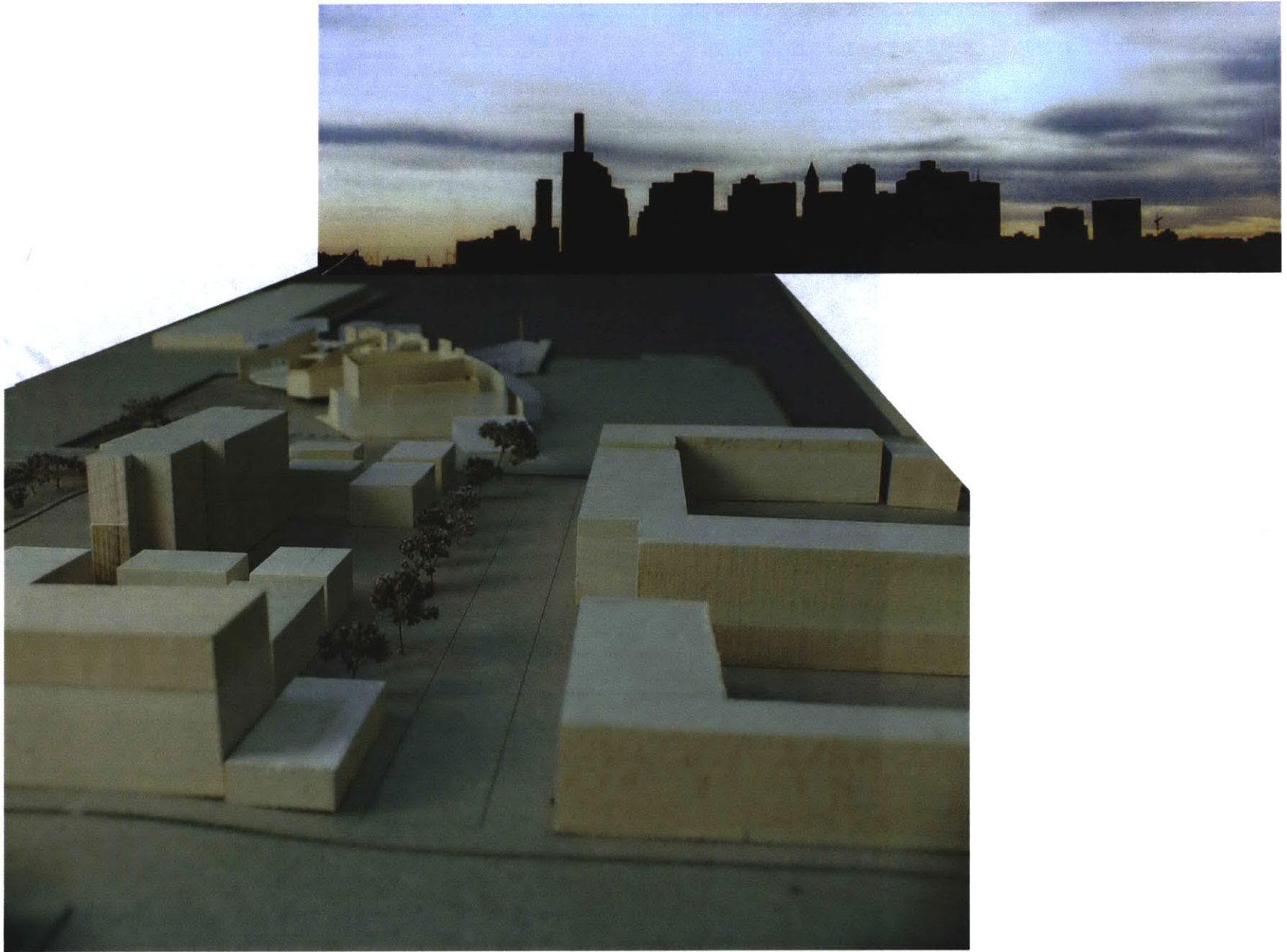
*models*

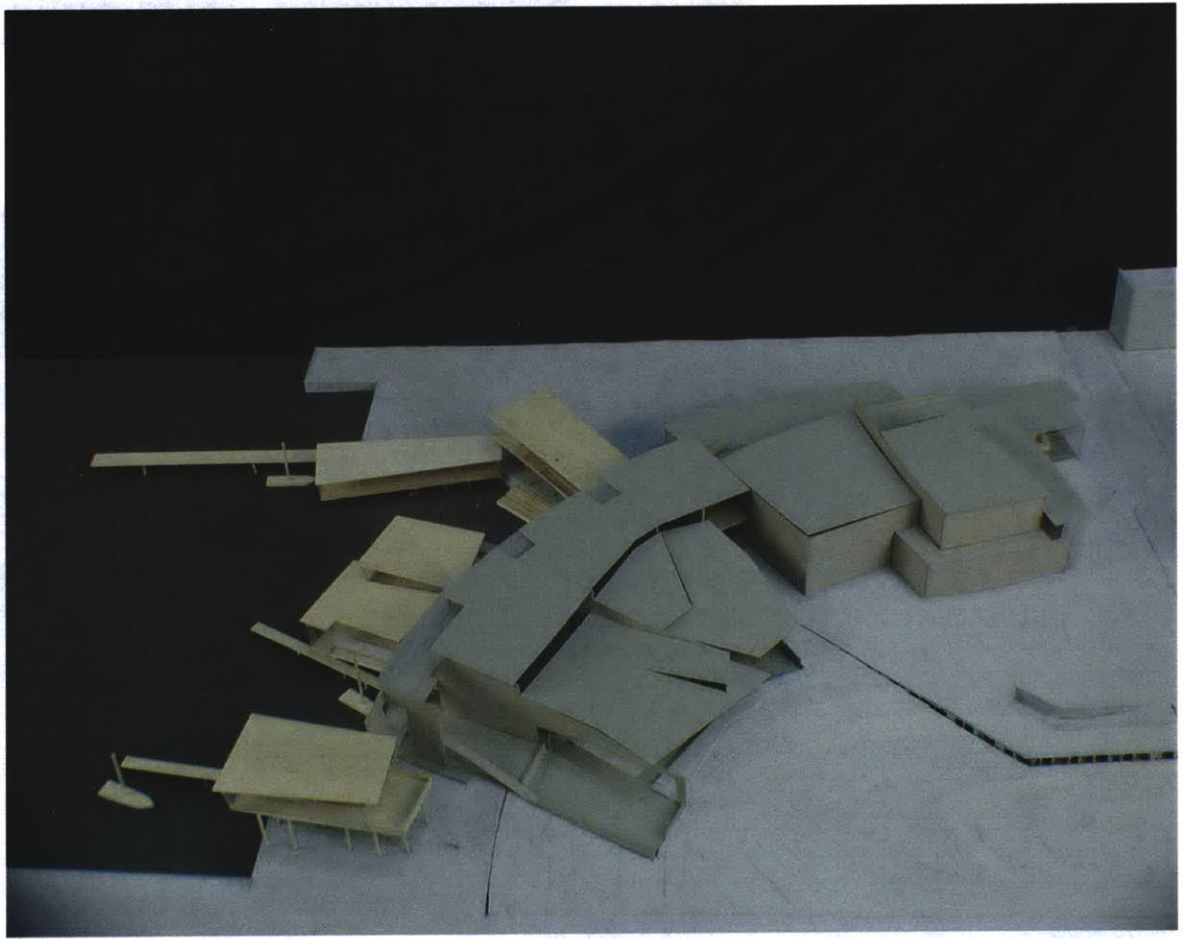


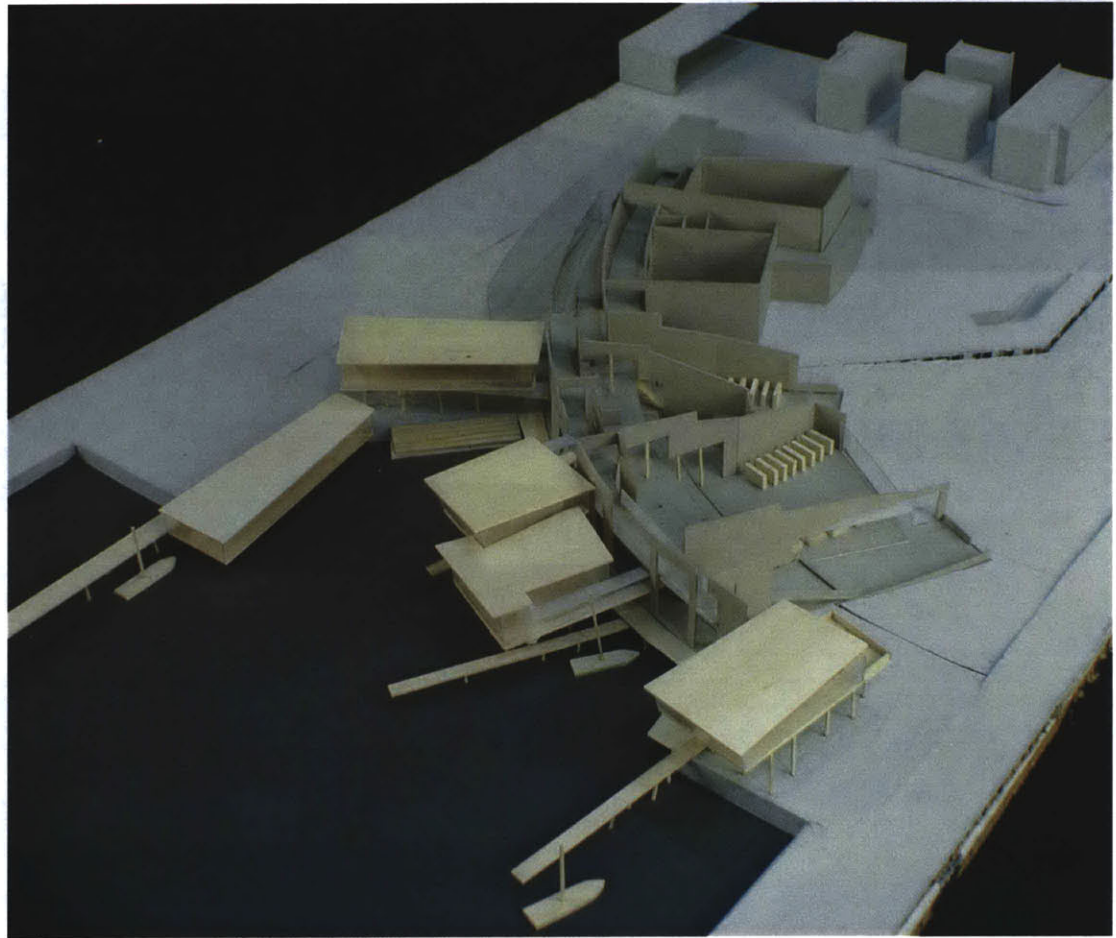


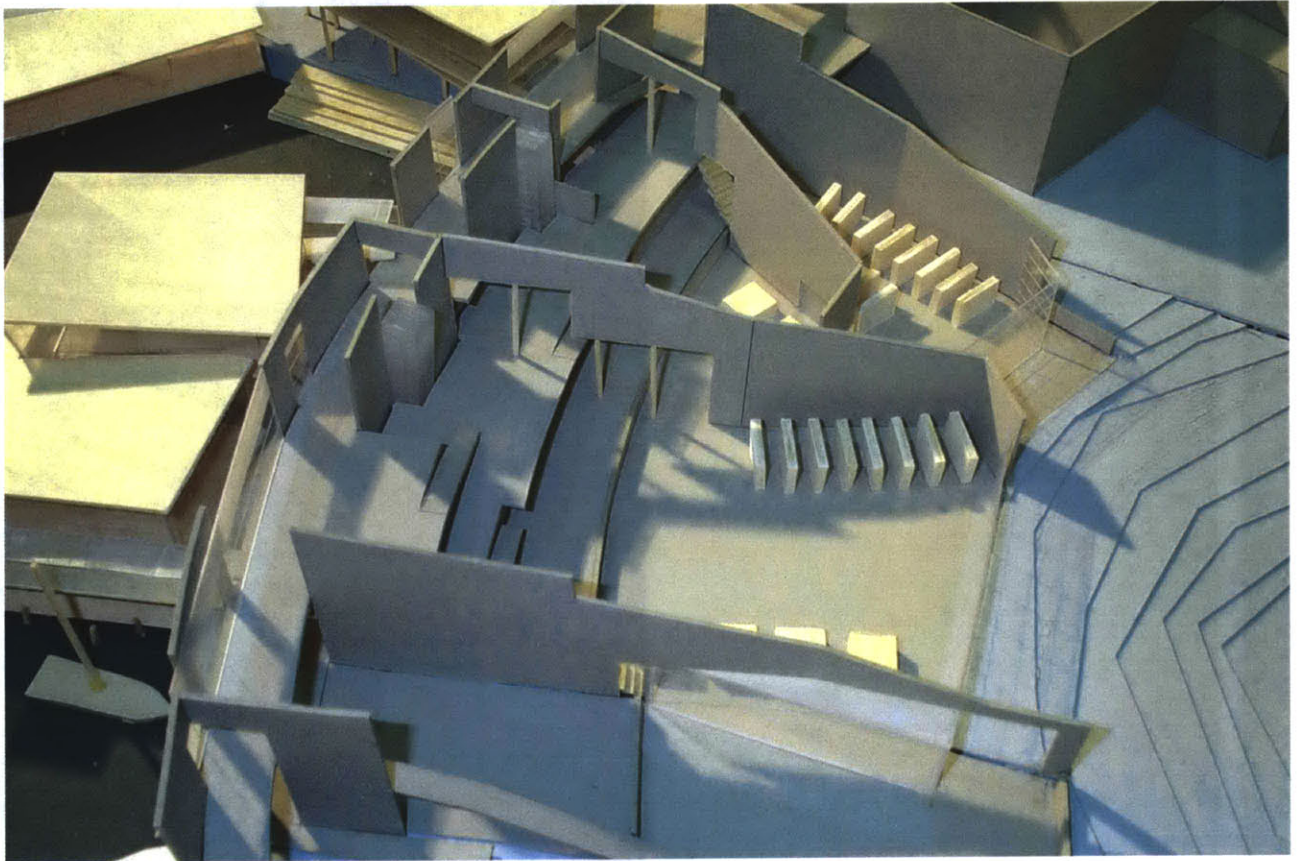
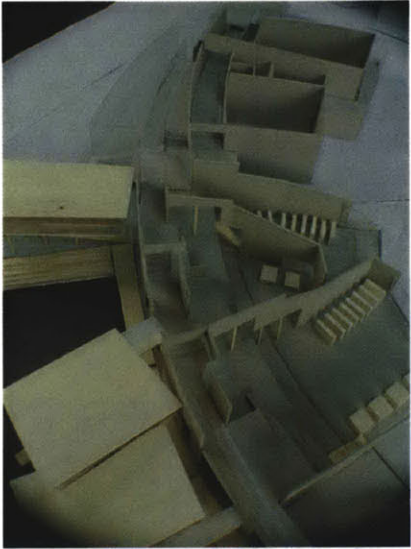


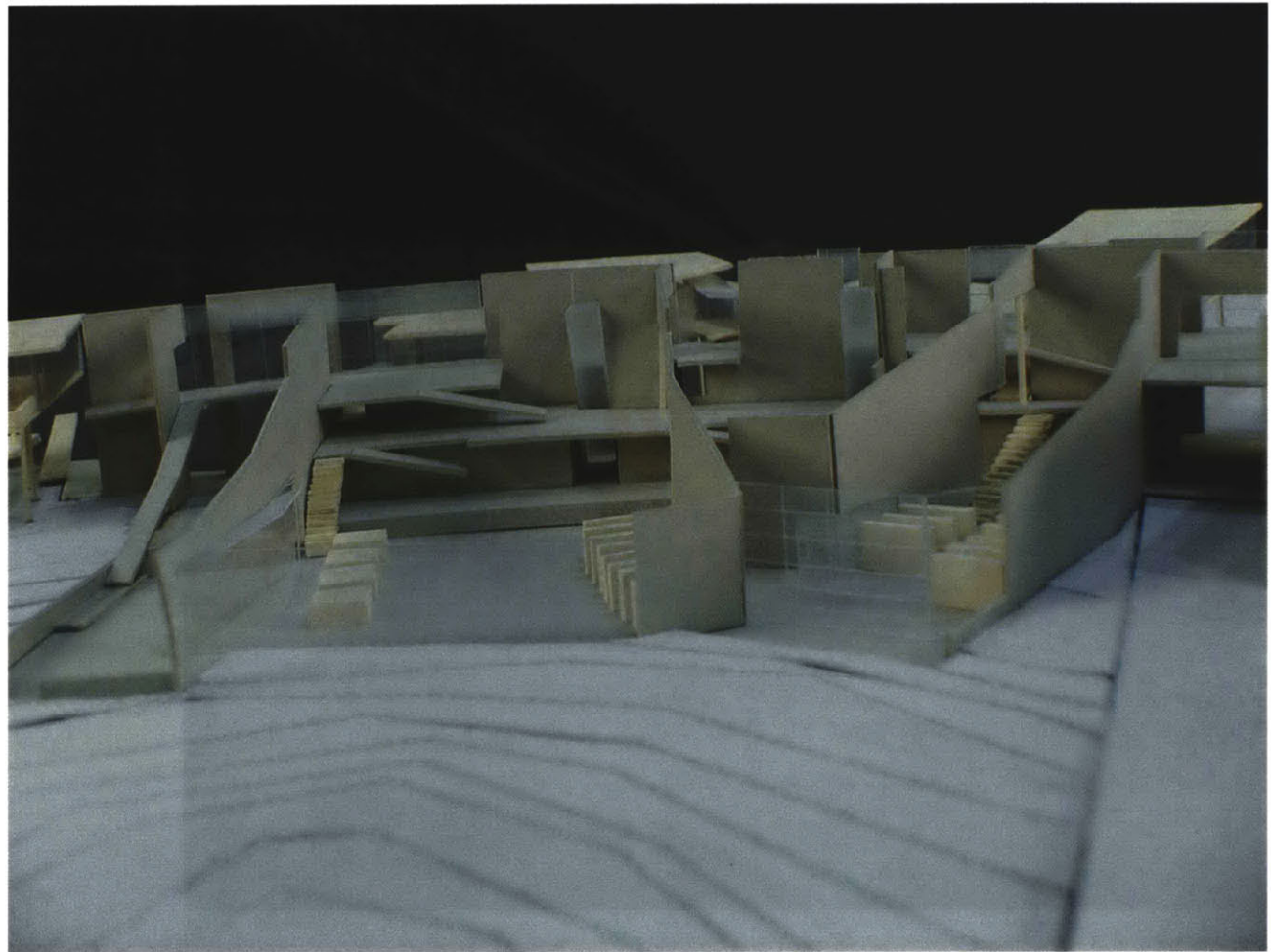






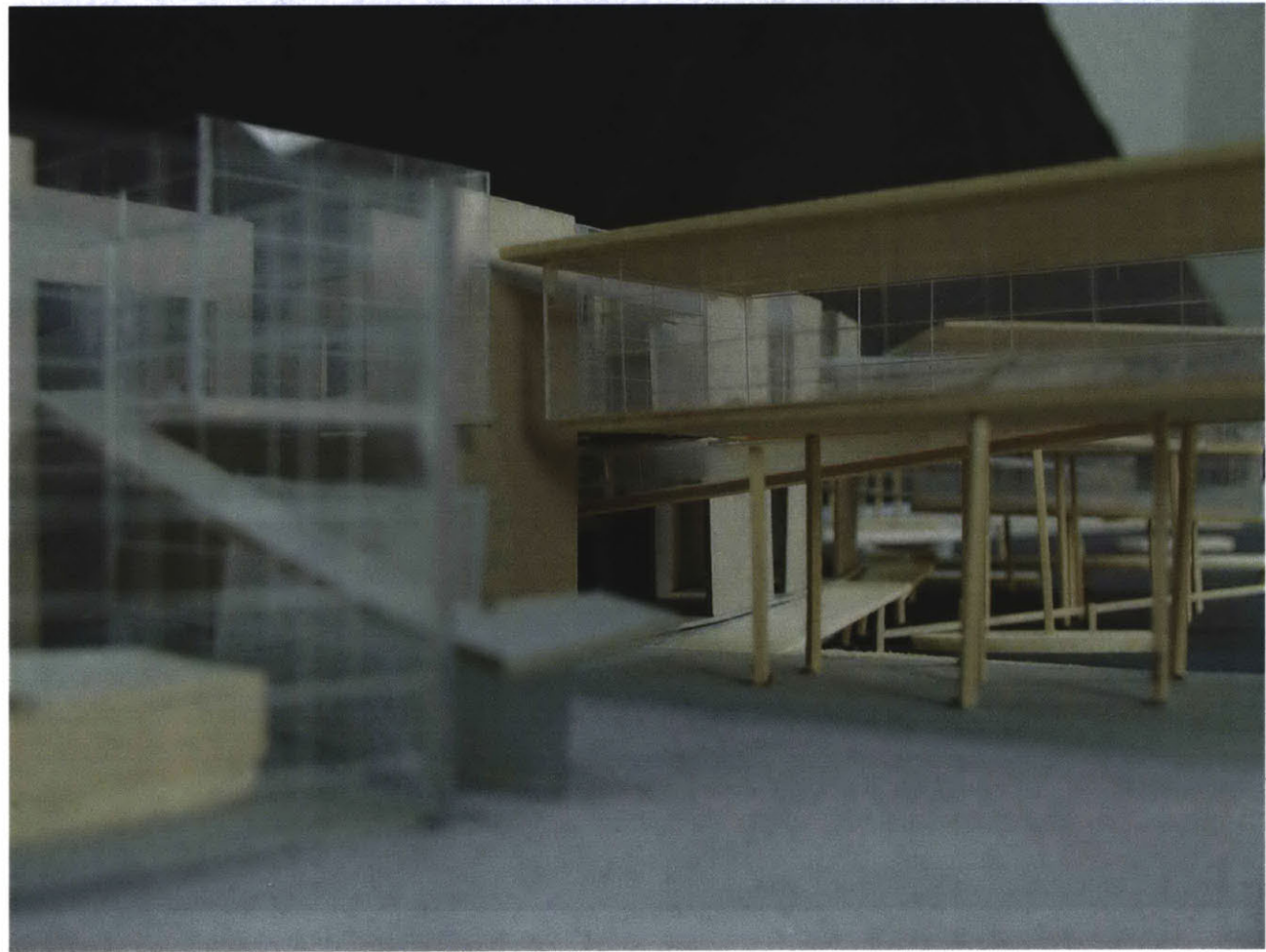


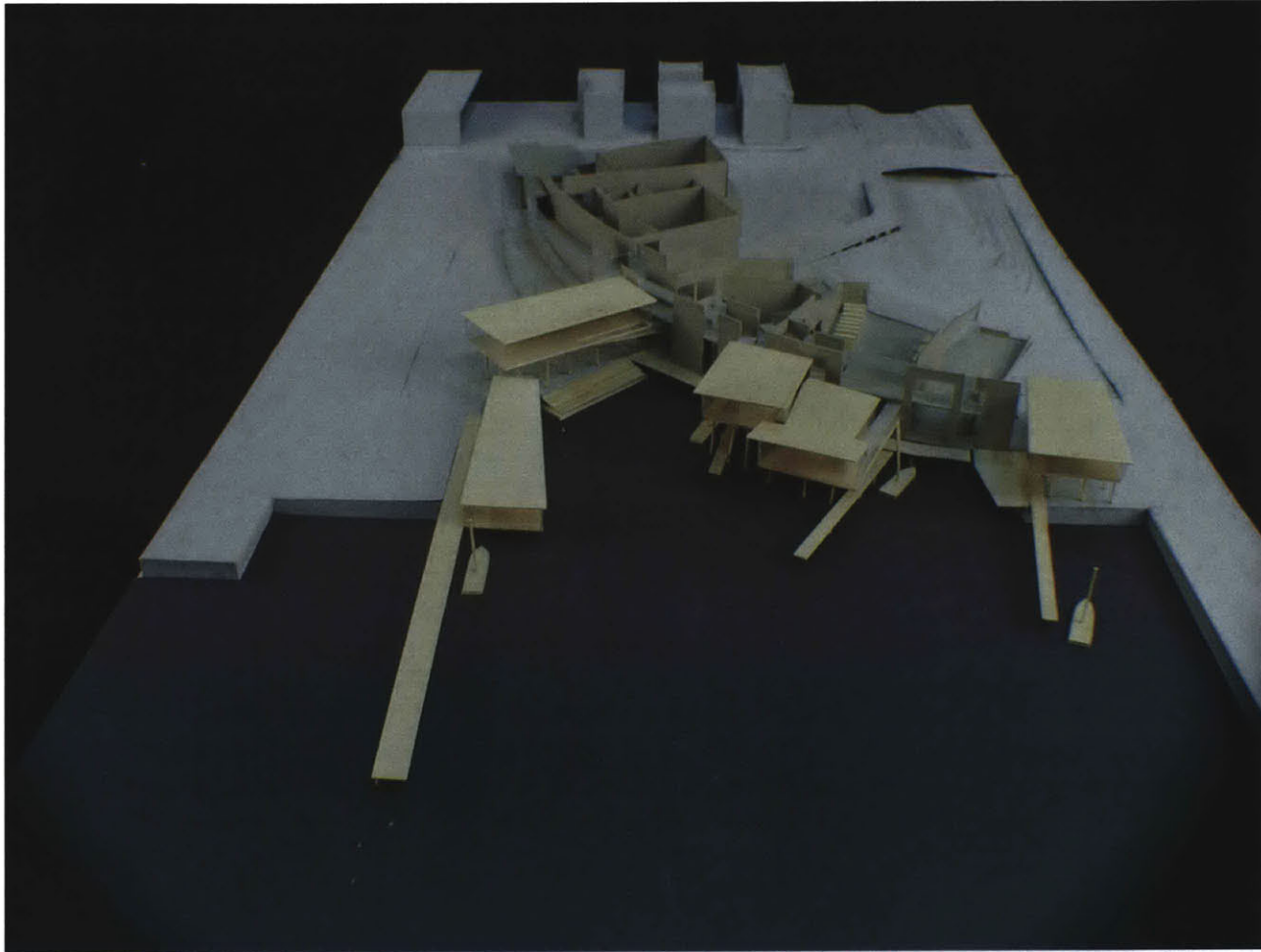


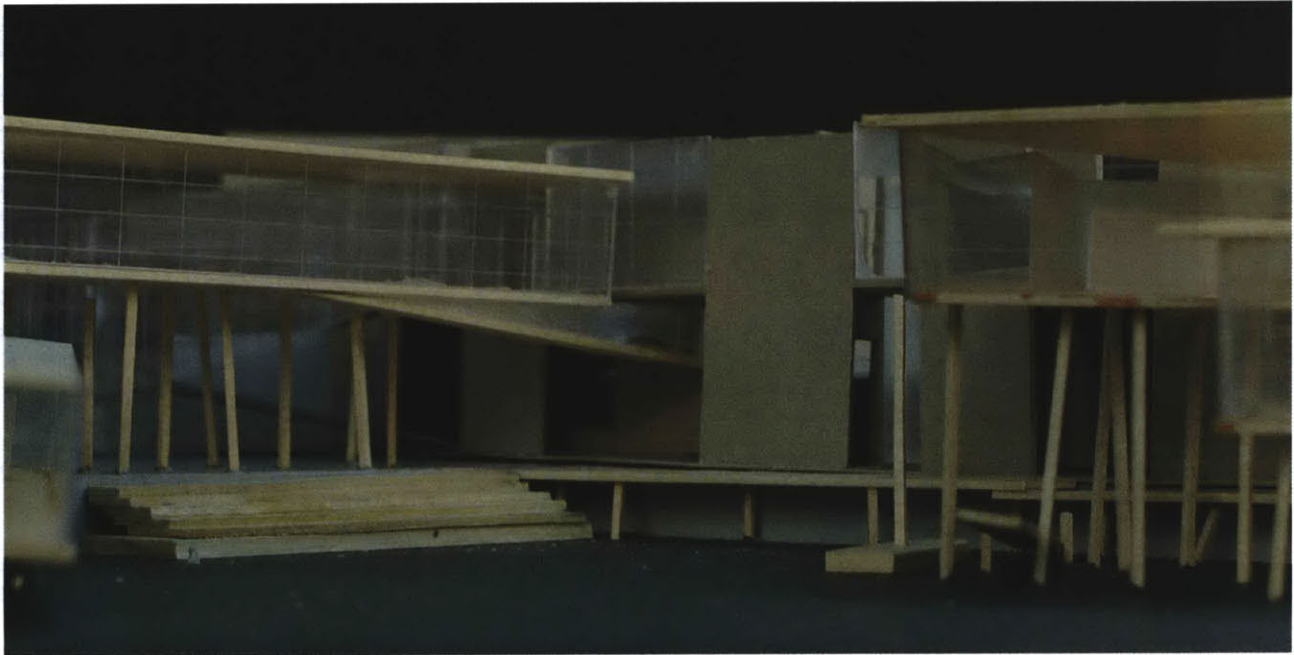


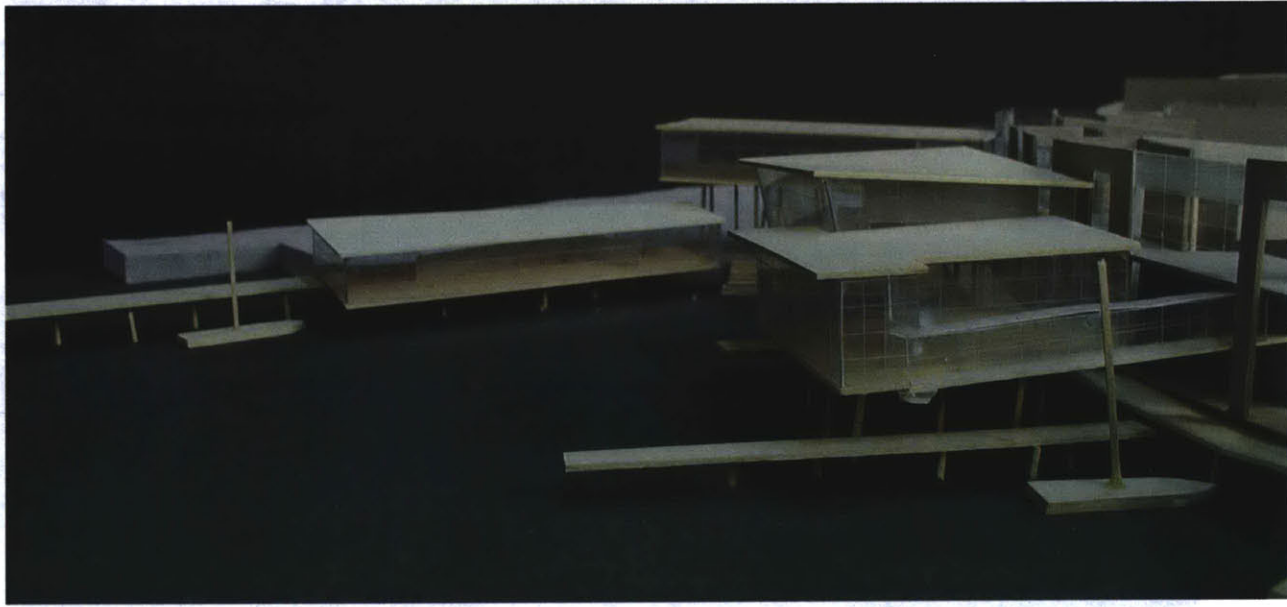




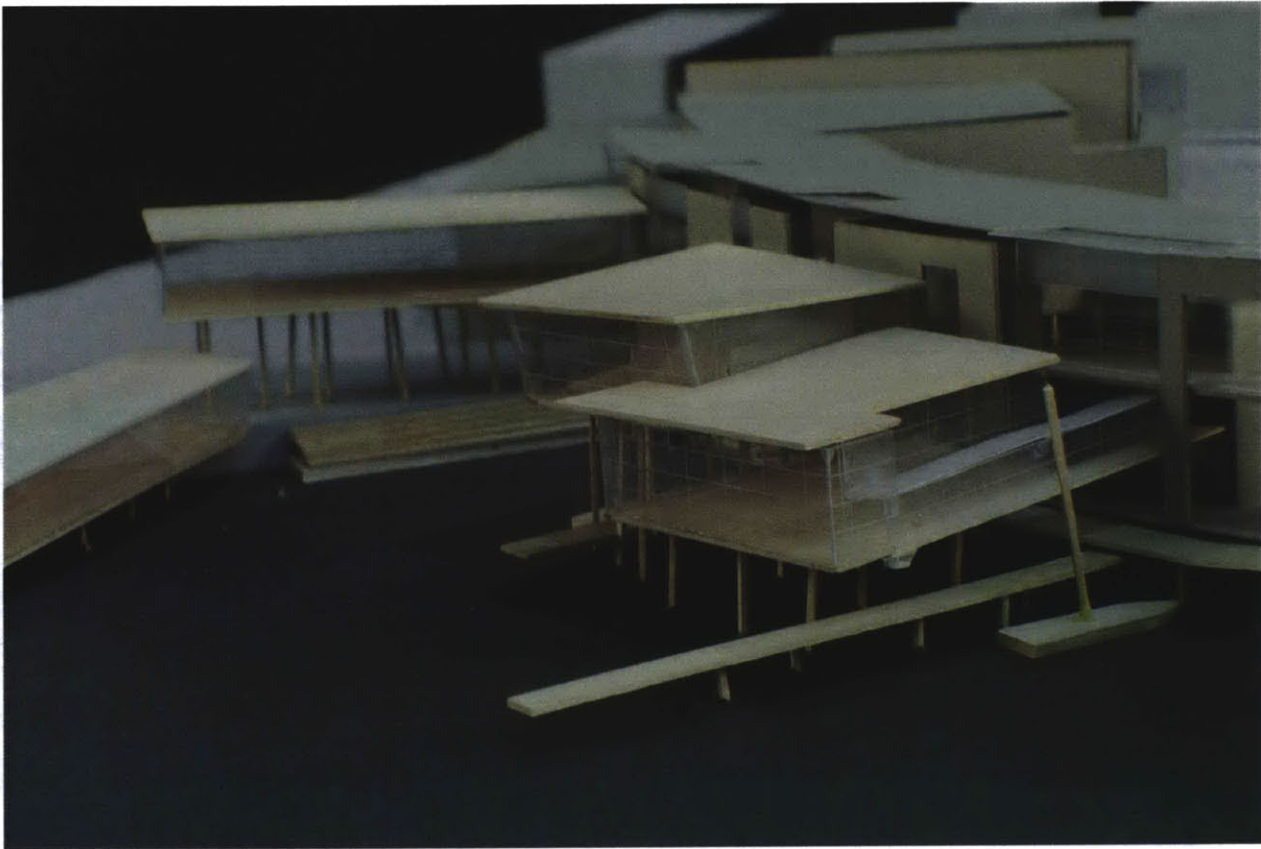




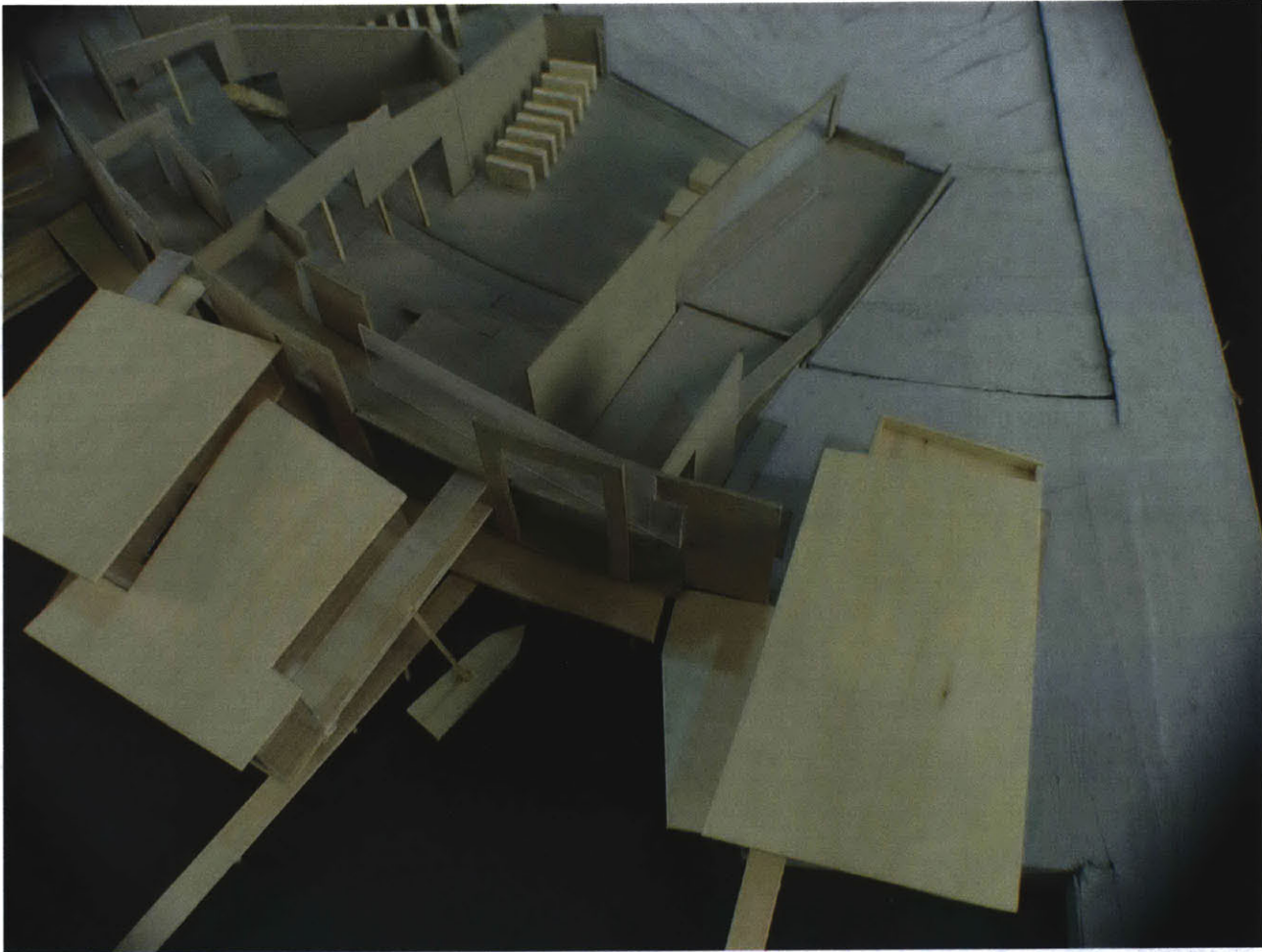




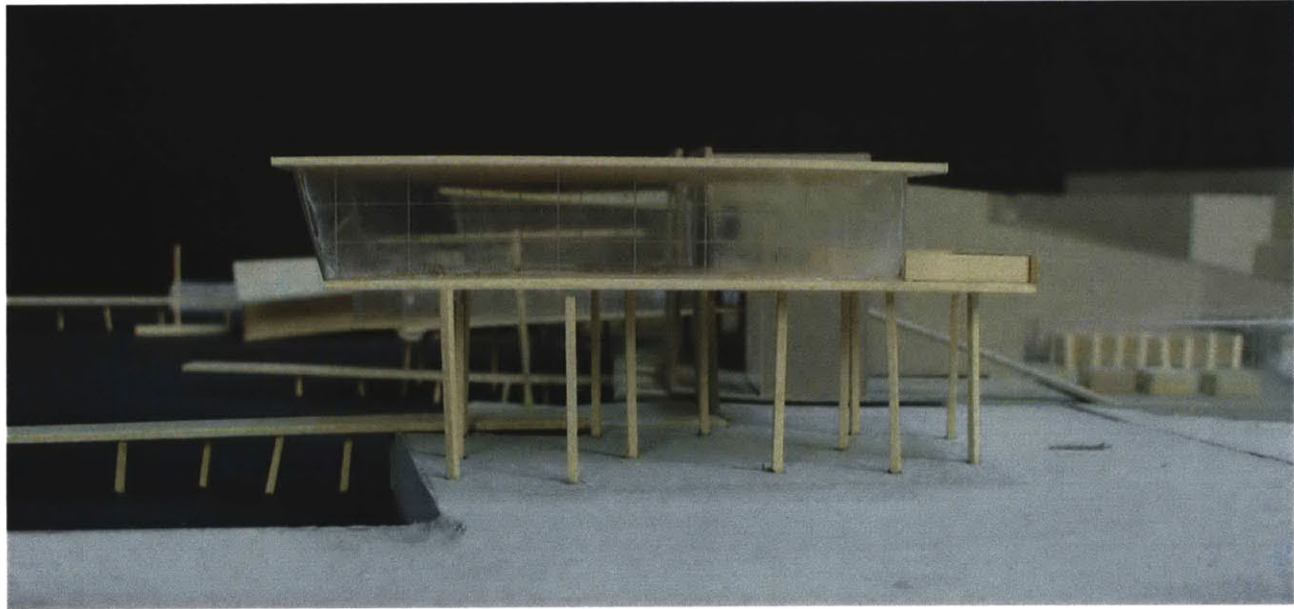








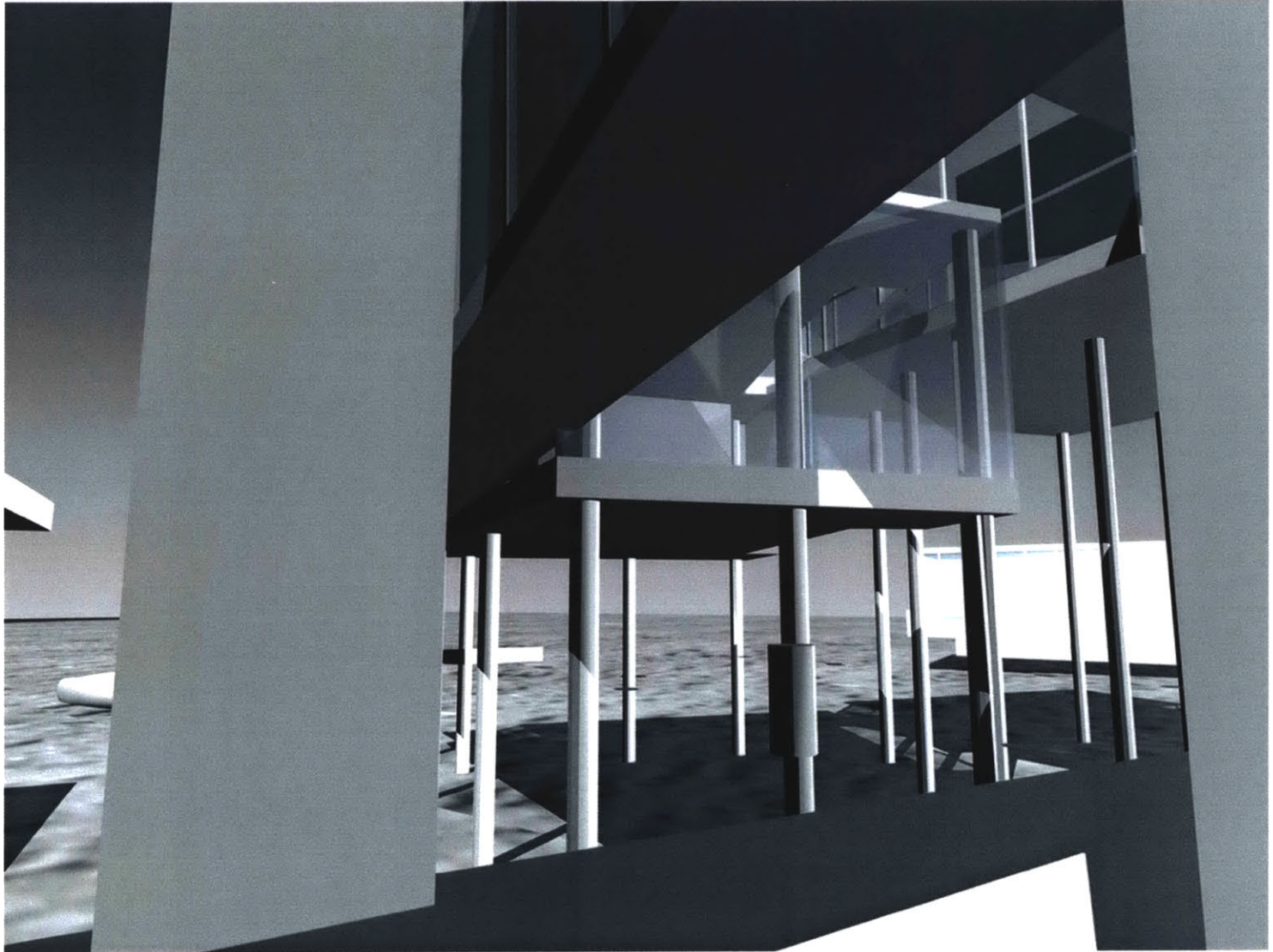




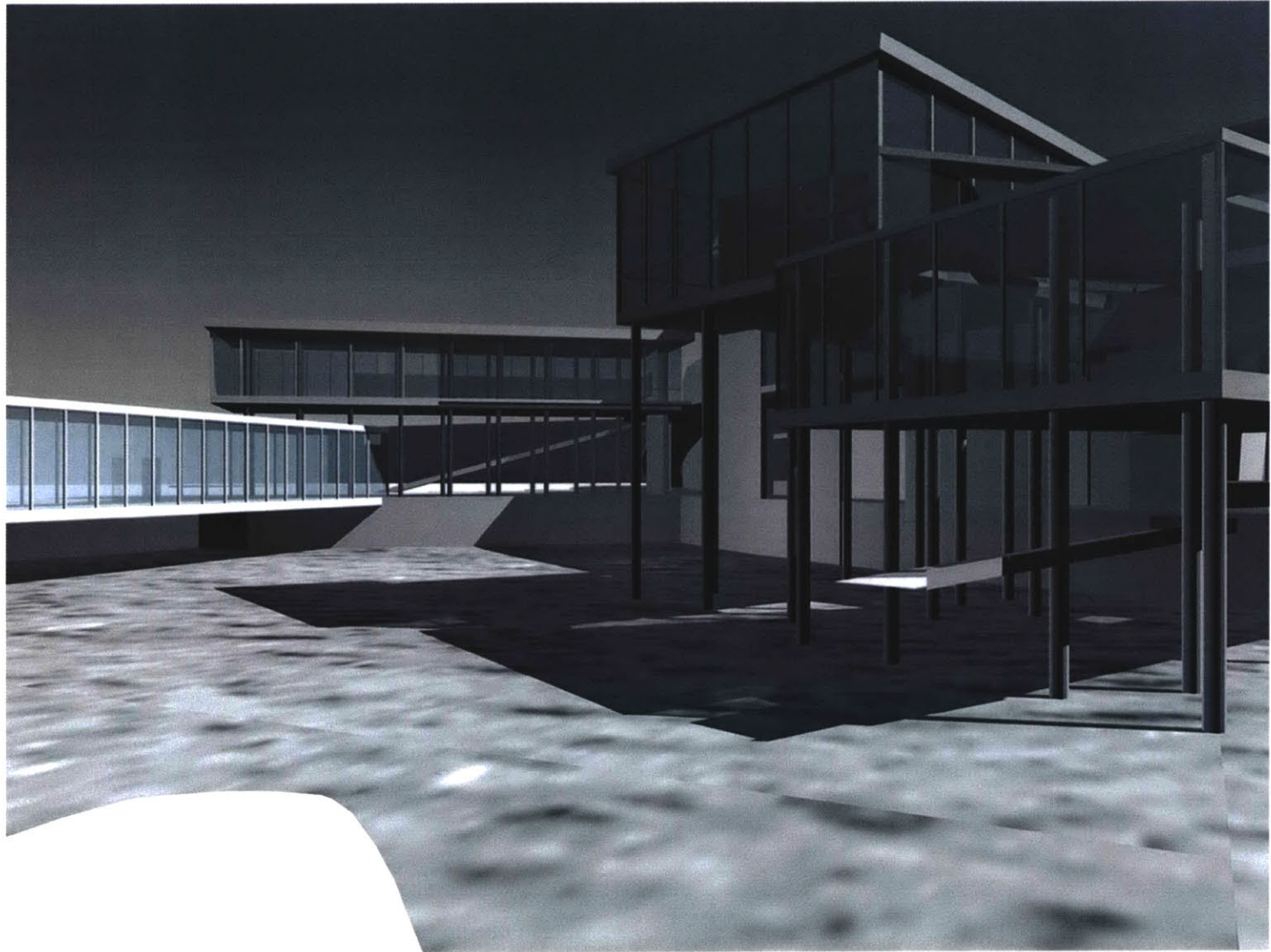
*renderings*





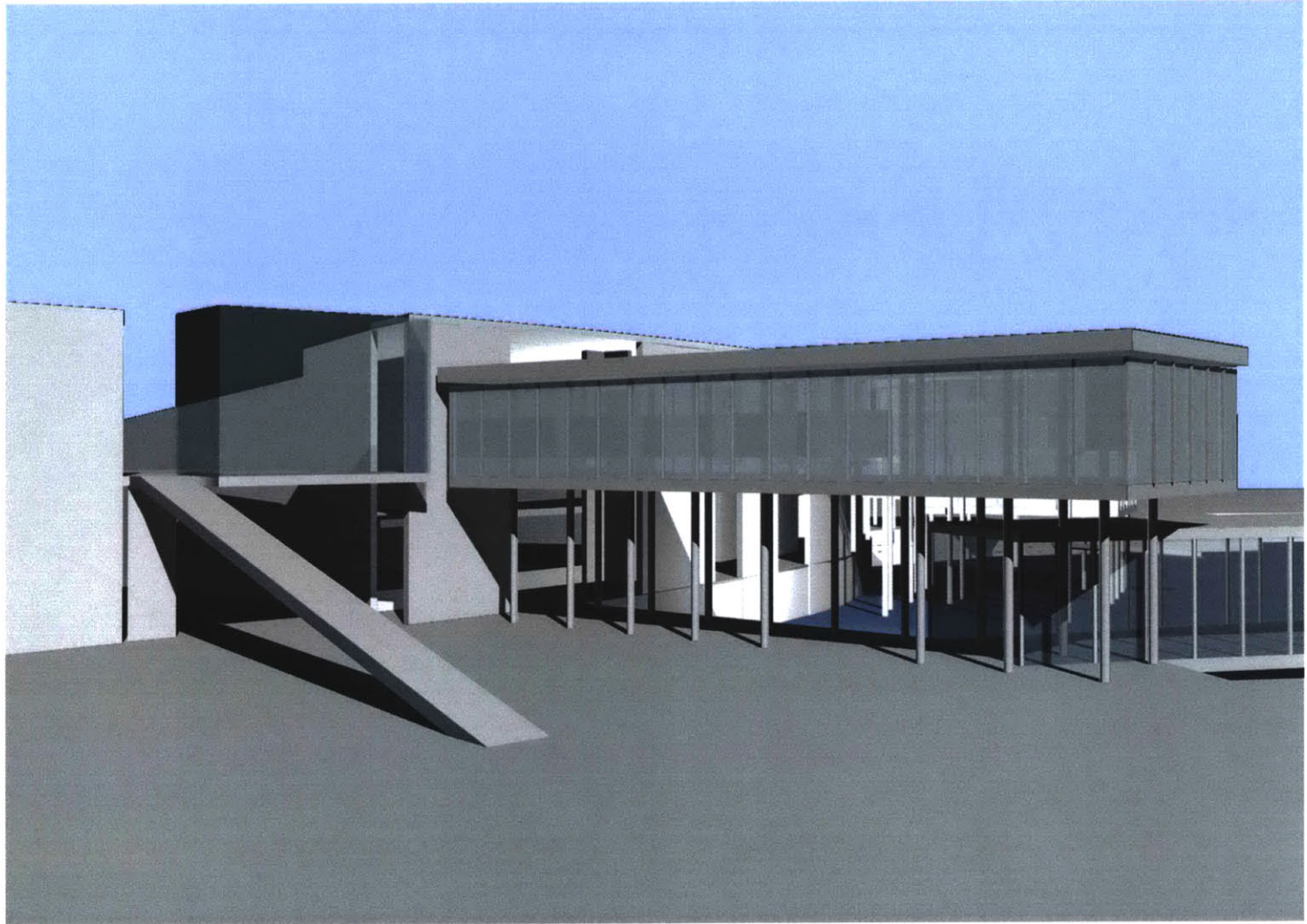














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## ***list of images***

*unless otherwise noted, all images by author*

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- image 7. chart by author
- image 8. map by author, adobe illustrator
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### ***boston harbor***

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image 2. *ibid.* 2.

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image 7. Kreiger. editor. *Mapping Boston*. 16 -19.

### ***east boston***

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### ***immigration***

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image 5. *Change and Diversity in Boston's Planning Districts*.

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image 8. <http://www.dreamsoffreedom.com>

image 9. <http://www.dreamsoffreedom.com>

### ***site***

all photos by author

maps from the BRA





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