

Drawing of Proposed East River Drive with Recreating Pier-Structure, c. 1931 (New York City Municipal Archives).

# On the edge

RETHINKING THE LIFE OF THE CITY  
Restructuring, Readapting, Reusing Lynn's Waterfront

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OF TECHNOLOGY

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Fig. 2.1 The City of Old San Juan, Puerto Rico.

*“...Cities increase, and the country becomes more and more empty. Observers shake their heads as they walk through the long, dull streets, and breathe the close air, and see the pale faces of the people. ‘God,’ they repeat, ‘made the country, man made the town.’ Their hearts sink at the thought of the future, and they find themselves saying that ‘cities will crowd in a blacker, incessanter line;’ that ‘the din will be more,’ ‘the trade denser,’ and that they will ‘never see an ennobling sight, or drink of the feeling of quiet, again.’*

*They forget that the highest possible life for men may be a city life; and that the prophets foresaw, not a paradise or a garden, but a city with its streets and its markets, its manifold interests and its hum of life. A man often does well, as David, to leave the sheep fields to come down to see the battle.*

*We have as our neighbors in a city, not the trees and the beasts, but fellow human beings. We can from them learn greater lessons, and with them do greater deeds. We can become more human...”*

Canon Barnett, *Ideal City*



Fig 4.1 Sunflowers, Marblehead, 1994

## **DEDICATION**

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This thesis and the many years of education that led up to it would not have been possible without the love and devotion of my wife, Wendy. I have asked much of her, and returned little, so far. I think my time has come.

I would like to dedicate this work to the memory of Wendy's father, David Cleveland, who always wanted his daughter to marry an M.I.T. graduate.

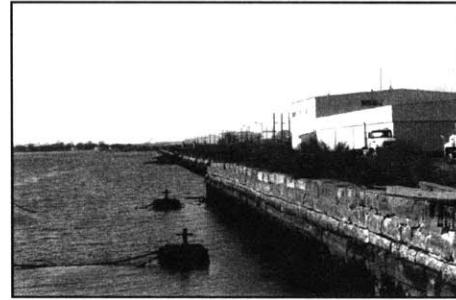


Fig 6.1\*

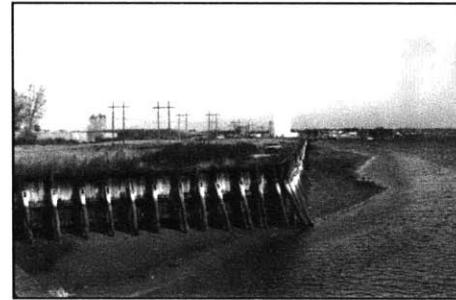


Fig 6.2\*

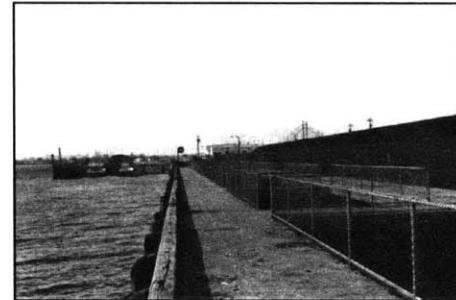


Fig 6.3\*

\*The edges of Lynn and the Harbor

# On the edge

**Rethinking the life of the city**

**Restructuring, Readapting, Reusing Lynn's Waterfront**

Submitted to the Department of Architecture on December 15, 1994 in partial fulfillment  
of the requirements for the degree of Master of Architecture

by Robert F. Reifeiss

## **ABSTRACT**

It is on the edge of a city and its waterfront that the activity and life of a city begins and ends. There is constant exchange and movement through the arrival and departure of people and goods in conjunction with the ebb and flow of the tides. This thesis was undertaken to appreciate this relationship of the life and form of the city to its waterfront. It is an exploration into the reuniting of the urban artifacts of a city's past with its present urban and social conditions.

Through a cursory understanding of port cities, the thesis pursues the implementation of an urban structure as a method to recreate a social fabric that had started at the waterfront but has since been transformed and/or disrupted. It investigates the capabilities that this new built form might have in "spanning" between the public uses and the private interests that have interrupted the social and aesthetic fabric that make up a city. It seeks to discover if a new urban strategy can encourage a new type of architecture.

Reciprocally, can new architecture be invented that is capable of generating a new urban lifestyle?

With the integration and implementation of a new public framework, the built form allows uninterrupted movement and attempts to restore the continuity of the city's preexisting fabric. At the same time, the structure will allow for the possibility of future development of private interests. The city may, at least theoretically, regain its past image and the aesthetic intentions that were its initial reasons for establishing itself.

The urban structure is seen as a continuation of the public element where movement occurs and therefore gives life to the city. For it is the people and their activities in the public realm that are the important attributes of the city while the architecture acts as a backdrop for the performance and interaction of the city's inhabitants. The structure provides the physical definition and space in which the public may act alone or in groups in the experience of the private and public aspects of the city.

It is in the social realm that the city is celebrated. It is here too that the memories fostered by its inhabitants later define the character, the consciousness, the identity of the city.

Thesis Supervisor: Jan Wampler  
Title: Professor of Architecture



Fig 8.1 City of Lynn Mosaic.

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## INTRODUCTION

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Moving elements in a city, particularly the people and their activities, are as important as the stationary physical parts. It is within the urban infrastructure of the city that all movement takes place. It happens along the great avenues and boulevards of Paris, along the banks and in the canals of Venice and Amsterdam, and in the courtyards and plazas of any Spanish city. It is the movement and interaction of the population that brings a city to life. A city that can accomplish this and flourish is dependent on its social gestures, aesthetic and built intentions and the creation of a better environment for life. These characteristics of a city can and are derived from its architecture and the urban artifacts that are created over time. For a city is constantly changing, growing, undergoing transformations at once evident and instantaneous, or slowly evolving over time — imperceptible at any given moment, but evident nonetheless. A coherent semblance of influential artifacts, memories, and referential qualities emerge from the evolution of the city, as a human creation.



Fig. II.1

"Thousands of mortal men" throughout the city are 'fixed in ocean reveries' and discontented unless they 'get just as nigh the water as they possibly can without falling in."

Herman Melville,  
***Moby Dick***

Later as the city grows, it will start to acquire a consciousness and memory all its own that begin to permeate all aspects of life — how one inhabits the city; how one moves within the social fabric; what one does for enjoyment; where and how one works; how one interacts with another; and how one perceives oneself within the collective image that is forming. The city thus creates an identity for itself. As this condition is then passed on to more and more inhabitants of the city, they will develop their own consciousness and memory of the city in relation to how they experience the aesthetic and built surroundings. This greater public image of the city will come from the overlap of many individual images or from a series of public images, each held by some significant number of its citizens. Either way, these group images become necessary if an individual is to live and interact successfully with other inhabitants within the created environment.

The group images will further lend themselves to the construction, modification, and rendition of successful built forms. These built forms become widespread and permanent — the “theme” of the city.

The built forms are contingent on the real experiences of the urban artifacts, which are contingent on the real experiences of the city. The city can then be described by the experiences and memories of the built form(s) as influenced by its characteristics. The architecture of the city then summarizes the city's form and the inhabitants' experiences. From this architecture, a city is understood and a collective memory conceived.

When a city loses that collective memory, the public function of the city ceases to sustain itself. A conscious effort must be made to maintain and develop the built elements that reinforce the city as a public entity which conducts the life of its inhabitants. If the formal elements that once promoted social growth are negated or destroyed, so are the experiences they fostered among its inhabitants.



Figure 13.1 A social gathering in the urban fabric in the city of Ponce.

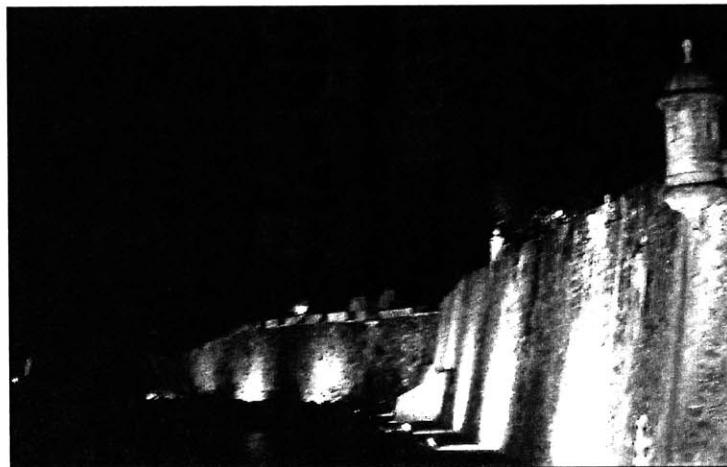


Figure 13.2 The City of Old San Juan, Puerto Rico at night.



Figure 14.1 The Lynnway: an unhealthy image of the City of Lynn.

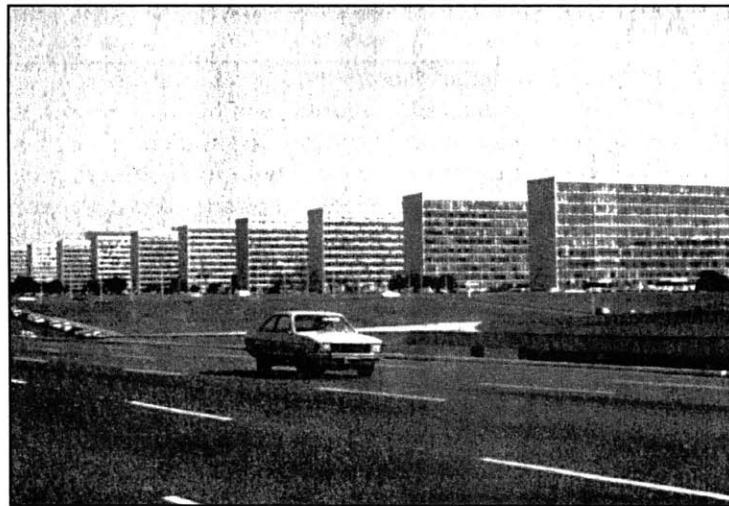


Figure 14.2 Brasilia, Brazil — where the city was designed for the car; not people.  
Short, **The Humane City**

Thus, the social interactions and movement vital to the survival of the city moves out of the realm of the public structure and into the private domain. The city begins to internalize itself — encloses its populace within private environments. The typology of the greater public structure is then forfeited to the smaller private interests. The image of the city becomes lost.

Each new urban intervention is then fated to rely on general, localized criteria for reference and planning. Each part of the city is treated as a singular place. The collective image that was so strong no longer manifests itself to tie the local interventions together and pull them into the larger urban context of the city. It becomes impossible to make any determination about such interventions as they relate to the city in any rational manner when they are built solely based on local conditions.

What remains after the city has succumbed to a series of these local interventions are the vestiges of a disparate fabric. That same fabric had provided the urban connections on which the city was visualized but now alienates the very users it was meant for. Highways are built through cities

dividing and estranging communities forever. Artificial worlds within malls further disintegrate the collective image of what a city should be, instead fostering ideas and notions of an utopian ideal based solely on capitalist enterprising and reward. Historical reference is forsaken in the name of tourism, and the theme park is the succeeding image of a famous landmark. These are the new images of the city, borne of private interests and development, but they are not necessarily the public, collective one.

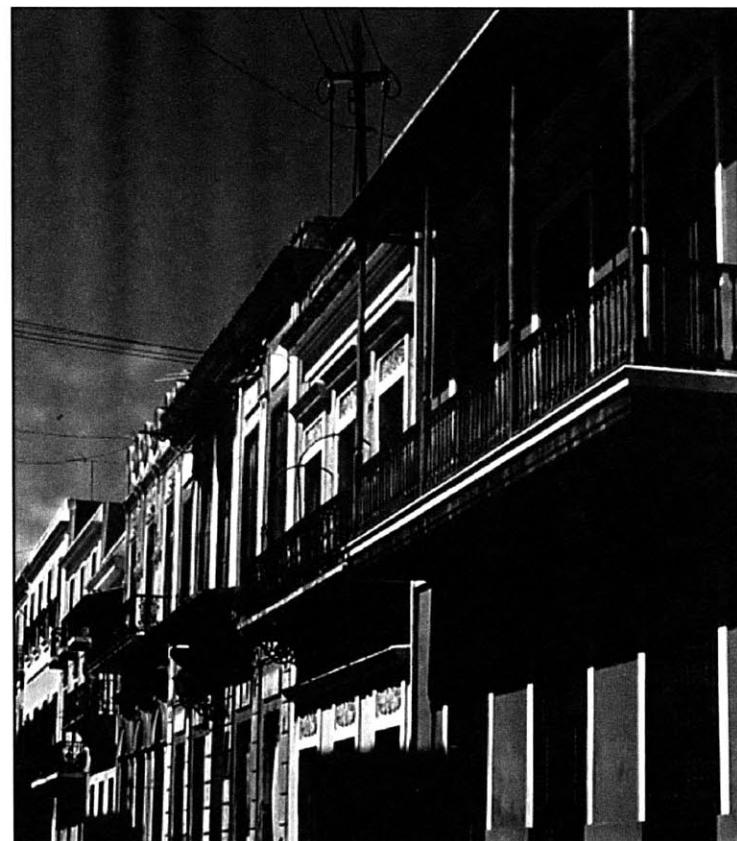


Fig 15.1 Old San Juan balconies.

“...The challenge is to synthesize the relevant pieces of the past with the progressive ideas of the present. Cities have always offered the possibility for such combinations... Many strategies can be used to bring this about... In all cases the goal is balance: a balance between uses, between climate and the needs of the building, between the community and the individual...”

Peter Calthorpe,  
**Sustainable Communities**

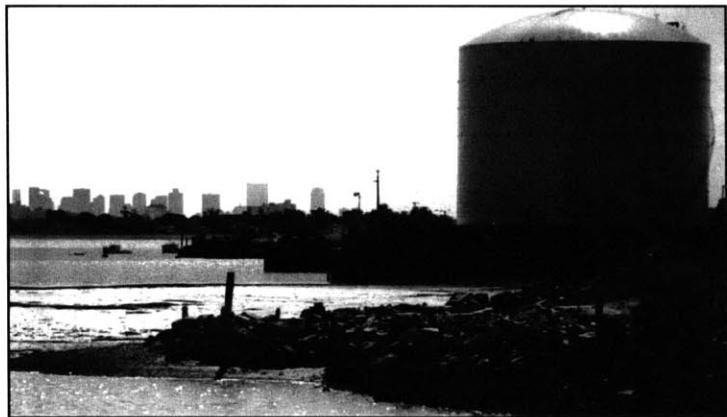


Fig 16.1 Lynn Harbor/Boston skyline.

## EDGES

Edges are the linear elements where an object or area begins or ends. They are usually, but not quite always, the boundaries between two kinds of areas. They also act as lateral references. Those edges that seem strongest are the ones that are not only visually prominent, but also continuous in form and impenetrable to cross movement. It is along the periphery of the edge that all activity and access occurs.

However, some edges — whether of railroads, topography, throughways, or waterfronts can be disruptive if they are situated as to isolate the adjacent areas that were initially meant to be read and experienced as a continuous fabric of the city. These types of edges create physical and psychological barriers that become virtually impermeable. This is evidenced in any city that has an elevated railway or highway that serves a singular use and is unsympathetic to the existing city structure and fabric. It negates the periphery of the edge and what ever moves below it. Another example, widespread in cities, is the roadway that cuts through a previously continuous field of access and visual connection due to the roadway’s width

and limited crossing points. This creates a strong barrier to any type of intersecting access, both physical and visual.

There are other types of edges that do not act as barriers, however, but as seams. Along the seams, the adjacent areas are joined together through a common bond. This holds true even if the adjacent areas are of different functions that consist of disparate elements or of a heterogeneous makeup, but share a common use and particular activities associated within the “seam.” The urban structure can materialize within the seam along with its related activities. Or in special instances, it becomes the linear element that ties the different adjacencies together and gives rise to a common theme that then runs through the disparate elements of the city.

Edges, like paths, may also have directional qualities inherent in them because of the strong continuity of form and visual prominence. This linear characteristic along a waterfront implies a path along the edge creating a seam between the land and water. If this edge forms the boundary from which a city grows, then it is the variety of activities that occur here that help define what the



Fig 17.1 Planked over trestles and yawning gaps characterized parts of Railroad Ave. in Seattle, Washington. Photo: Seattle Engineering Dep't, **Seattle's Waterfront**



Fig 17.2 Olmsted Greway Plan of Park System in Boston. Photo: B.R.A. Archives, The Boston Society of Architects, **Architecture Boston**



Fig 17.3 Elevated train structure on Washington St. Boston, MA. Photo: James Douglas, **Architecture Boston**

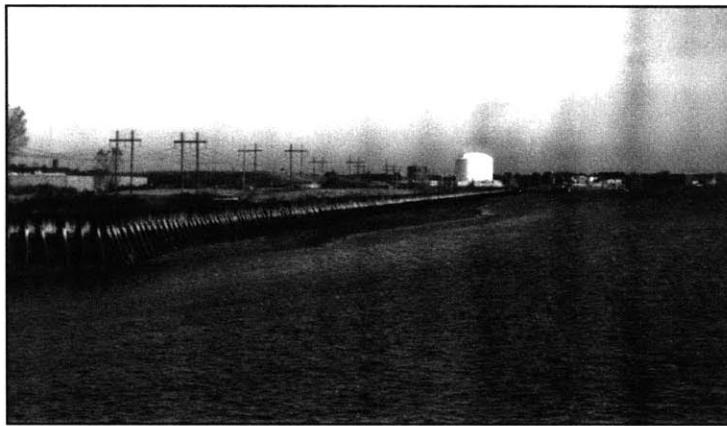


Fig 18.1 Lynn Harbor's bulkhead: built on speculation for activities that never came.

city will become. This edge gives the city its reason for existence — its quality of life experiences and its special characteristics that make a city unique.

Historically, it was because of the quality and access to and from the water's edge that a city was established on the water. Protective walls and bulkheads would be built and the city laid out. Where the edge condition of the land/water interface was negotiable, access to the water would be maintained. Where this was not possible, docks, wharves and piers were built to provide a physically easy and clear access into the water. It was at these particular points that there was an increased density of activity. As the intensity of activity increased, more and more of the edge would be developed to meet the increasing needs and activity focused on and around the waterfront. This was acceptable as long as access along the edge was maintained, in addition to the access to the waterfront.

It was usually from these access points that the city would grow, its streets terminating into piers and wharves at the water's edge. The edge was now the seam; the land bringing the city to the water, the water bringing the activity to the land.

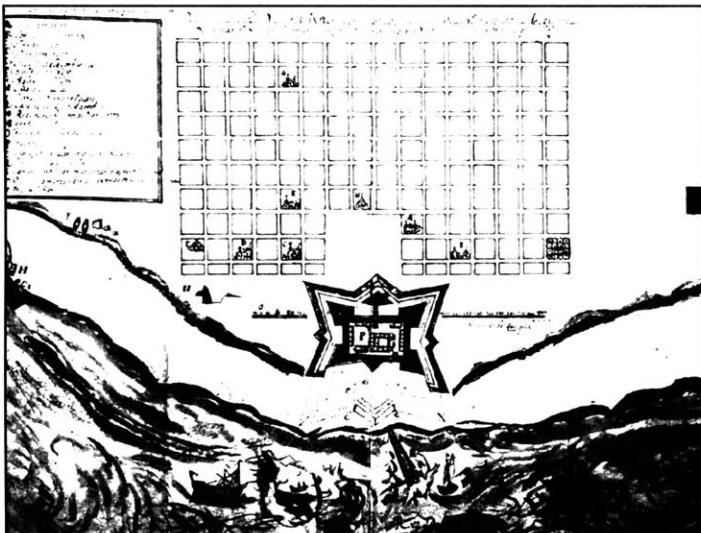


Fig. 19.1 Plan of the city and castle of Buenos Aires on Rio De la Plata, 1708.  
Aldo Rossi, **The Architecture of the City**

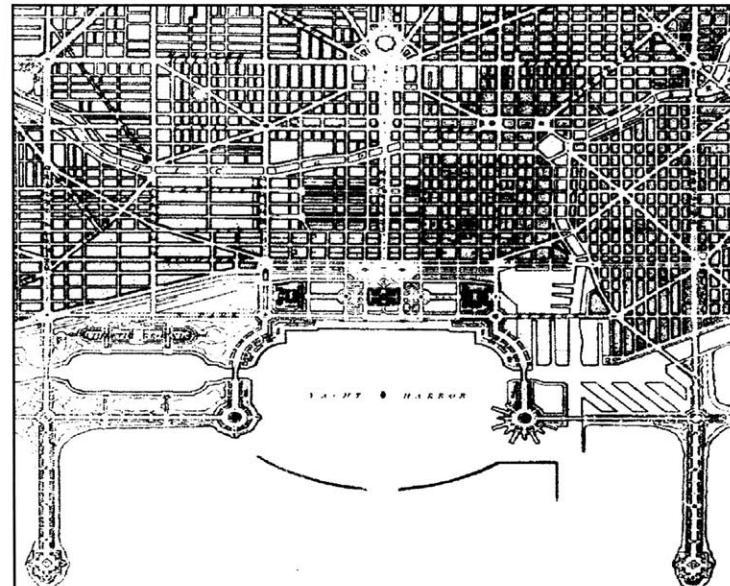


Fig. 19.2 Plan of the street system of Chicago.  
Daniel Burnham, 1909, **The Architecture of the City**

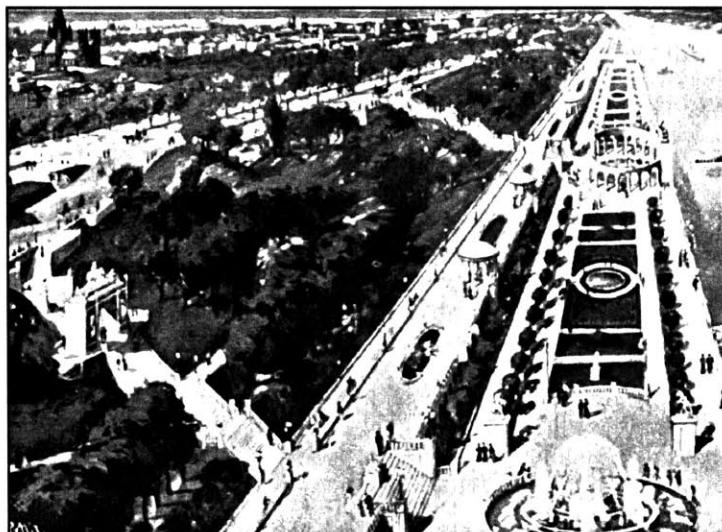


Fig. 19.3 Scheme for the embellishment of New York City on its Western side by  
Milton Soe, 1899. Harper's Weekly, **Manhattan Water Bound**

## Cities

At the water's edge, the typology of a city was first established due to the nature of the special activities occurring here. The aesthetic qualities and urban artifacts were established here. The character of the city became entrenched through the repetition of forms and experiences which then give rise to the collective image of a city.

It is here, too, that the demise of a city starts and the collective image begins to fade. The typology is lost and the edge as seam is disrupted. The edge becomes the brink at which a city will fall out of use of its waterfront. What remains is the edge that cannot be crossed, accessed, nor referenced back to the city.

But now, cities with waterfronts that had been derelict for decades are realizing the potential of a new urban frontier, and it is located at the water's edge. The transformations that are taking place in old industrial and harbor areas of today's cities are some of the most ambitious renovation programs being carried out. These areas are often of great



Fig 20.1 Portofino's Waterfront in Italy.  
Photo by L.Azeo Torre, **Waterfront Development**

historical and environmental value and are located in the heart of the cities' urban centers. It is from here that the city's typology can be rediscovered, the urban fabric of daily activity rejuvenated, the life of the city brought back from the brink, and reborn from the water's edge.

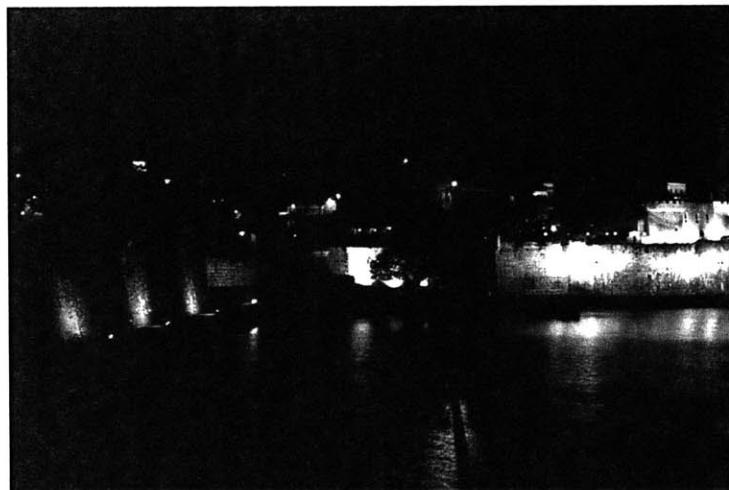


Fig 21.1 The walled city of San Juan, Puerto Rico. A city recognizes its history and waterfront again.

### The past

What attributed to the demise of the waterfront over the past several decades was an abandonment of the port areas by the obsolescence of industrial installations, advances in technology, and the discovery of newer, more efficient modes of land transport. This led to large, private land holdings along the water to fall into disrepair; structures in the water to rot, decay, and crumble; and a general omission of the waterfront as part of the city's fabric. The waterfront as a city amenity was no longer possible without the activity which was the lifeblood of the city's economic and social stability. Instead, the waterfront has become a no man's land of obsolete industry, forming an ubiquitous buffer at the periphery of the city.

Access to the waterfront, which was somewhat limited when marine related businesses were active, had now been completely closed off due to the dangers that became inherent due to the neglect of the old, dilapidated structures that lined the waterfront and extended out into it. Piers and dock facilities were permanently closed to all types of traffic, and this fact only strengthened the physical and psychological barriers to the water.

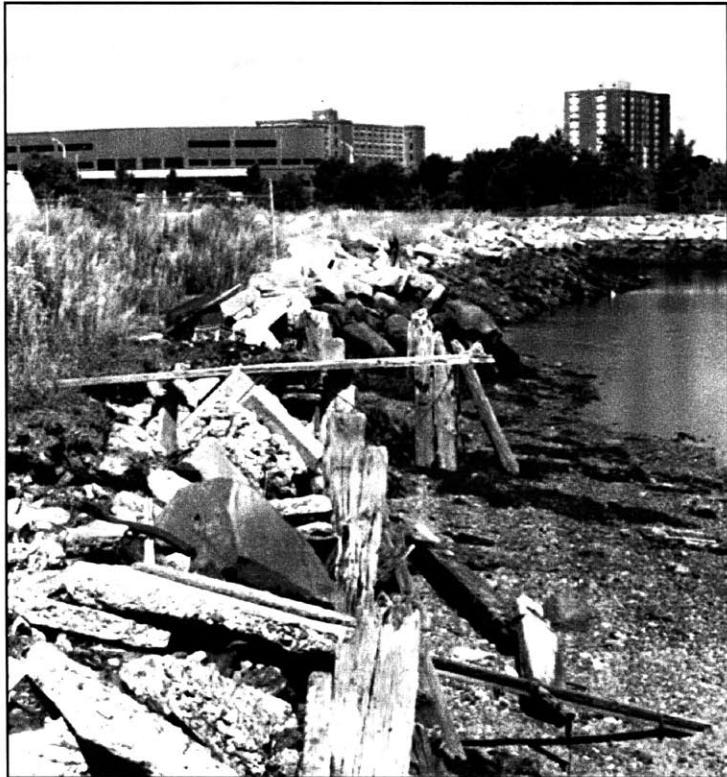


Fig. 22.1 Abandoned pier and bulkhead across from Lynn Heritage State Park



Fig. 23.1 A neglected pierhead across from Lynn's Heritage State Park.

## WATERFRONTS

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"Water is the source of life that has both controlled yet provided for human existence and all flora and fauna on earth. What starts in the rainforests and flows into the rivers of the world, culminating in the ocean, exudes a magic that no other element possesses. It is this artery that, while sustaining life, creates a unique environment and way of life at its edge. From the river to the lake, from the estuary to the ocean, the interaction of man and this edge has been the basis of a special relationship, one often characterized by potential danger but also by abundant rewards."

Azeo L.Torre ,  
**Principles of waterfront development**

The early waterfront cities that developed in the United States were virtually identical to their European counterparts, with similar formal elements and the associated activity inherent along the water. The scale and image of the cities changed dramatically with the arrival of the Industrial Revolution and the railroads. Initially, waterfront or port cities were the first points of arrival and centers for social interaction and entertainment. As commerce increased, the requirements for storage and movement grew and port cities actually cut off their inhabitants from access to the water's edge with vast warehouses, rail lines, wharves, and roadways that provided for the distribution of goods, but not people.

With the introduction of the automobile, waterfront access was curtailed even further. What was once a promenade for strolling along the water's edge, became an expressway, usually elevated, cutting off any possible means of access, physically on the ground, and visually from above. If the roadway was at ground level, access was limited to only a few specific locations to cross. At minimum, a crosswalk located at a red light, or on

occasion, narrow pedestrian bridges that were few and far between.

It is unfortunate that the maritime legacy was lost to the effort to achieve prosperity and growth at all costs, particularly environmental. Low lying marshes and estuaries were filled in to provide large, flat lands for warehousing and storage. Tidal flats were backfilled to the established bulkheads to provide a regular edge for which ships could dock or moor against.

The man made edge could, however, provide certain appealing irregularities if the bulkhead was allowed to move in and out, creating a reciprocity between the water and land. This is evidenced in the harbor coastlines of the early 19th century, when ships were small enough to be maneuvered into narrow berths along the wharves. With the advent of ever larger tanker and shipping vessels, the coastline lost some of its irregularity and thus became more ordered so that it might accommodate the larger ships.

Only after the water's edge was lost completely due to the decrease and ultimate abandonment in shipping and its related activities at the local level that the cities reached a higher level of maturity



Fig. 25.1 A token gesture of pedestrian accessibility. Image of pedestrian Bridge located in Rio Piedras, Puerto Rico.



Fig. 25.2 A proposed seaport marine terminal, MPA vision of amount of land now required at the shorelines of today's city. Maryland Port Administration.  
**The Baltimore Harbor**

and sophistication to demand back access to their greatest asset. But now, instead of redevelopment for marine related activity, ports and waterfronts are being developed for the enjoyment of the citizens of the waterfront cities.



Fig. 26.I The Grand Canal becomes a stage through which the parade vessels pass during the Regatta Storica in Venice, Italy. Photo: L. Azeo Torre, **Waterfront Development**

## WATERFRONT CITIES

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As a hub for every type of transportation, the city at the water's edge is bombarded constantly by a range of stimuli from foods, goods, systems, people, and vessels, to technologies such as bulkheads, sea walls, drainage, transporting devices, and the like. The development of an adequate response to these needs creates the evolution of a unique society — one which far more readily accepts change and demands a greater diversity. This response creates a cohesive but broad based culture centered around a collective image borne of the activity.

Lynn, Massachusetts, like many other coastal cities, lost its cultural waterfront when the scale of the activities along the water increased dramatically and larger areas of land were needed that the older ports could not accommodate. Containerization of bulk goods and cargo is probably the largest culprit to the demise of city waterfronts. The physical layout and land use configuration of the old general cargo terminals were totally inadequate for container handling.

"The Ideal City will be a seaport, from which ships come and go to foreign parts. The talk of the citizens will thus be of things outside their own interests: they will hear of other ways of living, and of other ways of pleasure, and their minds will grow wider.

Their imagination will kindle when they stand on the bridges, and their thoughts follow the stream as it passes onwards to the sea where, a few miles distant in storm and in wind, men struggle and strain in strenuous contest; or cross the ocean to new countries where Englishmen are carving an Empire out of forests and deserts. A city which is near the sea may have more responsibilities, and a greater need of religion and government to curb a sailor population; but it is likely to have more liberty of thought, more poetry, and more adventure among its citizens."

Canon Barnett  
**Ideal City**



Fig. 28.I Locust Point, Baltimore. Piers create a reciprocity with water.  
Photo: Maryland Port Administration, **The Baltimore Harbor**

In older harbors, such as Boston, New York, Philadelphia, San Francisco, and Seattle, the need was to maximize the linear extent of the water-land contact through a series of piers and slips. But in container ports, the need is for extensive backup areas for fast rail and highway access and the staging of containers — an area ten times larger than what was required for the conventional cargo terminal. Thus the ratio between the length of a berth and the amount of back-up land needed for cargo has changed dramatically resulting in large amounts of harborfront land being released for reuse.

In many ways the vacating of harborfronts by the industrial users allowed a new linkage of the water to the city. Fortunately, this was happening at a time when there was a growth in disposal income, more time for leisure activities, and a renewed concern for the environment. The public attitude of the old working waterfront had changed dramatically and redevelopment sought to fulfill the public's need for leisure and recreational facilities that were closer to home. Thus the city's waterfront became the target of major investment as an invaluable amenity to the city.

## Boston, Massachusetts

The city of Boston was probably the first port city to experience economic decline, largely because of the increasing peripherality of its New England location. By the 1950's, Boston found itself with the urgent need for revitalization because of its great historic potential which should be exploited.

The revival of Boston's waterfront began with the redevelopment of Scollay Square, the run down "sailor town," for a new City Hall and government complex. Subsequently, revitalization focused on the refurbishment of the old harborside Quincy Market complex, known today as Faneuil Hall, and its linkage to the waterfront. Areas adjacent to the first interventions at the water's edge soon followed and derelict, unused warehouses were refurbished into expensive condominiums, marinas, and other water associated amenities.

In the past decade, Boston undertook a major waterfront revitalization project known as "Harborpark," diffusing the interventions to extend north, south, and east of the initial core improvements. Its focus is on the Harborwalk, a public pathway that undulates along the shore, moving in and out as it follows the piers and



Fig. 29.1 Commercial Wharf warehouses off Atlantic Avenue, Boston — renovated into apartments. Photo: Phokion Karas, **Architecture Boston**



Fig. 30.1 Map of Harborpark, phase I. Boston Redevelopment Authority.  
**Harborpark: A Framework for Planning Discussion**

"...Harborpark is meant to be a framework for discussing the ordering of this (the waterfront) growth. It seeks balance, rationality, and harmony in the revival of the waterfront..."

...The unifying principle of Harborpark to bring it together is public access. Harborpark guarantees that a balance will be struck between the economic wealth of the City and its inner life — its need for places where people can gather for social events, common recreation, or the quiet enjoyment of life and nature. The Harborpark concept guarantees not only public access to the Harbor itself but also to the process that will guide rational growth..."

Boston Redevelopment Authority,  
**Harborpark: A Framework for Planning Discussion**

wharves. It links together the city's tourist attractions and civic functions that happen on or adjacent to the water. They include the Waterfront Park, Quincy Market, the New England Aquarium and the Museum Wharf (which contains the Children's Museum and the Computer Museum).\*

A recent addition to the public walk has been Rowes Wharf, a hotel and condominium complex that hosts a water ferry terminal and a small marina. Though the actual width of the walk here is limited to maximize the building footprint, it nonetheless still considers the accessibility of the city to the water.

\* Boston Redevelopment Authority.  
**Harborpark: A Framework for Planning Discussion**

## **Seattle, Washington**

Seattle has maintained a special relationship with its waterfront since the 1850's. The unique climate and the Puget Sound form the foundation for a usable waterfront to which few can compare, carved into its present shape by the trading economy. After local inhabitants had been separated from its waterfront by railroads, the Alaskan Viaduct served to further separate access by allowing the automobile to dominate the water's edge. Ironically, this elevated structure, which divided the city from its waterfront, actually helps provide needed parking space adjacent to the waterfront development.

Building on the fact that many of the piers already provide festival marketplace activities, a successful aquarium, and recreational facilities, Harborfront is a concerted attempt to make a good waterfront an excellent one. The development plan proposes needed marina space along the downtown waterfront, new restaurants, retail and office complexes, and a cruise ship terminal as well as expanded recreational facilities. A waterfront streetcar and water taxis would augment the existing ferryboat service, giving a more animated



Fig 31.1 The rebuilt piers of Seattle's waterfront with an East-West alignment , at an angle to the streets. As to why the newer alignment, there are many theories.  
Photo: Port of Seattle, **Seattle's Waterfront**

Fig 31.1 Artist's rendering of city's road terminating at open, accessible space at water's edge. **Seattle Harborfront**



Fig 32.1 Seattle's container cranes symbolize the new working waterfront.  
Photo: Jerry Wade, **Seattle's Waterfront**

sense to waterfront facilities and creating linkages to other historic nodal centers of Seattle's city fabric. The Harborfront project will unify thematically an exciting new waterfront for a city whose history and economic development have always been linked to the Puget Sound.\*

\* L Azeo Tome, **Waterfront Development**

## Baltimore, Maryland

The story of Baltimore's Inner Harbor redevelopment is one of the most dramatic urban successes in recent times. The Harbor boasts a promenade, museums, entertainment attractions, shops, offices, apartments, townhouses, hotels, and open space that are the result of a concerted programming effort. This replaces rotting piers, ramshackled buildings and a polluted harbor.

The Inner Harbor is now Baltimore's showcase — the focus of interest for many other waterfront communities to come and learn how to successfully rehabilitate and reclaim their own waterfront as an appealing public amenity.

The rehabilitation of Baltimore's Harbor coincided with Boston's plans to readapt their waterfront to the changing economic times. The Planning Director, Arthur McVoy released an article in 1956 promising to make Baltimore "one of the most exciting cities in the world." The story itself was deliberately vague and futuristic, but it was extremely visionary, considering the area only held derelict warehouses, and the businesses moved to the downtown area.



Fig 34.1 Baltimore's inner harbor before redevelopment, 1950's.  
Photo: Inner Harbor Mgtmt, **The Baltimore Harbor**



Fig 34.2 Baltimore's inner harbor in 1985 with Aquarium, Marina and Harbor Place — a waterfront festival marketplace. Photo: Inner Harbor Mgmt.,  
**The Baltimore Harbor**

The vision included an immediate project that would capture the enthusiasm and related activity to the waterfront. The major aspect of the plan called for opening the harbor's edge to the public. While this seems a naturally obvious recommendation, as late as 1968 there were still plans for a superhighway and bridge along and over the Harbor. This would have permanently cut off the Harbor basin from the rest of the city physically and visually (a use of waterfronts that is very much prevalent in many of today's cities, unfortunately).

Baltimore's Inner Harbor activities are linked together by the promenade, almost a mile and a half long. It functions like a boardwalk, tying together attractions, businesses, and the many special events along the waterfront.

## Manhattan, New York

The original layer of Manhattan's concrete rim cracked in the 1960's. The island's shipping activities became disparate in the late 1930's with a decline in local passenger ferry traffic, railroad lighterage, and major containerization. Huge, deep-draft container ships replaced smaller cargo vessels and mechanisms capable of loading and unloading full railroad cars and the trailers of large trucks making the traditional manual break-bulk packing obsolete. Given a deep channel, large pieces of cheap, open land for container parking, pick-up and delivery, as well as a long, parallel docking space for unloading and loading that had taken days, could be done in under twenty four hours. Such as, Boston, Seattle and Baltimore, Manhattan's many street-end finger piers were suddenly obsolete.

The layers of brick, iron, and concrete that had amassed on the urban waterfronts over time limited who could be there. However, in 1965, a White House Conference on Natural Beauty reversed that, urging water courses to be planned "for their protection and development to enhance human life and the quality of the environment."\*

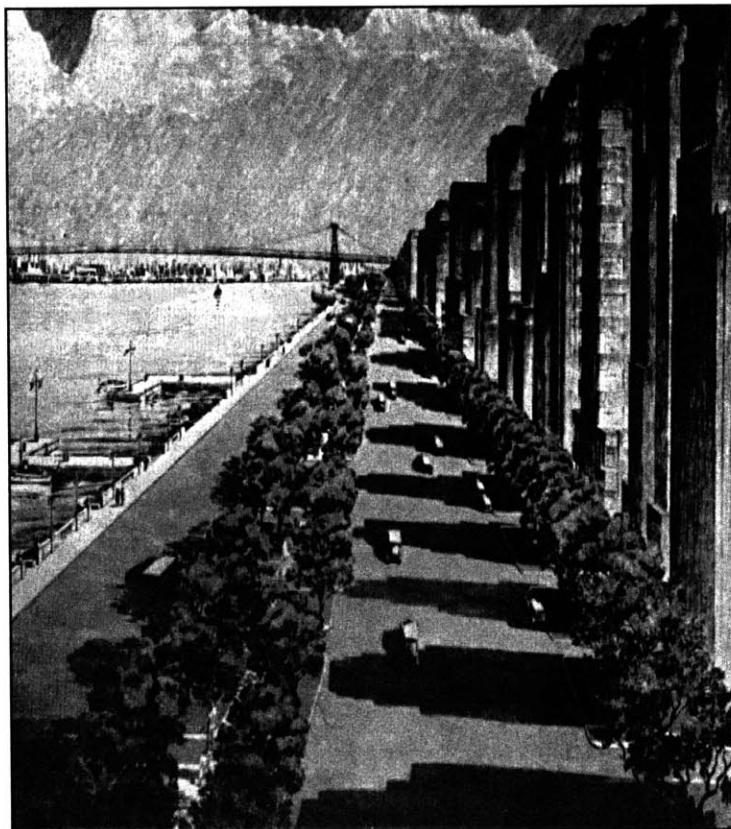


Fig 35.1 Drawing of Proposed East River Drive and Housing, 1934.  
New York City Municipal Archives., **Manhattan Water-Bound**

\* "Water and Waterfronts," Summary Report, 15; U.S. Congress, Senate, Water Quality Act of 1965, Pub. L. 89-234; and Water Quality Improvement Act of 1970, Pub. L. 91-224

The Federal Water Pollution Control Act supported this sentiment, providing guidelines and incentives for cleaning up the nation's waterways. A year later in New York, Manhattan Borough President Percy Sutton introduced a conference on the future of Manhattan's waterfront. Much of the shore, Sutton explained, "has fallen into decay and disuse despite the development of several modern piers, suffering from years of neglect and divided authority, it has too long been regarded as marginal land, a dumping ground for industries, highways, rotting piers, and raw sewage. The public has been and continues to be denied access to the waterfront."\*\*

California was the first state formally to acknowledge the opportunity that outmoded pier systems presented for people to use and enjoy the water's edge. Public assembly and water-oriented recreation were among the activities recognized as "essential to the public welfare" of the San Francisco Bay area as it was improved, developed, and preserved. "Public access" became a widely

\*\* Introduction to conference brochure, 19 November 1966.

used term. Eleven years later, the federal Coastal Zone Management Act made it a national policy.<sup>†</sup>

With this national policy, New York City and Manhattan took on many large scale urban projects along the water. From the Fulton Fish Market and Pier 17, to the World Financial Center with Battery Park City Plaza, there is a strong emphasis on both the human scale and accessibility to the water. The plaza at Battery Park City is the first major public plaza on the Hudson River and the key element of the new public areas and open space. This plaza was not conceived as an independent entity, but as a part of a continuous promenade along the  $1\frac{1}{2}$  mile waterfront esplanade. The plaza is not a single feature design, but rather a coordinated series of eight unified but distinct spaces. It has been designed to serve a variety of needs and sizes of groups, providing a range of open spaces for the individual, for intimate groups, and for larger public gatherings and city events.



Fig 37.1 South Cove, Battery Park City, New York City.  
Photo: Stephen Carr; **Public Space**

<sup>†</sup> McAteer/Petris Act, 1965; and Amendments to the 1972 Coastal Zone Management Act.

"It is the lure of the water, its sparkle, its reflection, its endless movement and change, that both captures man's imagination and provides a variety of opportunities from business to recreation, from active to passive activities. It is perhaps because the waterfront had been developed, then lost, and is presently redeveloping this edge that it is so critical to its city's future well-being. The water's edge is where life is most diverse and unique. It is essential to human existence. Although the experience at this edge may exist at many scales, it is at the water's edge that man is closest to the intuitive spirit that represents life itself."

Azeo L.Torre,  
**Principles of Waterfront Development**

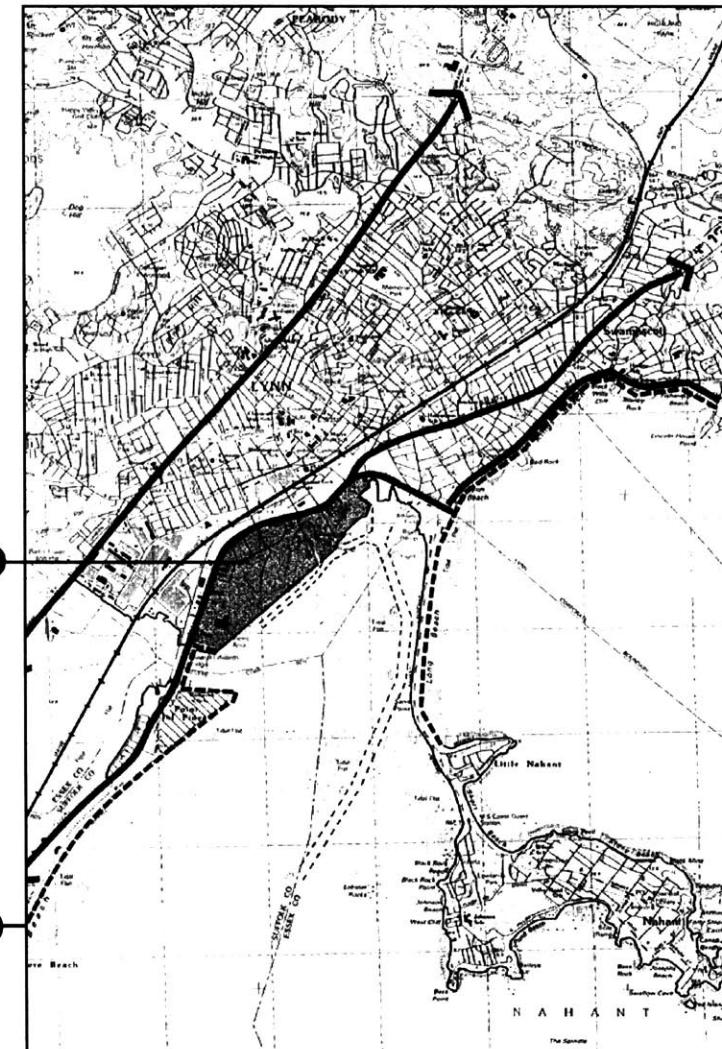


Fig. 38.1 Area map of Revere, Lynn and Swampscott, with the Causeway out to Nahant. 1. The gray area is the site. 2. The dashed line represents the quays and walkways along the water's edge in Revere and Swampscott, but noticeably missing along Lynn's waterfront. Map: U.S. Geological Survey of Lynn, Massachusetts

## THE SITE IN CONTEXT

This thesis explores a site located in the City of Lynn, Massachusetts, located ten miles northeast of Boston along the coast. The project site is a 241 acre area extending from the General Edwards Bridge at the Lynn and Revere city line, along the waterfront to the North Shore Community College. It is bounded by the Lynnway, a divided, six-lane roadway and the bulkhead wall of Lynn Harbor. The site is extraordinary because there are 75 to 100 acres of continuous, unbuilt land adjacent to a preexisting channel. Lynn Harbor itself is a major asset to the city because of the harbor's status as a designated port area.

The site was chosen to explore ways that an urban infrastructure might correct some of downtown Lynn's most difficult and long-standing land use and physical developmental problems and limitations. These include, but are not limited to:

1. under utilization of waterfront land;
2. the physical and psychological barrier created by the Lynnway;
3. the obsolescence of the industrial sites and lots; and
4. the visual unattractiveness and lack of amenities for the public.



Fig. 39.1 Detail of mural of City of Lynn showing 1. Lynn Common, 2. the Lynnway and 3. the Lynn Harbor, represented singularly, with no connections.

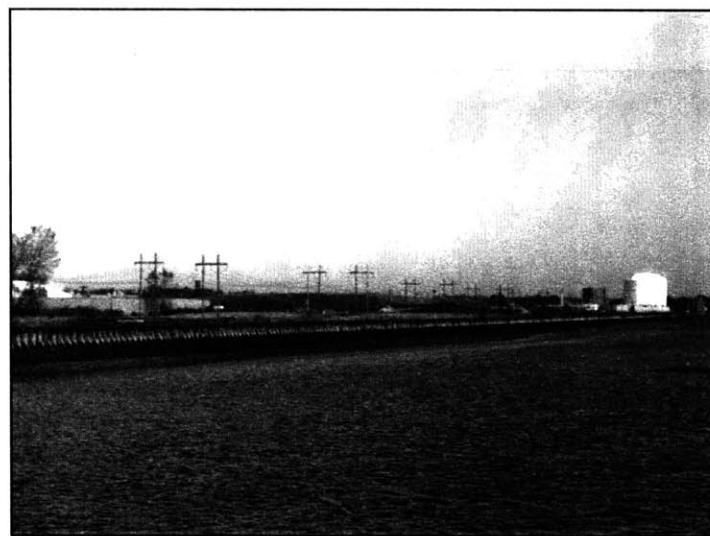


Fig 39.2 The edge of the City of Lynn, where land meets water.

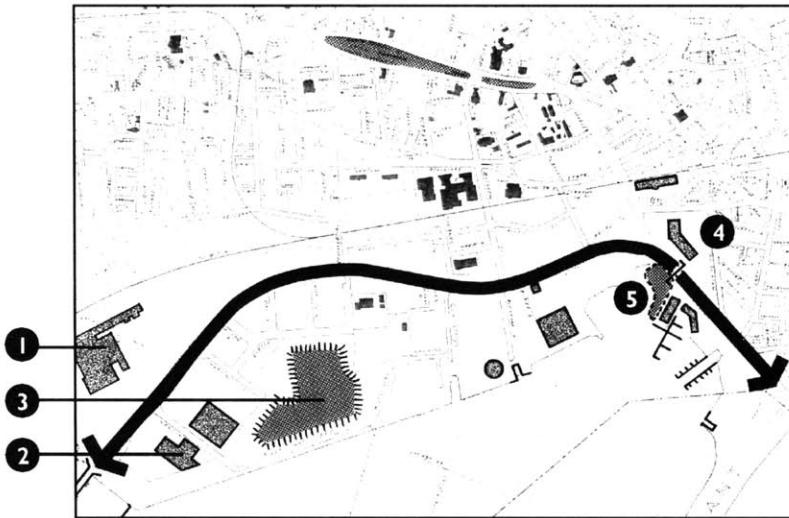


Fig. 40.1 The City of Lynn and the Lynnway with its associated landmarks that happen along the roadway and the harbor. They include: **1.** The General Electric Plant, **2.** Several large regional retail buildings, **3.** a capped landfill, **4.** North Shore Community College, and **5.** The Lynn Heritage State Park.

Much of the land immediately adjacent to the waterfront has been given over to solid waste landfills, creating an unnatural landscape that must be reconciled with. These ‘hills’ form a visual barrier that has little, if no chance, of being developed for the industrial uses that the land has been zoned for. Due to their recent origin and questionable stability and environmental safety, it seems inconceivable that any manipulation of this land except for recreational use would be feasible.

The major dividing obstacle of downtown Lynn from the waterfront is the Lynnway, which is over 120 feet wide. It is because of this roadway’s width and limited crossing points that Lynn has a barrier

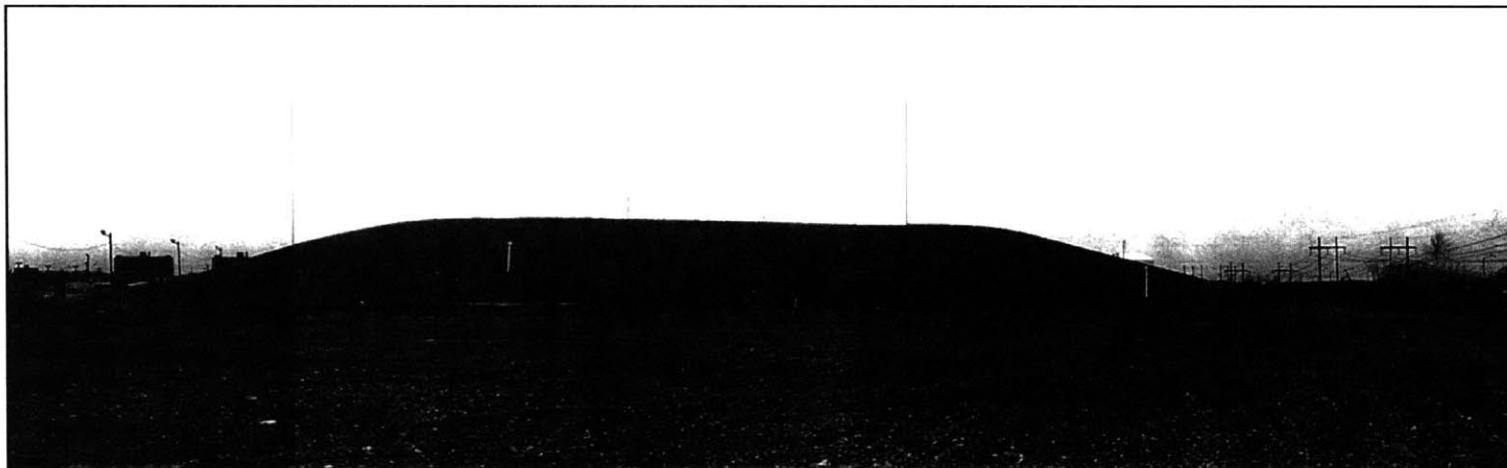


Fig. 40.2 The capped landfill, between the Lynnway and the water. It rises to forty feet above sea level. Presently, there is no active use for this area of the site.

to pedestrian access from the downtown area to the waterfront.

There is little people-oriented development of the waterfront. Only a few commercial marinas and light industry exist and most major industries have left or are in the process of leaving the waterfront. Whether it was originally advantageous for industry to be within close proximity to the harbor or if the marsh was backfilled to create larger tracts of land for their specific use is unknown but many of these industrial sites have become obsolete and relegated to parking lots and landfills.

Lynn harbor itself is of significant size and well protected from severe storms by the islands of Nahant and their causeway. It is also conveniently accessible to the Boston metropolitan area. With proper channels dug to accommodate larger sea craft, this one natural amenity is a vital asset to the redevelopment of Lynn and the harbor.

Throughout the industrial areas adjacent to the harbor, a number of parcels of land have become vacant or are currently underutilized. This condition is evident along Riley Way, Marine Boulevard, Blossom Street, the area across from North Shore Community College at the terminus

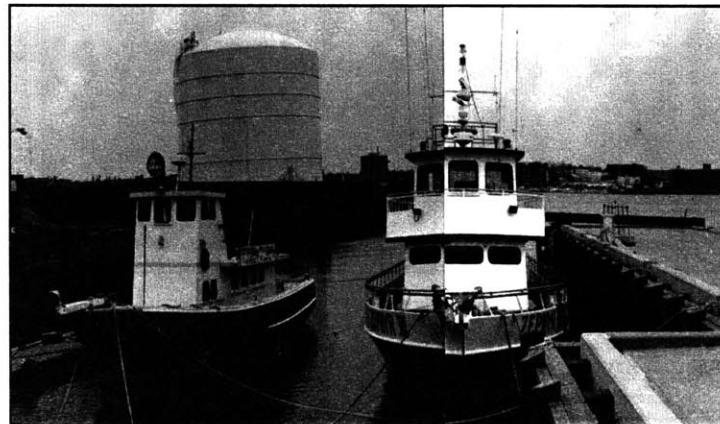


Fig. 41.1 This is the only active pier extending into the Harbor. It is home to several commercial party fishing boats. Note the large liquid natural gas tank in background. This tank, at 175 feet tall, can be seen from anywhere within the site and along the Lynnway.

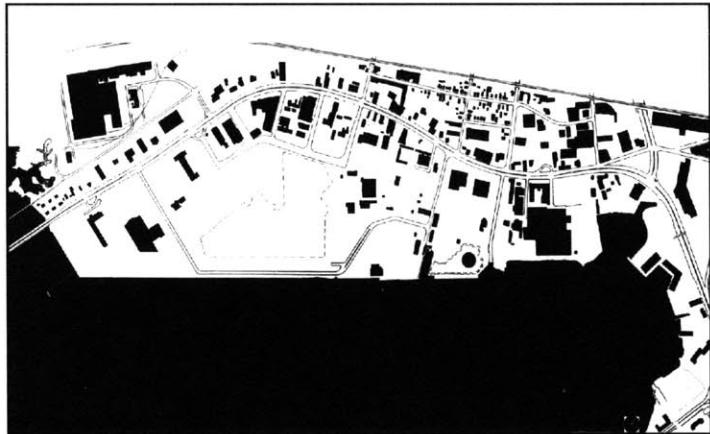


Fig. 42.1 Existing figure-ground map of site and area immediately adjacent to Lynnway showing wide dispersal of buildings within the site and availability of open land along the water.

of Market Street and to a lesser degree, the fishing pier at the south end of the site near the General Edwards Bridge. Much of this land is vacant, though zoned for heavy industry.

The greatest amount of land falls into the underutilized category — land or buildings that are not realizing their full potential in terms of their proximity to the shipping channels in Lynn Harbor. If land is actually vacant with significant size and adequate access, mechanisms should be developed to return the parcels to full utilization. The vacant land not only can be a negative factor,



Fig. 42.2 This photo shows the recent waterfront improvements intended to bring heavy industry to the waterfront and expand the Lynn Waterfront Industrial Park. At present, there is no access to this road from either end. Note also the high-tension power lines that are directly on the only available buildable land. The landfill continues in the background.

but it also fails to supply full potential to adjacent industries that currently exist by not densifying related businesses to support each other or create a centralized area of business.

Most of the buildings and their related uses that currently occupy waterfront land with access to shipping channels but do not require that access also present a question of optimization of port land. There are uses — manufacturing, warehouses, etc., that occupy shoreline property that could be relocated to inland areas along the Lynnway. This makes available shoreline property for marine related businesses and help densify similar uses and the edges of the Lynnway. As it is now, the Lynnway is relatively nondescript with buildings set back a considerable distance from the roadway and the land immediately adjacent to the road is usually being reserved for parking lots and storage. If businesses were concentrated at the major intersections of the Lynnway that run from the center of the city directly to the waterfront, there could be an intensification of activity at these points. They could further act as gateways or portals at regular intervals to mark access to the water.

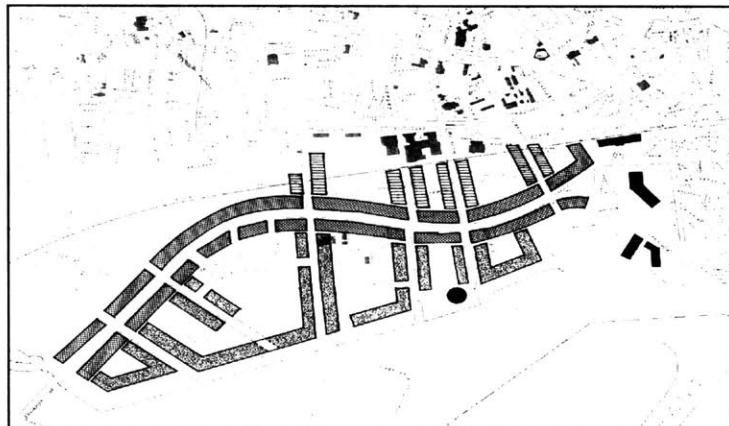


Fig. 43.1 If the Lynnway was densified with regional commercial activity, consolidating the businesses would intensify the Lynnway and alleviate the chaos of signs and parking lots that now exist. The connections into the city could be intensified with local businesses that would promote activity in the direction of the water: Marine related businesses could then continue this intensity from the Lynnway to the water's edge, and also be integrated with the water if its use is required.

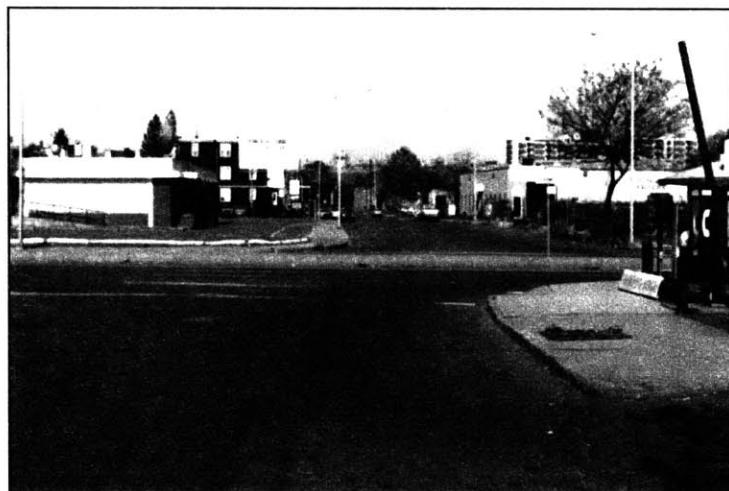


Fig. 43.2 An intersection of the Lynnway and roadway leading back into the city that could serve as gateway and marker for across the roadway to the water.

## LYNN ON THE EDGE

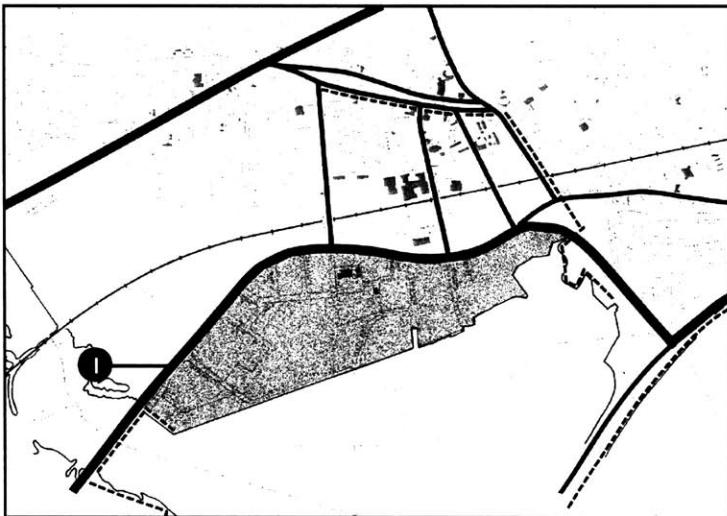


Fig. 44.1 The City of Lynn stops at I. the Lynnway not at the water from where it grew. There are only meager access points to the water presently, but no activities to enjoy once there.

"...So the ocean and the sky and the rivers hold the city in their grip, even while the people, like busy ants in the cracks and crevices, are unconscious of these more primal presences..."

Louis Mumford,  
**City Development, 1945**

There is the City of Lynn with its green Common and civic buildings. There is the Lynn Harbor, a vast, well protected watershed complete with channels and deep boat access. What lies between them are the remnants of a severe decline of an industrial economy; abandoned buildings and vacant lots now relegated to solid waste landfills and parking lots, and a six lane roadway. There are points along the edge of the waterfront that have been forever destroyed by mounds of garbage covered with tarps and acres of parking lots filled with the remnants of old trucks and autos. These locations negate any future possible use in their existing condition for the inhabitants of the City of Lynn. Only through a physical intervention and transformation of present uses with the re-conceptualization of the future of its city's natural resources might Lynn again support its waterfront.

At present, there does not exist between the city and its waterfront any direct lines of access, physically or visually. One must actively pursue a path to the water through the remnants of industries that have abandoned the city or down roadways that appear to be private or closed off.

The only definitive line of access is that of the Lynnway, a six lane roadway that cuts across and divides both physically and psychologically the city and its inhabitants from their harbor. It is only at the beginning and end of this road that one even sees the water.



Fig. 45.1 Here is the entry to the Lynn Waterfront Industrial Park. It only gets worse.

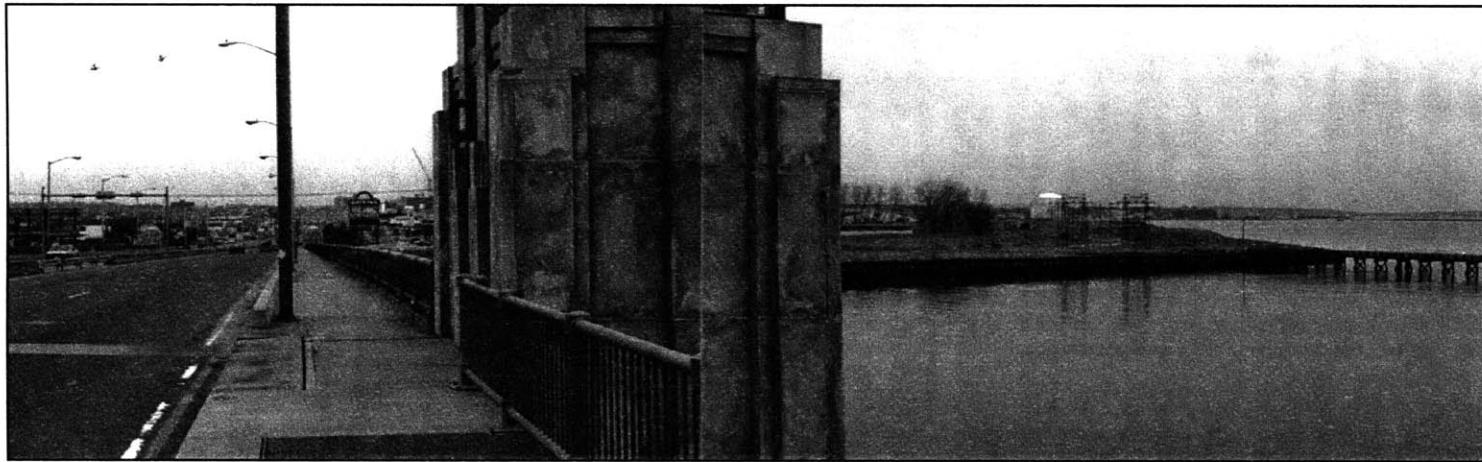


Fig. 45.2 The first and last time one is allowed to experience Lynn Harbor is during the crossing of the General Edwards Bridge. This photo shows the approach to the City and the Lynnway from Boston and Revere. Lynn Harbor and the site are to the right. Note again the LNG tank off in the distance, almost a mile away.

### The edge as divider

In a time when society is becoming more aware of the importance of the earth's limited natural resources along with understanding new methods and approaches to the handling and disposal of solid wastes and garbage, it is inconceivable that waterfront property should be relegated to waste treatment and mismanagement. The landfills underutilize the land adjacent to the water and neither benefit from their proximity to the water's edge nor employ the natural amenity. The City of Lynn has a waterfront and harbor by name only. Its inhabitants deserve to consider what it might mean, and how they might once again become, a waterfront community.



Fig. 46.1 The edge of the Harbor has recently become a dumping ground for fill from the Deer Island Treatment Plant project in Boston Harbor some 12 miles away. This mound currently does not exist anymore, only five months after the picture was taken. However, the condition of the waterfront use does .

### The edge as path

In the hope that the Lynn Harbor waterfront might again become a public amenity, the notion of the edge as path can be introduced. There exists already to the north and south of Lynn public pathways and quays along the water's edge. In Swampscott to the north, is a public esplanade for a distance of almost two miles that supports many of the town's inhabitants, whether they are out walking, running, bicycling or just enjoying the views of the harbor or Nahant islands. There are several access points down into the water along the beach, and larger green areas for special community events. Although there is a road immediately adjacent to the pathway, cross access is possible due to the smaller width of the road (only two lanes), slower speed limits, and multiple pedestrian crosswalks, with the pedestrian given the right of way. The path terminates at a bathhouse and public beach along the Nahant causeway.

To the south of Lynn is Revere Beach, the first public beach in America. It is over  $2\frac{1}{2}$  miles long and provides continuous public access along its entire length. Wide sidewalks are provided along



Fig. 47.1 Along the Swampscott waterfront, just north of Lynn is this waterfront path, extending almost two miles, connecting the downtown to the Nahant Causeway Beach. At several places are stairways leading down to the water and a beach at low tide.

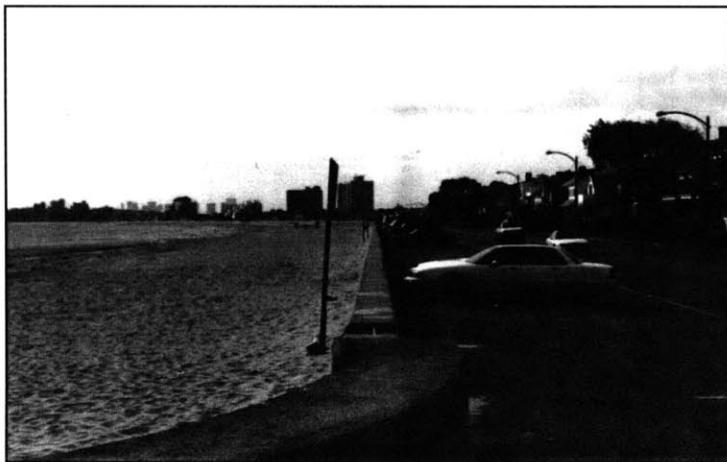


Fig. 48.I South of Lynn is Revere Beach, over 2½ miles and all easily accessed by the Revere Beach Parkway and its wide sidewalks. Though the parking along the seawall may seem a bit intimidating to enjoy the water, the beach is wide enough to get away from the cars. The parking lot itself is often filled with groups that congregate off the path of the roadway.

the seawall and on the other side of the roadway that again runs the entire length of the beach. The same rules apply here as in Swampscott, minimal road width, low speed limit, and multiple pedestrian crosswalks. Activity focuses on the many small, private enterprises along the beach, mostly restaurants. There are several covered pavilions at regular intervals along the beach, as well as bathhouses. Though there is no marine related activity, except for sunbathing and swimming, along the waterfront, there are several large scale residential and apartment buildings. There is convenient access to the beach via a mass transit system that ends at Revere Beach, and parking is plentiful, though unsightly, along the sea wall and parkway.

What the City of Lynn has the opportunity to do is connect these two separate public paths along the water with their own. What would make Lynn's pathway extraordinary is the potential for the many varied activities along the water's edge at the regular intervals where the connections back to the city terminate. Because of Lynn Harbor's special standing as a designated port facility, the chance to activate the edge of the harbor with

marine related businesses and also allow for unimpeded public access along an urban scaled structure will enhance the life and image of the city and its waterfront.

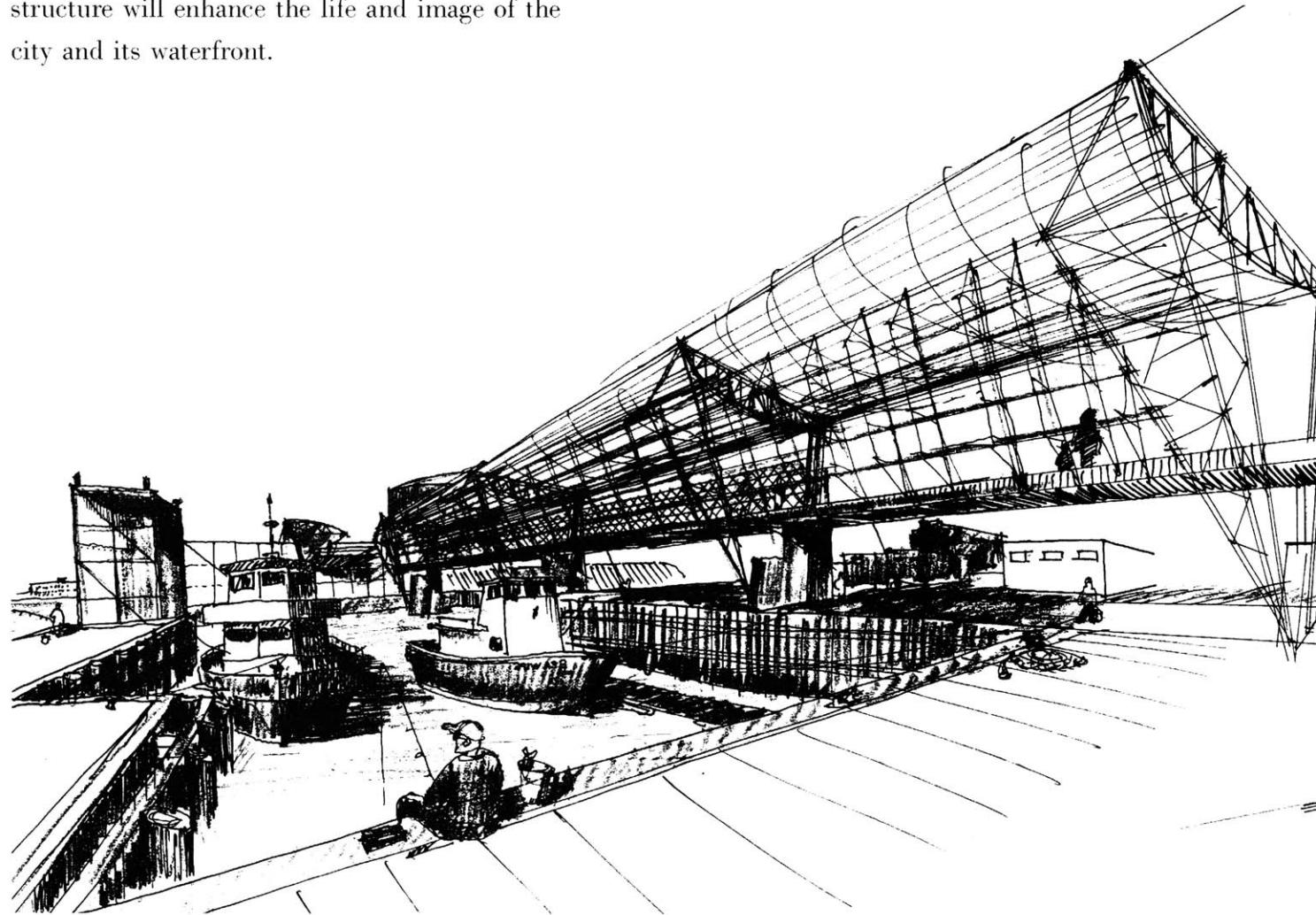


Fig. 49. I This sketch offers one vision of the way an urban pedestrian structure may allow free public access over a private, marine related business. It still allows accessibility (at least visually) for the public. The new pier in the background serves as a docking station for the loading and unloading of goods from larger ships in the channel along the shore.



Fig. 50.1 This diagram shows the current connections of downtown Lynn and its Common to the Lynnway. Fortunately, the rail line they cross is elevated by an earthen bank, allowing access to continue unimpeded underneath. Presently, the Lynnway is the defining edge of the City.

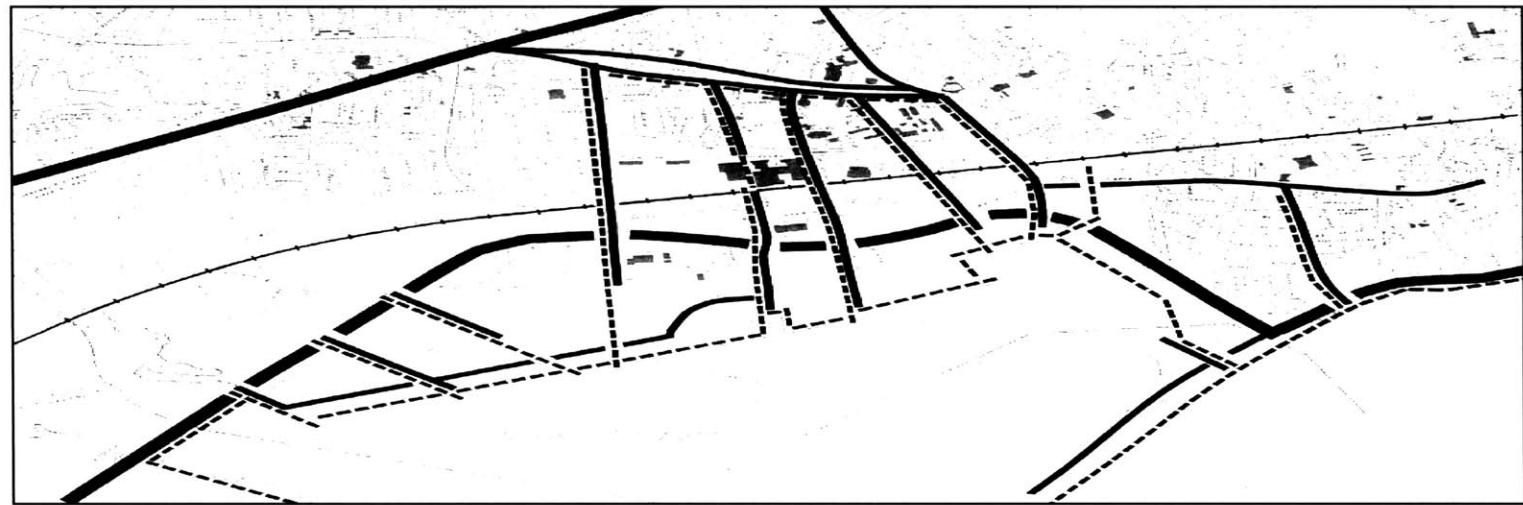


Fig. 50.2 The proposal for the City of Lynn and the Harbor includes the continuation of the esplanades (represented by dashed lines) of Revere and Swampscott along Lynn Harbor; the development of access points to the water from the City, along with the densification of uses along the roadways and waterfront.

### **The edge as seam**

What happens along the edge of the waterfront is not independent to what happens in downtown Lynn. These areas are synergistically related and must develop as a mutually supportive, integrated whole if each is to survive and flourish. The question that then needs to be answered is: Can Lynn reclaim its past heritage as a waterfront community by reconnecting its center and its people with its harbor through the readaptation, reuse and rehabilitation of the existing conditions along the water's edge? Conditions that are now burdening the city's natural resources and amenities.

If relationship between public access and private uses can be maintained, then there is the opportunity for activate the social arena of the city. As stated earlier, it is in the public realm that the city's activities occur, bringing together the myriad of uses and inhabitants that make up the life of the city.

### **The edge as catalyst**

Is it possible to develop several points along the edge of the harbor that would become the catalysts for further development inland towards the city and neighborhoods? These areas of development would terminate at the lines of access from the city, culminating at the water's edge, providing both a visual and physical connection that currently does not exist. The large planes of land that border the harbor and the Lynnway could be utilized in such a way as to densify pre-existing uses that are scattered, making available land and uses more suited to a waterfront location.

The program and design of the more specific site elements will be developed with the concerns surrounding Lynn Harbor as a project and the City of Lynn as an example of an approach for designing cities and extensions.

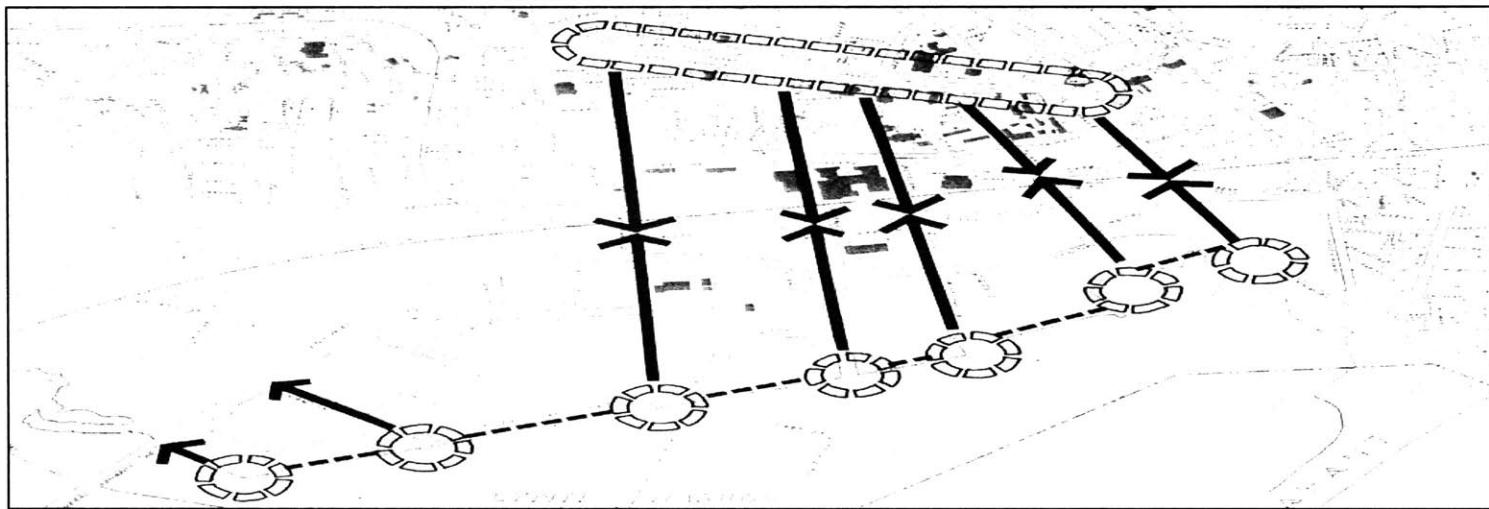


Fig. 53.1 This diagram represents ways that nodal development, in conjunction with access corridors from the city terminating at the water's edge, could form an intensification at regular intervals. If these nodes were developed with specific water related activity and uses, it would facilitate the interaction of the public in either participating or viewing such activity. The activity could range from an extension of the existing park to city event space, marinas, wharves for the exchange of goods, recreation, private businesses needing waterfront access, to civic buildings such as museums and/or an aquarium.

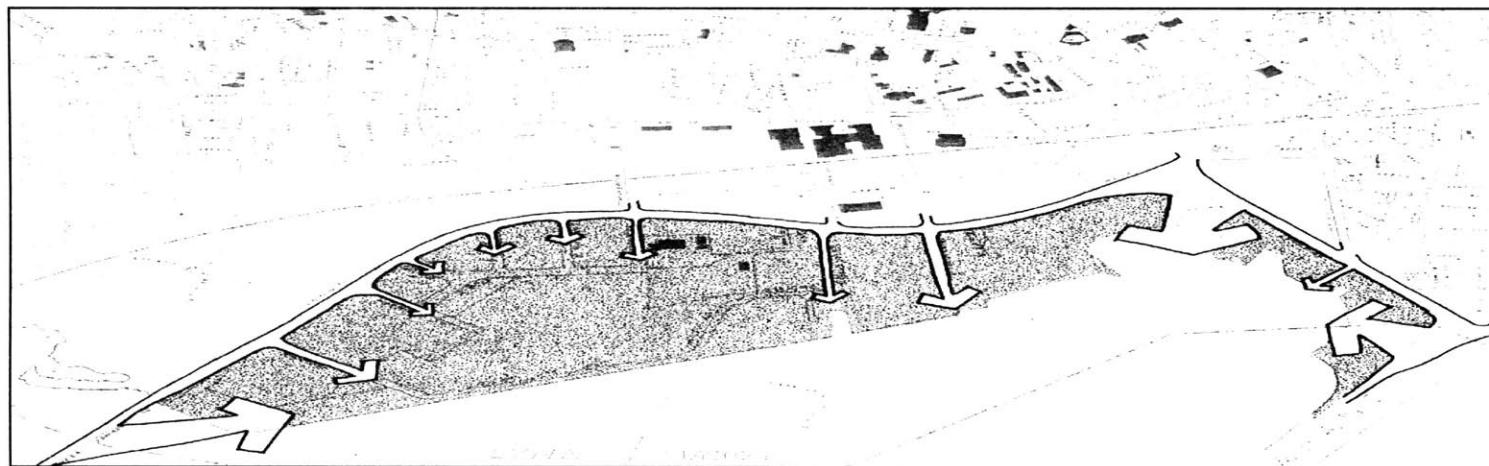


Fig. 53.2 This diagram, along with the above, demonstrates the relationship of access corridors to view corridors into the site. These could happen at the pedestrian level or for those in cars, offering framed views of the water; or at least to the potential activity happening at the edge. The larger arrows represent existing or potential panoramic views of the harbor, while the smaller arrows represent corridors or accessways to the harbor.

## THE HISTORY OF LYNN

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The City of Lynn was originally settled in 1629, only nine years after the Pilgrims landed at Plymouth and one year prior to the settling of Boston. In 1631 Lynn was incorporated as a town; and as a city in 1850.

Located between the two great colonial cities of Boston and Salem, both of which were noted for their harbors and world-wide trade, the early citizens of Lynn chose to let their harbor remain undeveloped as long as they were prosperous in their farming and crafts. Due to a shallow harbor and lack of water power, Lynn never became a major shipbuilding and commerce center. However, the history of Lynn shows that it did become a major manufacturing center and made use of both its harbor and land transportation routes to support that industry in importing and exporting raw materials and products.

Many buildings and warehouses along the waterfront and towards downtown Lynn were constructed in the 1890's and early 1900's by the Lynn Realty Trust during the period of rapid growth of Lynn's shoe industry. The Trust was formed as a non-profit cooperative to provide

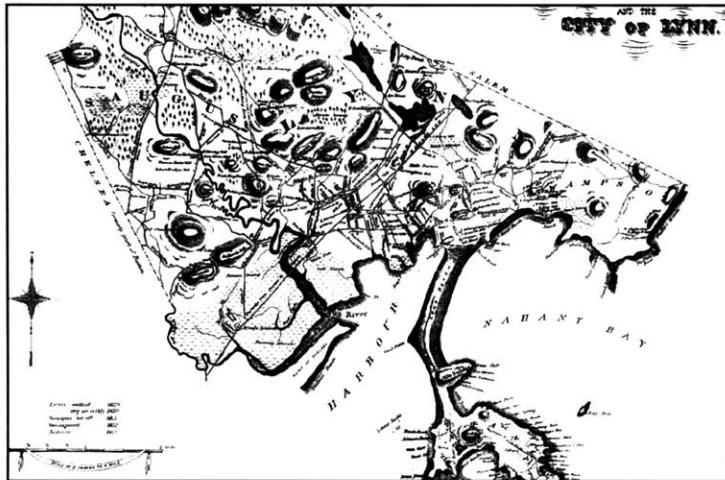


Fig. 54.1 Historic map of the City of Lynn in 1850. The City was just beginning to incorporate the water's edge into the fabric of the City by extending piers and wharves out into the water. Most of the land adjacent to the Harbor was still a salt marsh. Map: Lynn Historical Society; Lynn Public Library, Lynn, MA

manufacturing space for the shoe industry, returning any surplus rents to the tenants.

In 1634 the first iron smelting plant in America was started in Lynn, and 1635 saw the beginning of the shoe manufacturing industry that grew to make Lynn the nation's leading shoe producer by the late 19th century. Other industries such as General Electric also moved to Lynn, locating on a waterfront accessible by coal barge, a major energy source of the time.

Over the years, mainly to facilitate the shipment of coal, both the Saugus River channel and the main eastern Lynn channel were dredged. The Lynn channel was dredged first to 200 feet wide and 10 feet deep, then to 300 feet wide and 15 feet deep and then to 22 feet deep with a 550 feet wide turning basin in 1934. The U.S. Congress authorized a depth of 25 feet in 1935 and enlargements to the turning basin in 1954 but these improvements were not completed because of a lack of complementary locally financed improvements. These continuing channel improvements were justified by the eight coal piers served in 1900; the thirteen open pile piers and wharves at the head of the harbor, (5 for coal and

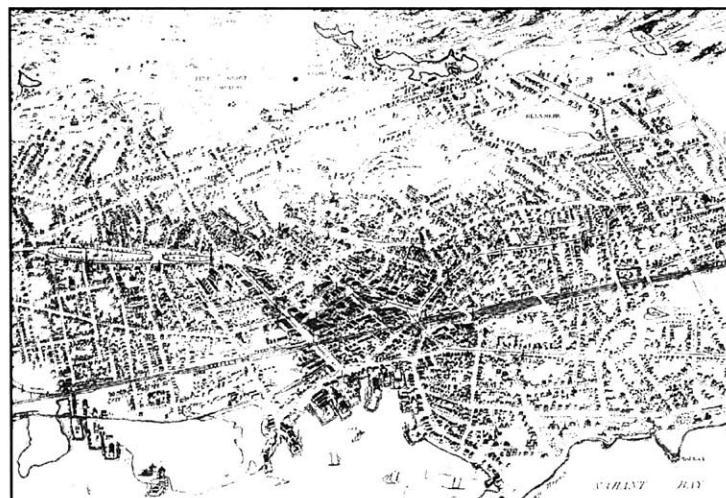


Fig 55.1 Map of Lynn, almost fifty years later, in 1898. Many of the roads that exist today are evidenced here still after a century. The main avenues that connect the City Commons to the waterfront are the same ones that today have the potential of fulfilling that function again. Already, the beginnings of what was to become the right of way for the Lynnway is evidenced by the old Boston, Revere Beach and Lynn Railroad line. Map: Lynn Historical Society, Lynn Public Library, Lynn, MA

coke, two for fish and lobster, one for lumber, two for miscellaneous goods), and the two Lynn Gas and Electric Co. wharves for coal and oil receipt that were in place in 1940.

Changes in technology and regional economics in the early 20th century helped cause the movement of the major part of the shoe industry out of Lynn. First, the railroads (Lynn factories and wharves had no rail spur access) and later truck transportation offered lower shipping rates than barge transport. Second, the change in energy use from coal to oil and electricity helped free production from the coastal waterway.

Increasing dependence on auto and truck transportation spurred the construction of the Lynnway, with its associated filling of areas of tidal flatlands and older wharf and pier areas on the inner harbor. The highway and its accompanying low density strip commercial development with some scattered industry further isolated the harbor from the more active residential and commercial center of Lynn. These changes have contributed to the present use and condition of the harbor. The major harbor activity today is sport fishing and recreational boating. Except for

an occasional sea barge shipment by General Electric and LNG deliveries for Lynn Gas, almost no commercial use of the harbor resource occurs.

#### **A t P r e s e n t**

Lynn Harbor, a natural harbor, is ten miles by land and 14 miles by sea northeast of Boston. It is three miles long north and south, and  $1\frac{1}{2}$  miles wide east and west, a large part of it being tidal flats exposed at low water. It is protected from east and southeast storms by Nahant, and southwest, west, northwest and northeast storms by the mainland.

There are three principal channels in Lynn Harbor: the western channel into the Saugus River; the Lynn Federal channel on the east leading to the inner harbor turning basin; and a channel along the bulkhead.

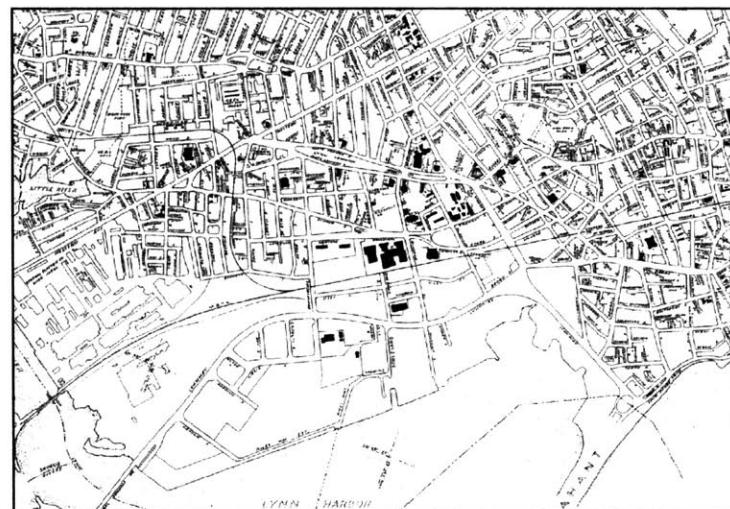


Fig 57.1 Map of Lynn as it exists today. All the connections that once existed from downtown Lynn and its Common are gone or terminate before they reach the water. Map: Lynn Engineering Department, Lynn City Hall, Lynn.

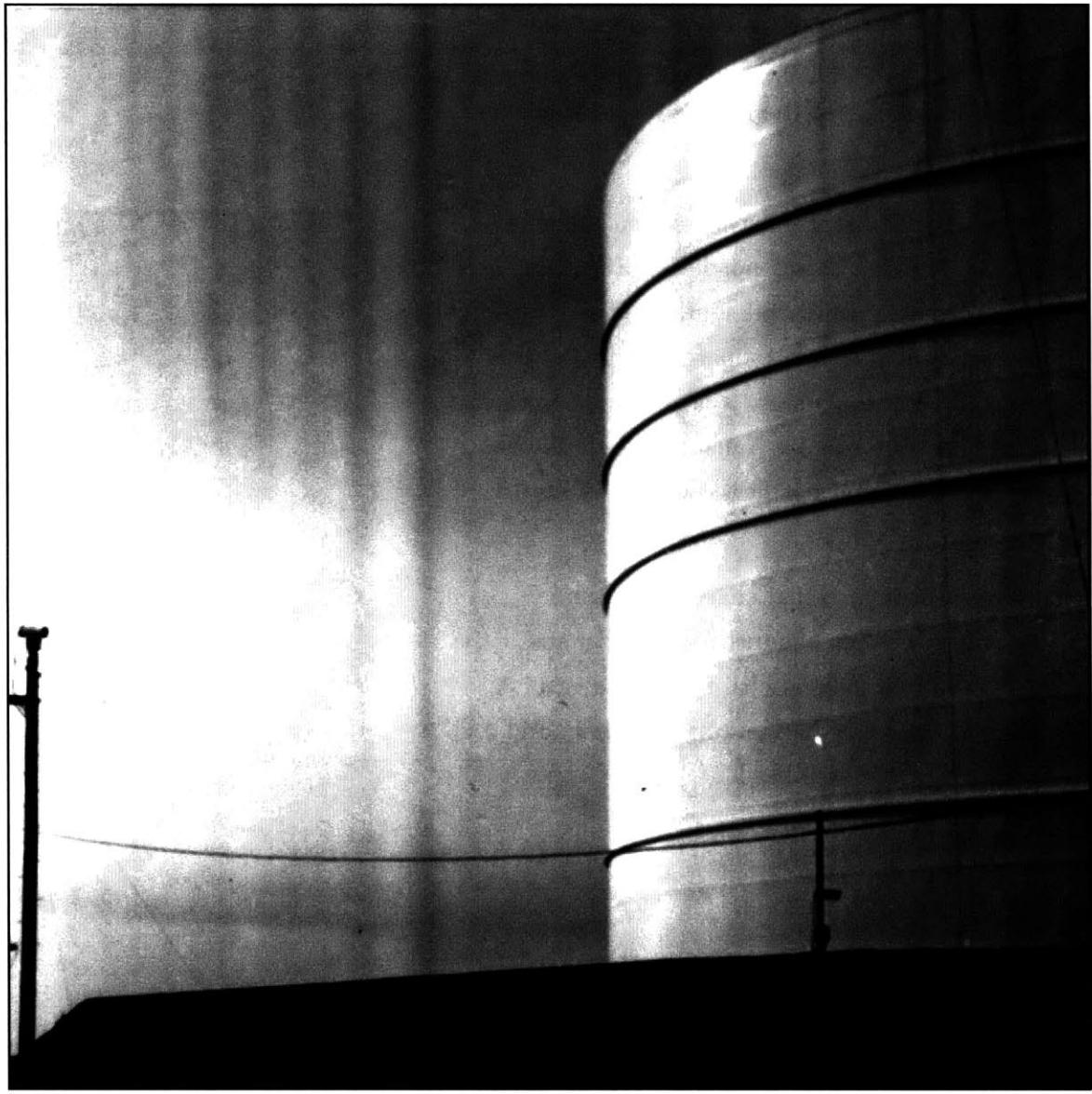


Fig. 58.1

## SOCIAL/GROUP ARCHITECTURE

The following pages represent one of many possible explorations of how Lynn's harborfront might be activated. The style of architecture may or may not be appropriate, but what it is setting out to achieve is the task of this thesis.

The problems the design addressed are the inadequate social aspects of Lynn Harbor due to the misuse and non use of the water's edge. The premise behind the design decisions were two fold; to allow complete freedom of access to and along the waterfront, and the incorporation of a structure that would facilitate this movement as well as provide an infrastructure that would promote further development, public or private, on the edge.

The intention of such a built structure was to promote a built rhythm at the city scale along the long edge of the harbor, which presently is a straight bulkhead. This larger rhythm of piers is then punctuated by smaller rhythms of support structures and activities along the way. What holds it together is the path that the piers and structures support, or by the activity occurring at the ground/water level.

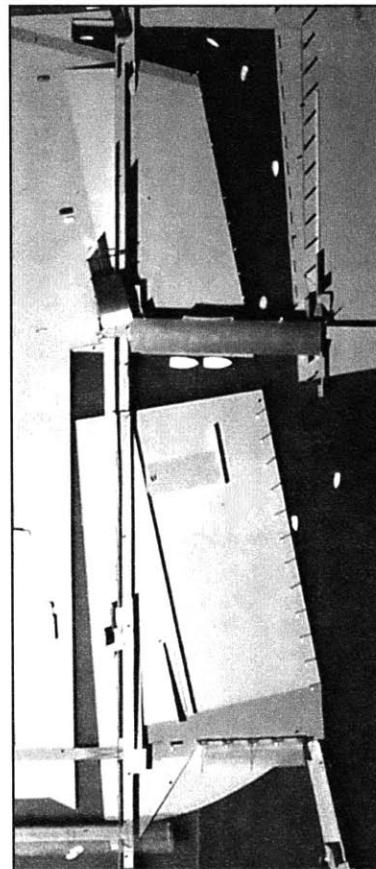


Fig. 59.1\*

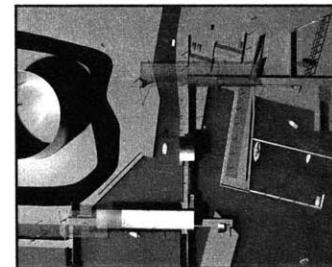


Fig. 59.2\*

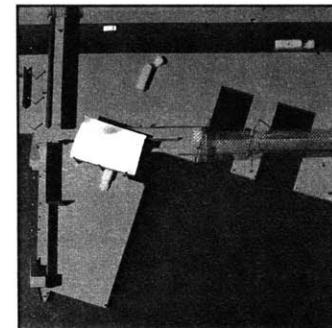


Fig. 59.3\*

\* Photo of models in plan.

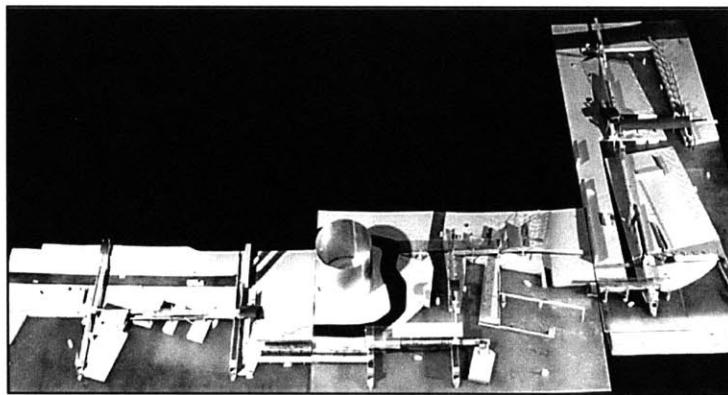


Fig. 60.1 Models of three site interventions.

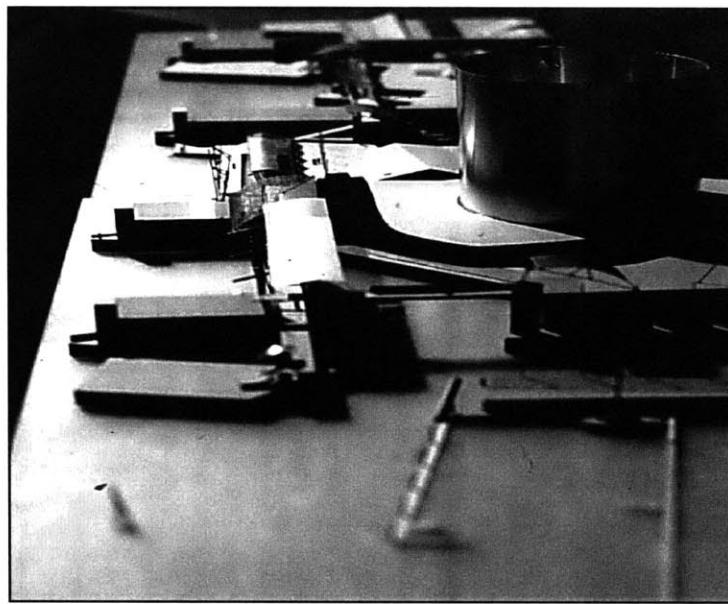


Fig. 60.2 Models with tank in background and piers extending into the water.

The activities happen at the nodal developments where access to the water from the city is most feasible, if not already existing in some form. These points allow for the movement of the city and its inhabitants to occur. Because as stated earlier, it is the movement that activates a space or place.

### The premise

The integration of access, structure, and use along the waterfront are possible within a built infrastructure that serves multiple levels. It allows for public access above and along the water's edge, providing unimpeded access to the water's edge below for semi-private uses. The structure itself increases the amount of land/water interface, and facilitating private access for businesses to the existing channel. This could be used for the loading and unloading of goods, or a controlled access to ships and other vessels in the water.

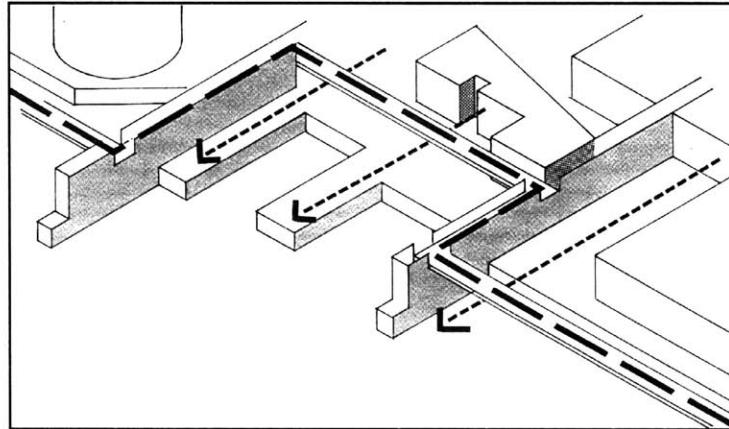


Fig. 61.1 Diagrammatic axonometric showing public access (long dashed lines) moving along the edge and over the private intervention, still maintaining direct access (short dashed lines) to the water. The structure encloses this portion of the harborfront and screens out unappealing backgrounds, (the LNG tank).

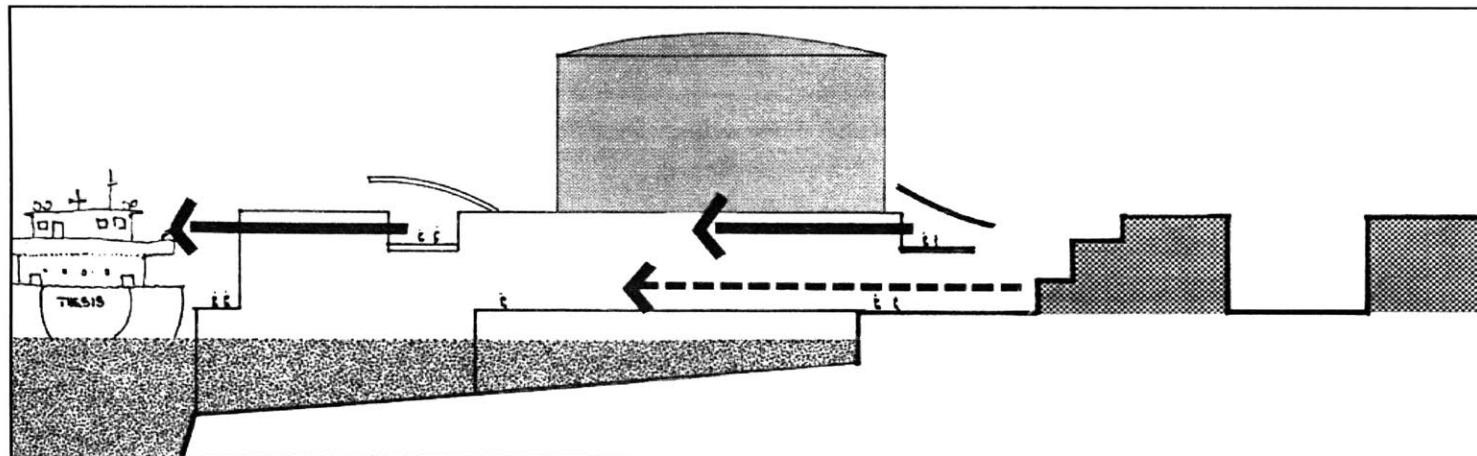


Fig. 61.2 Diagrammatic section showing how access and views can operate unimpeded at the water's edge. It also demonstrates how the pier can "reach out" to the ships in the channel and offer to the public sights usually allowed only to those working the waterfront.

The structural piers act to engage and enclose a portion of the water and its edge. They act as a framework or backdrop between which private functions (e.g. a marina), can operate yet still allow the public to move across to experience the water and view the operations below. The framework can also provide the initial structure off of which other structures or buildings may be built from. In this way, the controlled access runs perpendicular to the edge at ground level, giving entry and access to both business and water.

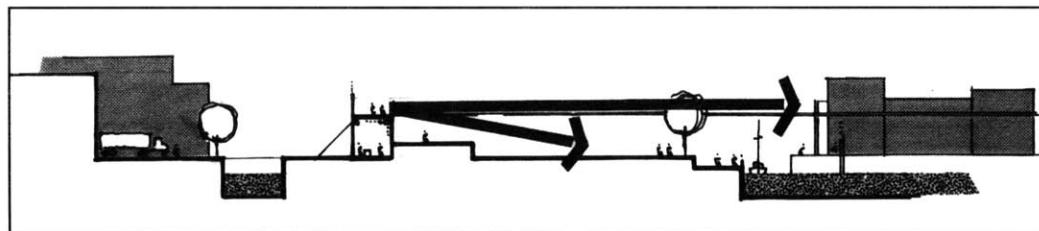


Fig. 62.1 This section, though more site specific, demonstrates the reintroduction of canals and piers to separate public and private uses, also controlling the view through the use of the structure as backdrop.

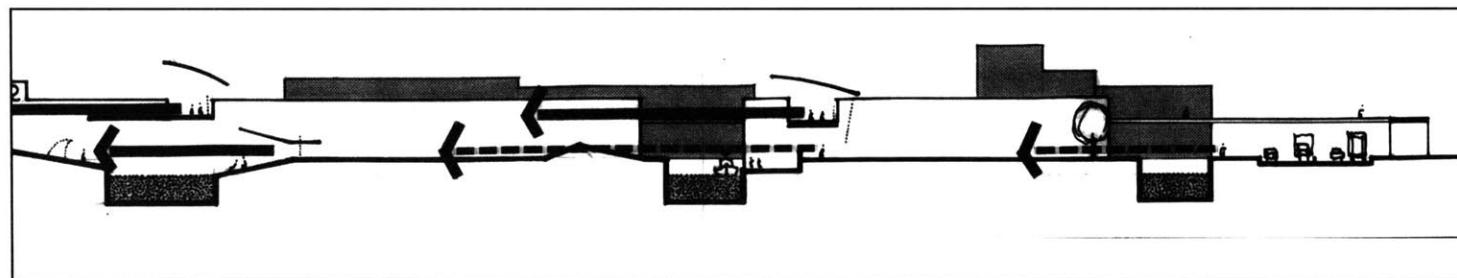


Fig. 62.2 This section represents the city event area, using water to differentiate between the sizes and uses of the park lands in conjunction with access above to contain an area or screen the views beyond.

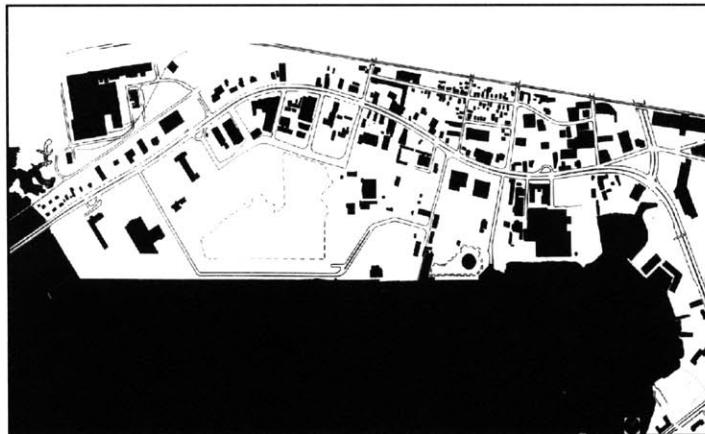


Fig. 42.1 Existing conditions

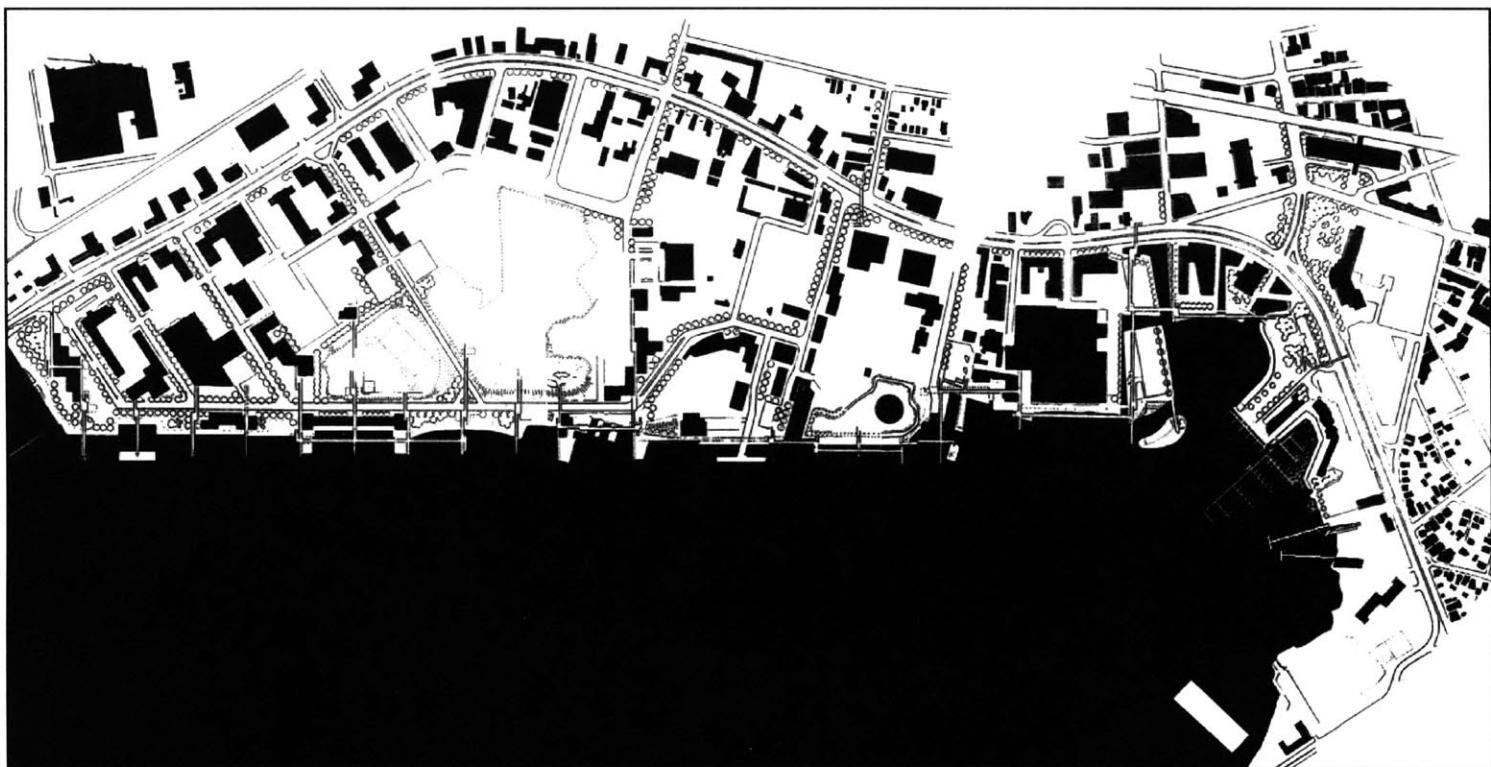


Fig. 63.1 The site after all interventions. The densification of regional businesses along the Lynnway, the strengthening of connections to the city, the extension of piers into the water; the extension of the water into the land, and the uninterrupted access along the edge for the public.

## STRUCTURE AS CITY EVENT

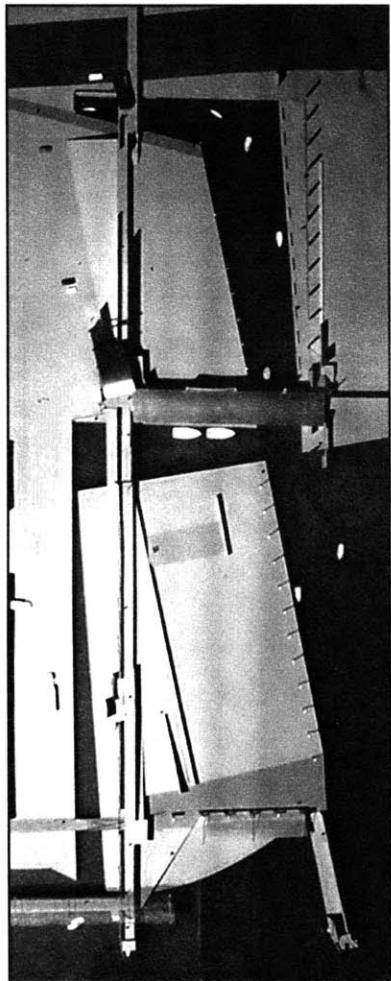


Fig. 64.1 Plan photo of City Event area, showing water canals, island, and pedestrian structure enclosing the different spaces.

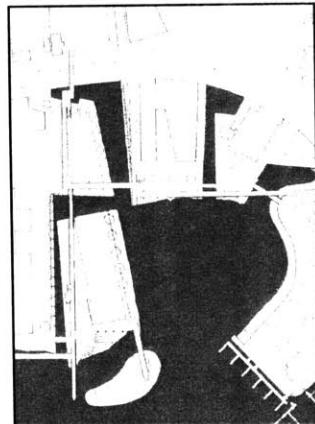
This area is already has the strongest ties back into the center of the city. It is adjacent to the Lynn Heritage State Park and the North Shore Community College. There is an availability of large parcels of land that could be used as an event space or for large public gatherings. It is here that the city could offer its citizens a park on the water, a festive atmosphere for special events (e.g. Fourth of July celebrations) or outdoor activities. The form of the land and water could be reminiscent of the past with channels or canals similar to those at the turn of the century, when the water and ships were allowed to become part of the fabric of the city.

The channels create an island, at once making it secluded, but also giving it a characteristic and identity for the city to embrace. It allows for the reciprocity of land and water, giving reason for the structure which then must move up and over the water, creating enclosure at the city scale.

The existing State Park provides the opportunity to continue the public access along the water and continue the social structure to the water. With this access to the edge, amenities to the public

could be introduced, such as a commuter ferry that would activate the edge with boats and people coming and going.

This area can be developed as the initial catalyst for reclaiming the Lynn Harbor and making a strong connection to the city. With an already undulating waterfront, a State Park, a daily population influx of students to the North Shore Community College and an existing marina, the City Event area could quickly bring the city to the water.



Key map

Fig. 65.1 Plan drawing of City Event area, showing reciprocity of land and water.

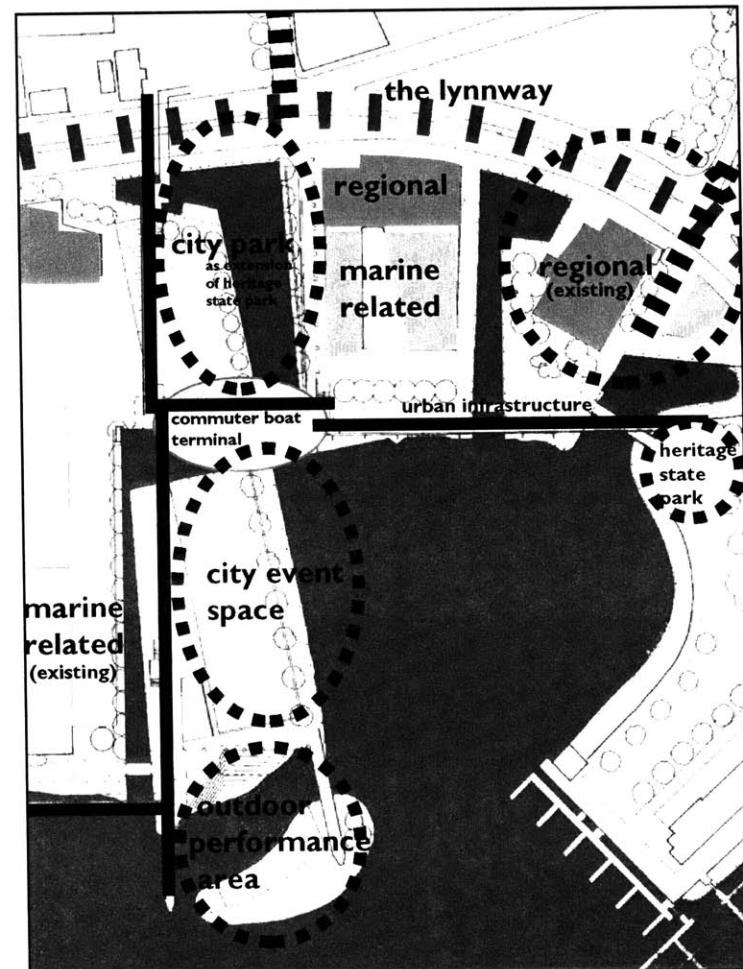


Fig. 65.2 Diagram of City Event area, with associated uses and interventions. The structure provides access from the City to the water; as well as continuing the harbor walk, starting in Heritage State Park.

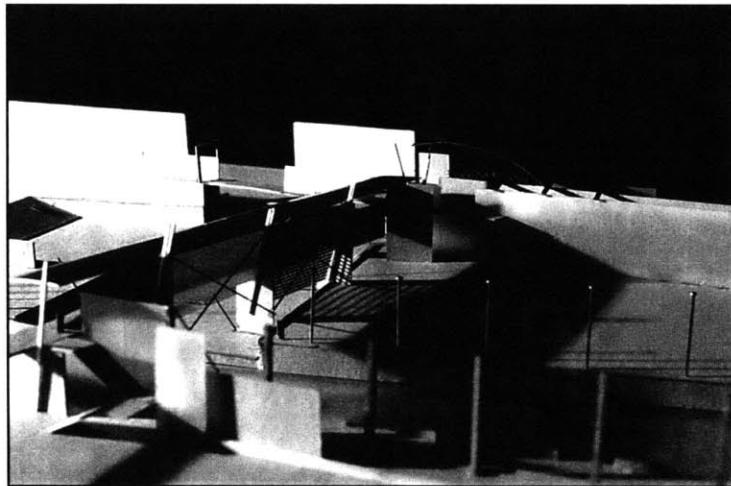


Fig. 66.3 Close-up of elevated walkway over channel, providing cover for commuter ferry terminal below. It also defines edge of park space.

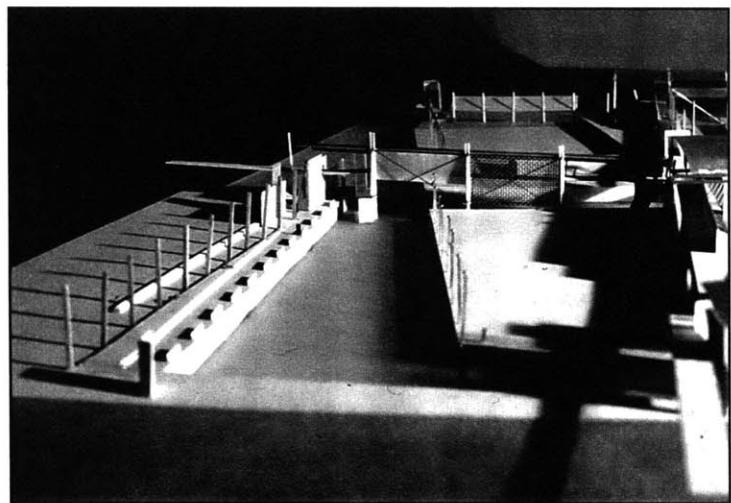


Fig. 66.2 Model as seen from approach from the city towards the water. Structure on right provides screen for private uses beyond. Elevated walkway acts as backdrop for outdoor events (movies, banners, etc.)

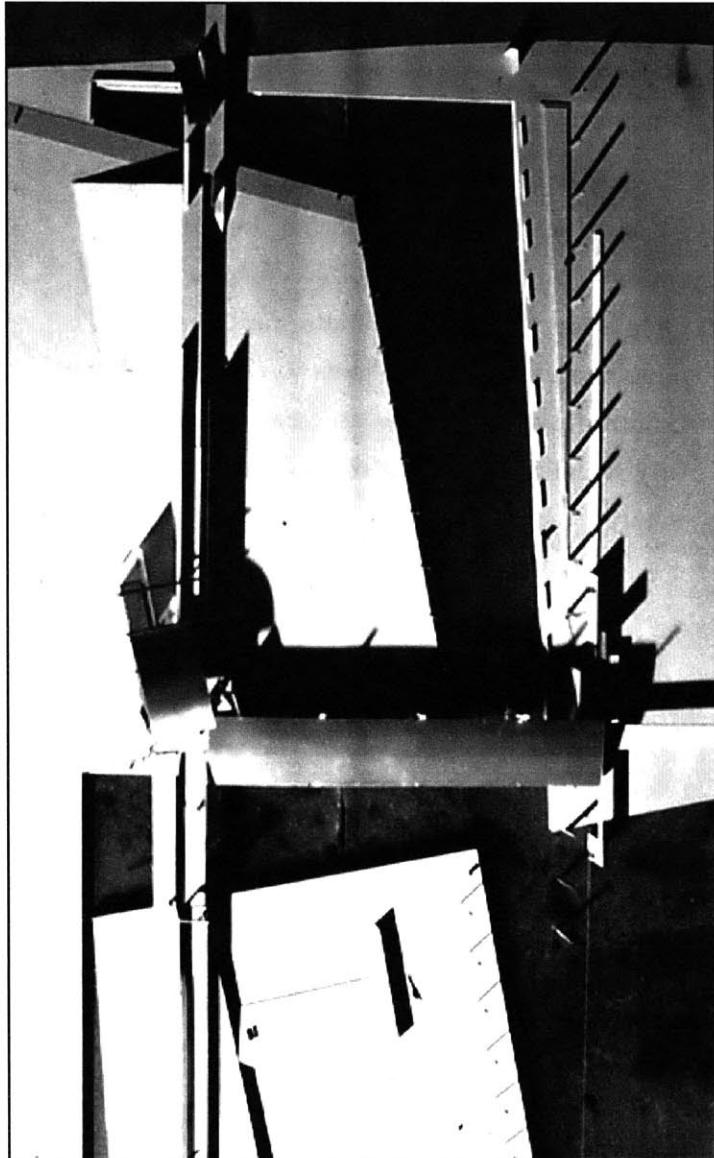


Fig. 66.1 Close-up plan photo of model showing water canal at the edge of the Lynnway and pedestrian access across both road and water. Elevated walkway also provides covered areas below.

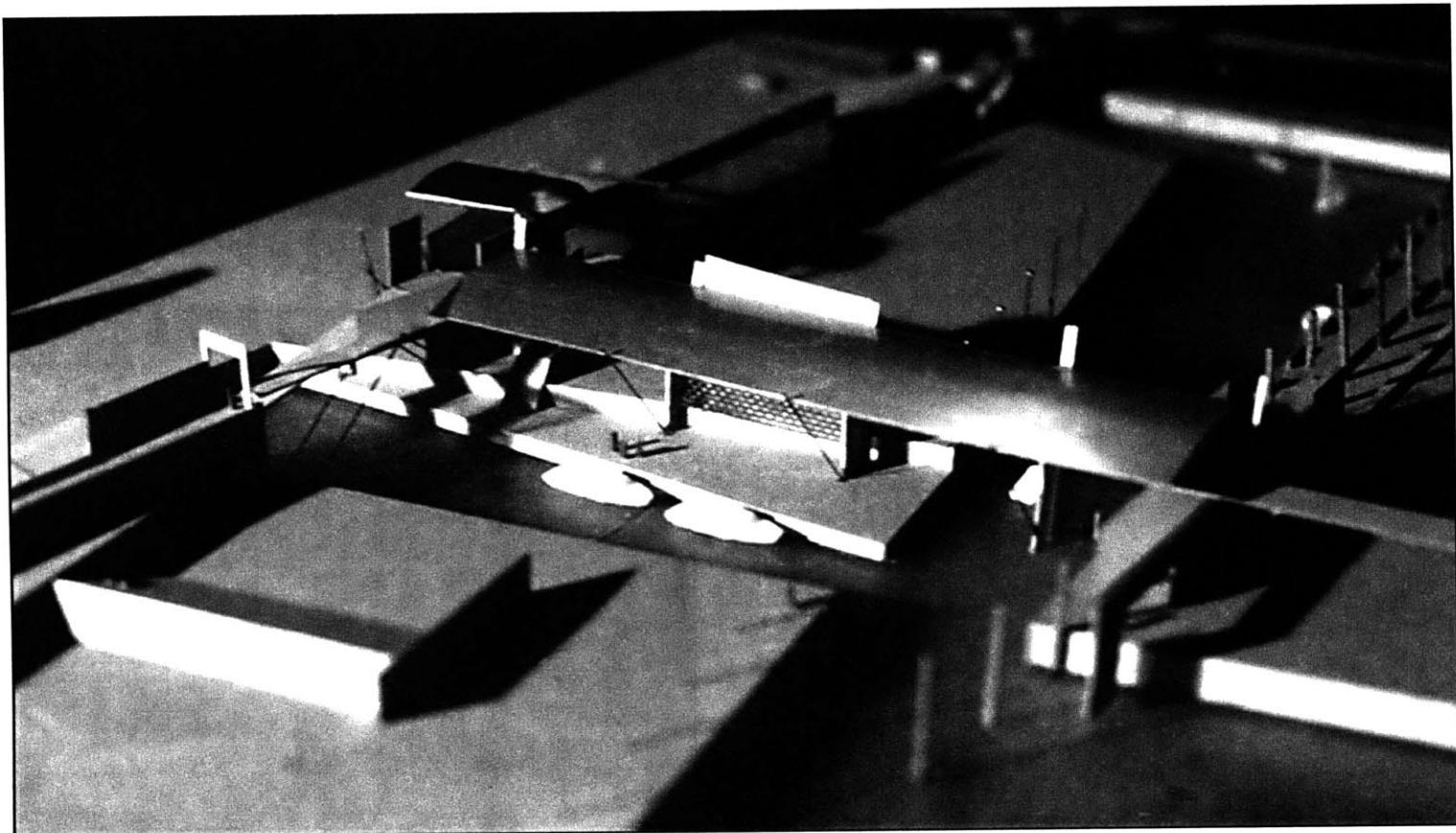


Fig. 67.1 Bird's eye view of commuter ferry terminal. The ferry could take commuters to Logan Airport, Nahant or other excursions. Shelter is provided by walkway above.

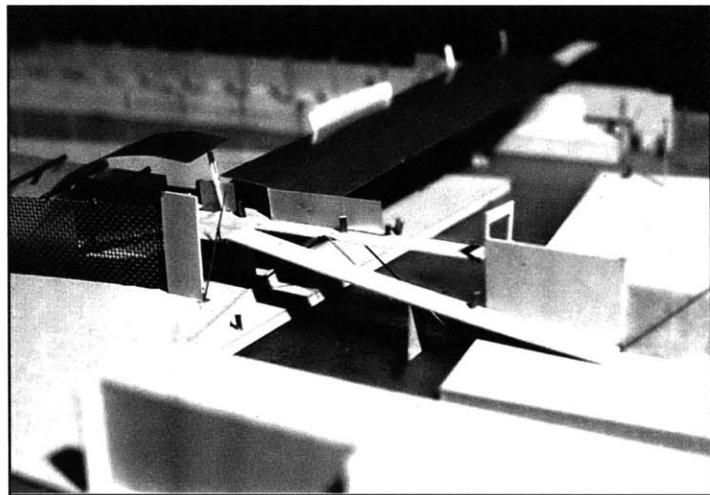


Fig. 68.1 View of commuter ferry terminal from other side. It is here that vertical and horizontal access up and over the water is possible. Roof form helps to define the view from walkway.

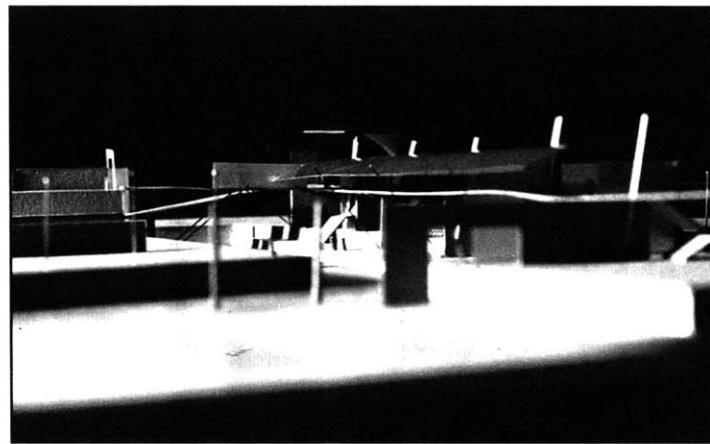


Fig. 68.3 View of commuter ferry terminal as one approaches by boat.

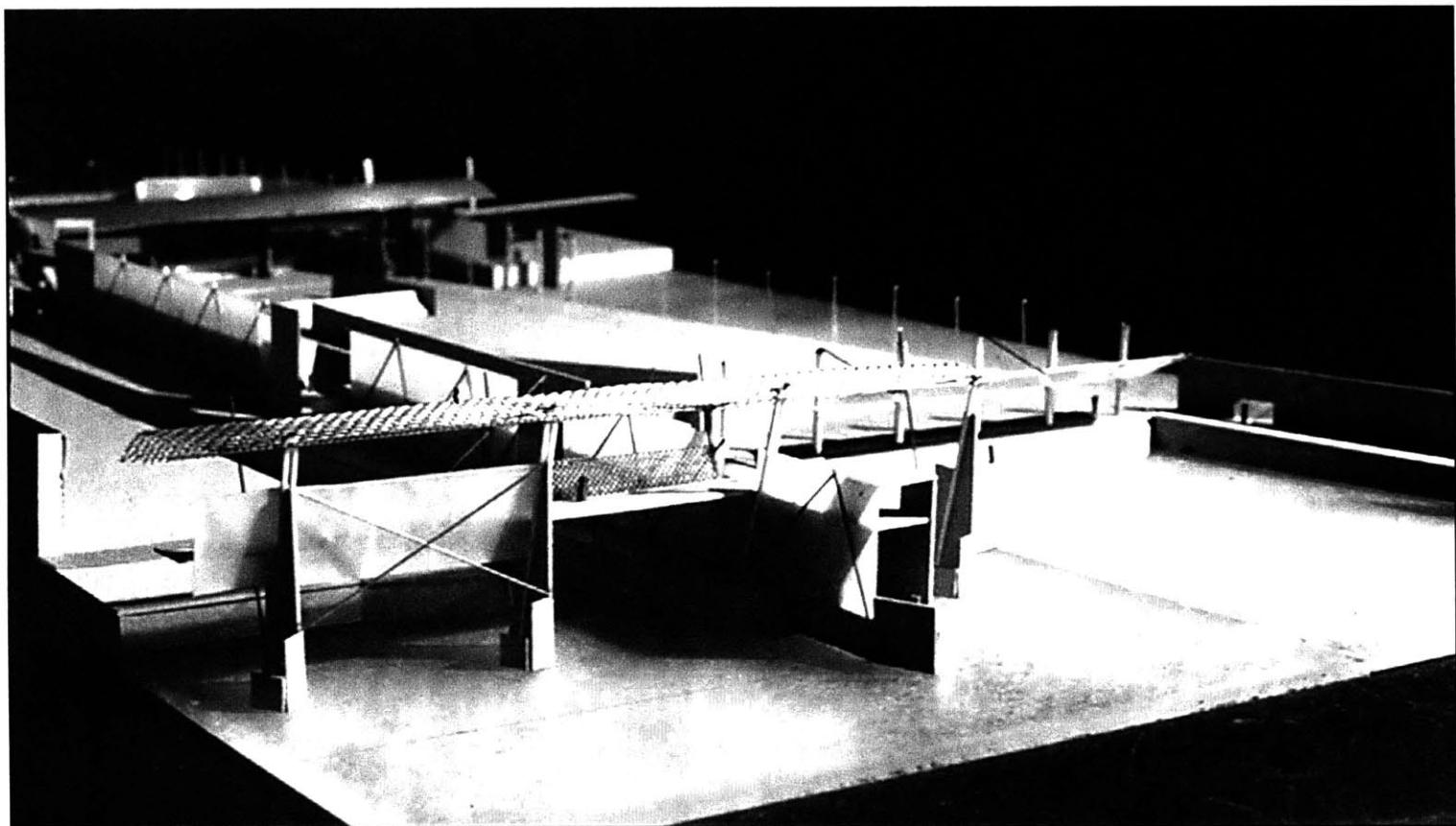


Fig. 69.1 View of entire model from water.

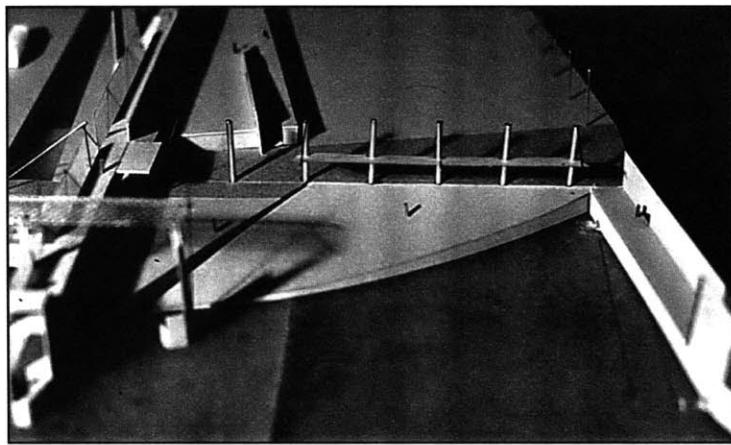


Fig.70.1\* Close-up of outdoor seating area looking towards the water. Area is contained between two piers.

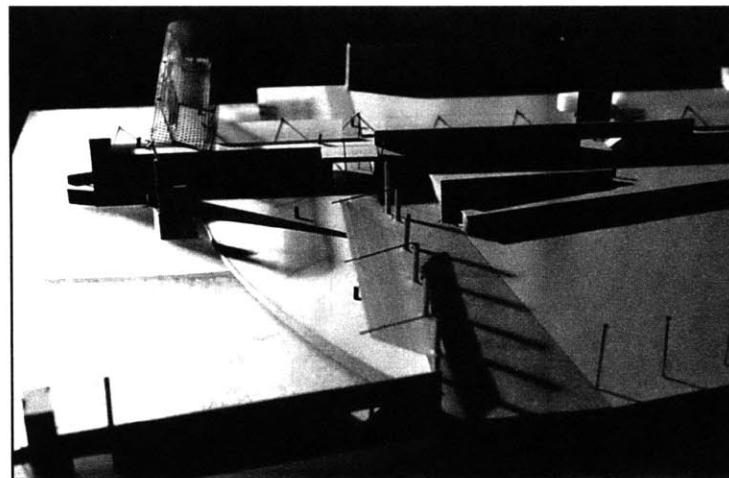


Fig. 70.2\*Elevation view of performance area with overhead canopy and elevated walkway in background.

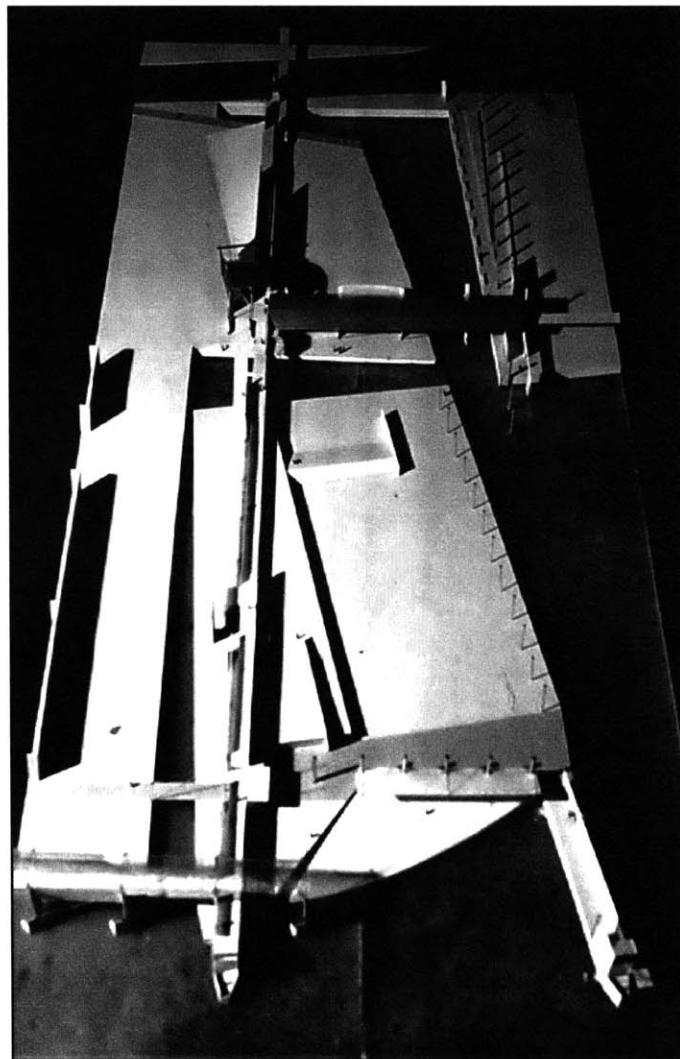


Fig. 71.1 Bird's eye view of event area from harbor: Angle and orientation of channels and structure are dependent on access and site lines from the city to the water.



Fig. 71.2 Sketch of canal and pedestrian bridge over commuter ferry terminal.

## EXPANDING THE EXISTING

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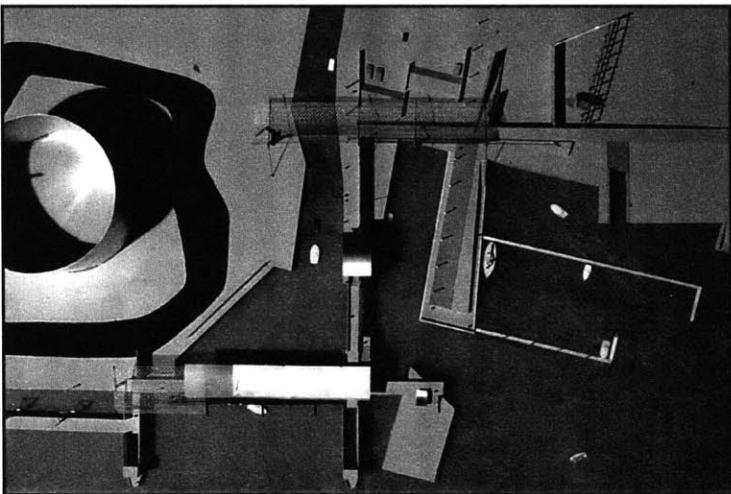
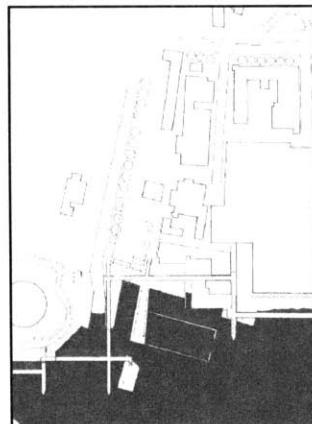


Fig. 72.1 Plan photo of model depicting upgraded boat ramp, new marina and wharves and piers extending into the water. Here, the water is also brought into the land. The fill used to create an off shore island accessible by boat or pedestrian walkway.

Fortunately for the citizens of Lynn, there is one unimpeded access to the water. Unfortunately, it is right to the liquid natural gas tank that borders the harbor. Down Blossom Street from Lynn Common and terminating at the water is a public boat ramp, free to anyone that needs to put or pull their boat from the water. Previously, there also existed a marine supply shop along with a bait and tackle shop, both of which have ceased to exist.

Since there already exists access and parking near the water, it would seem likely that a more intense development could occur that was part of the larger urban structure. It would serve as a terminus from the city and the pedestrian access along the water, increasing the activity of movement. The infrastructure would provide a controlled access for expanded or new waterfront services such as a marina, while also supplying the public at large a reason to participate in the activity at the water. It could be something as minimal as enjoying the scenery of the boats and their related activity of the operation of the marina.

It is also here that the largest ships come to dock in the harbor. The channel runs parallel to the shoreline and the new piers could extend out for mooring of the larger ships.



Key map

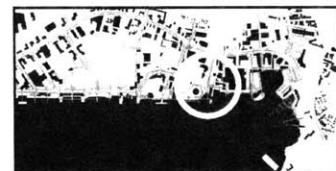


Fig. 73.1 Plan drawing of marina area

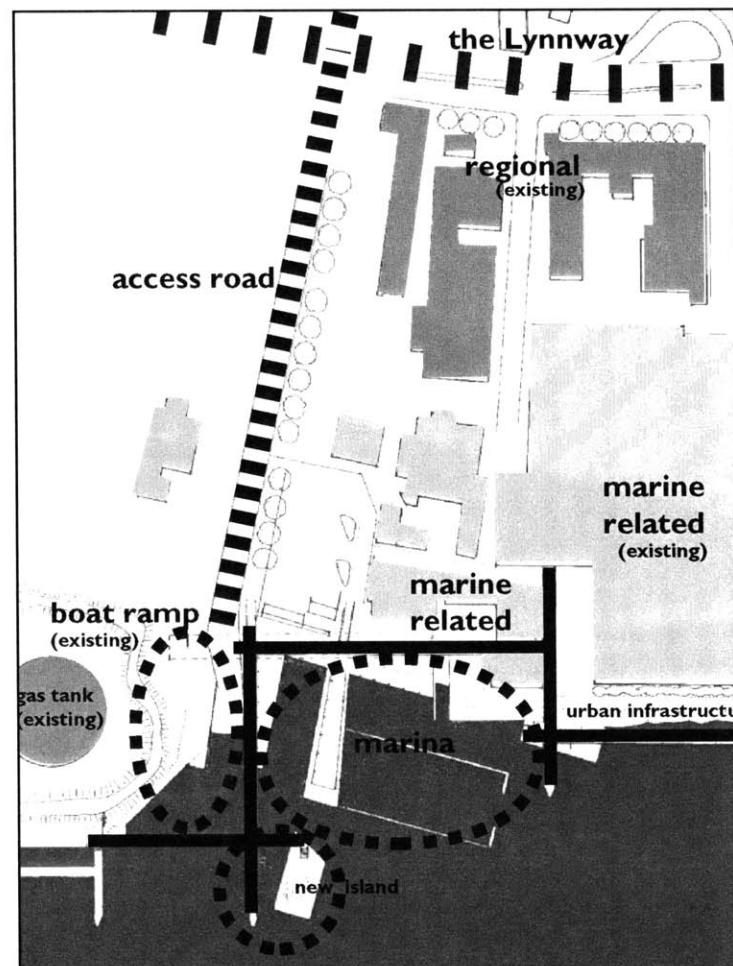


Fig. 65.2 Diagram of marina area, with associated uses and interventions. The structure frames a private use while allowing public access and view over it. The reintroduction of piers and wharves harks back to the original shoreline.

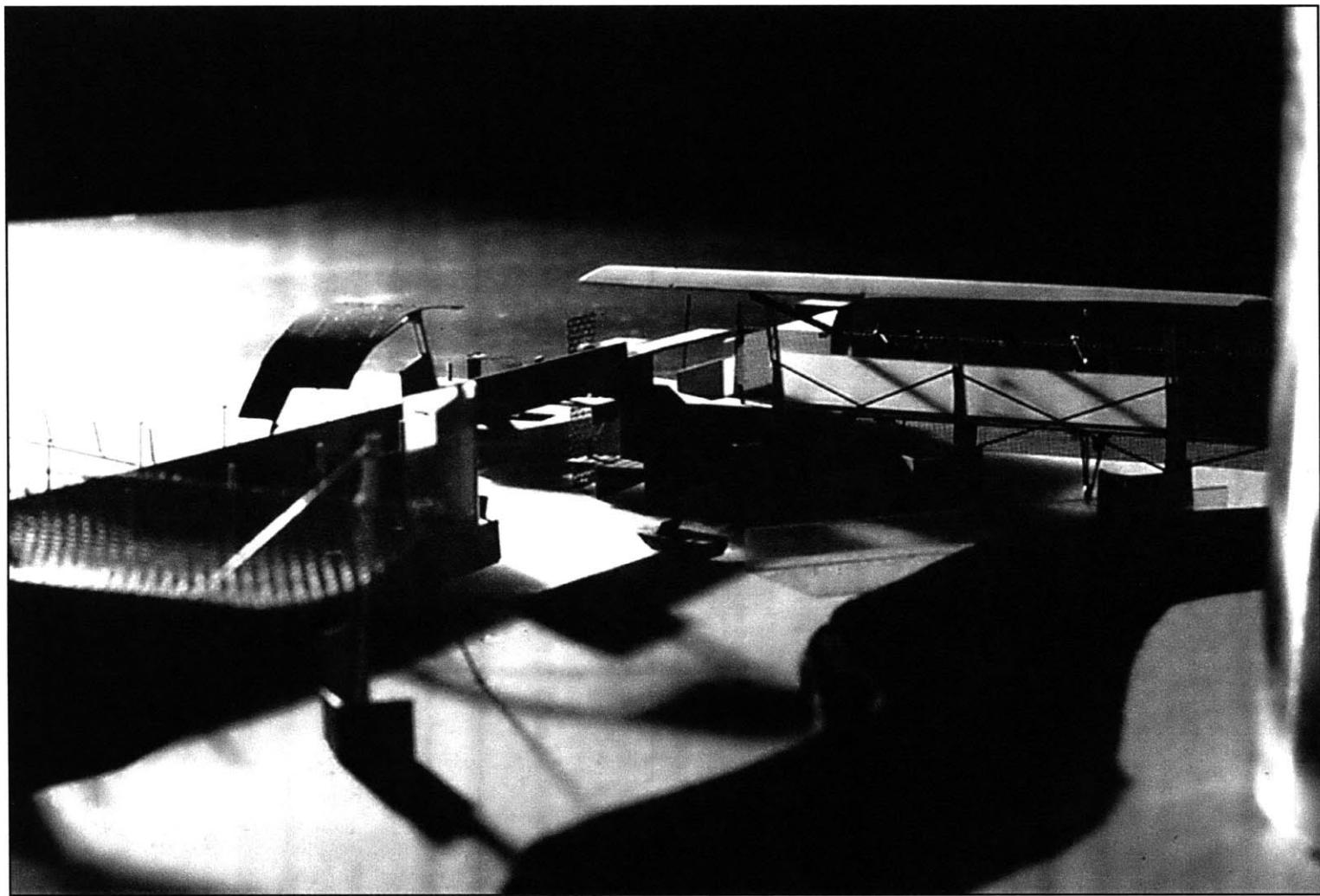


Fig. 74.I Plan photo of model depicting upgraded boat ramp, screened elevated walkway and bridge structure out to new island.

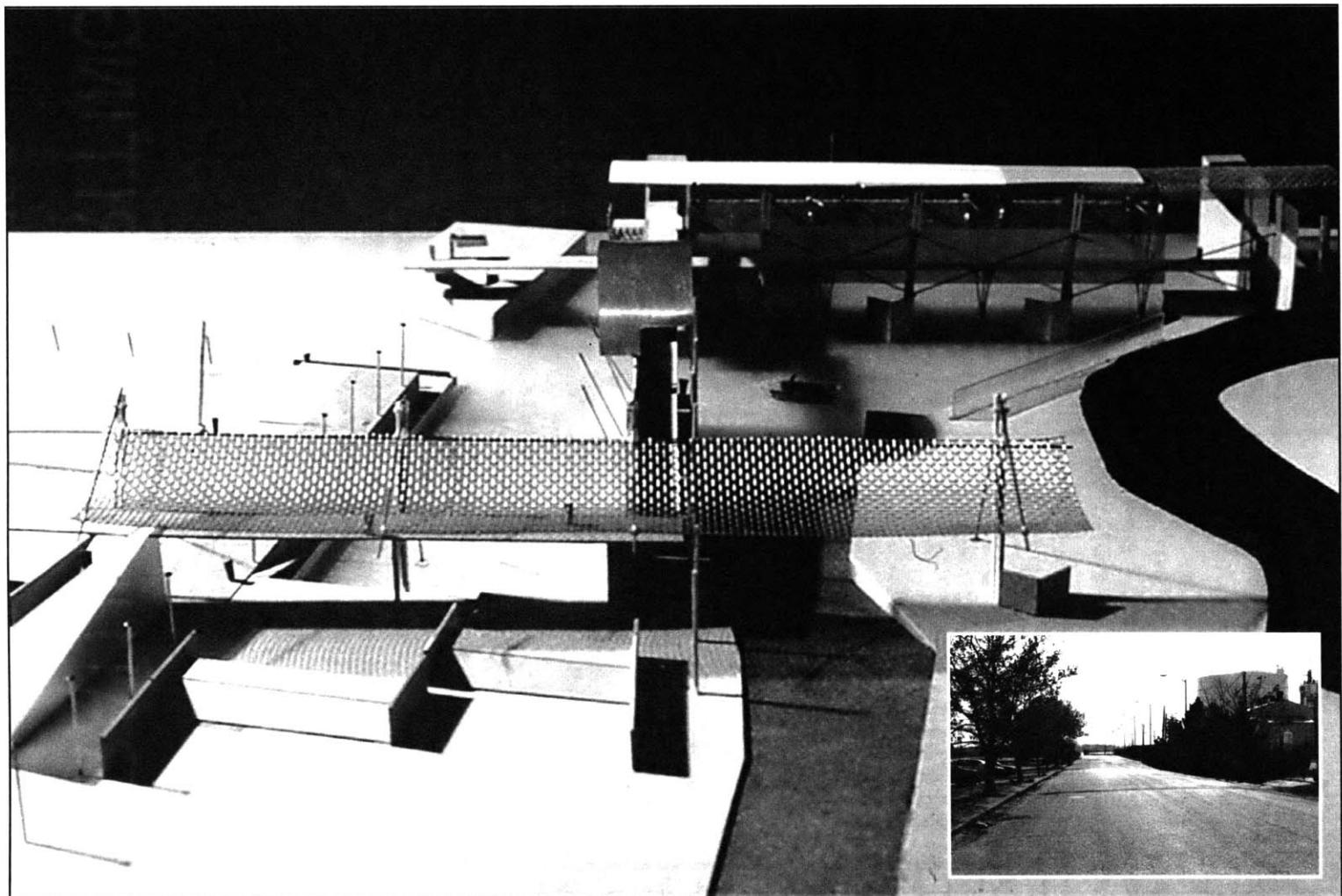


Fig. 75.1 Photo shows the approach to new marina and boat ramp from the city to the water. Structure provides framed views of water, while also screening large tank. Inset photo shows existing condition of approach boat ramp.

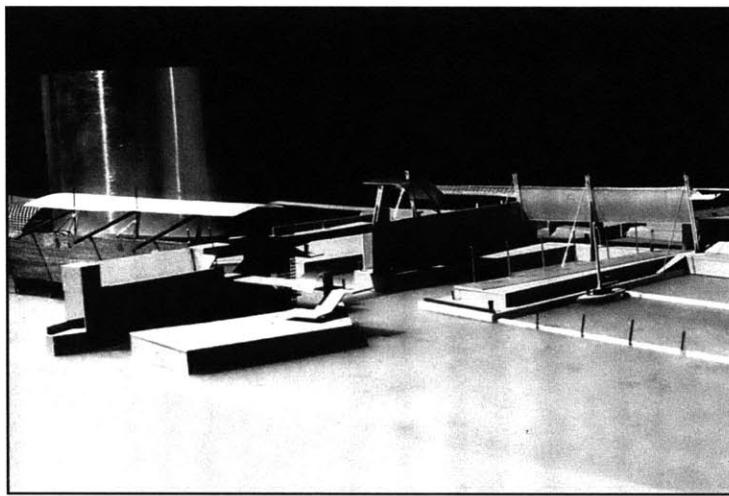
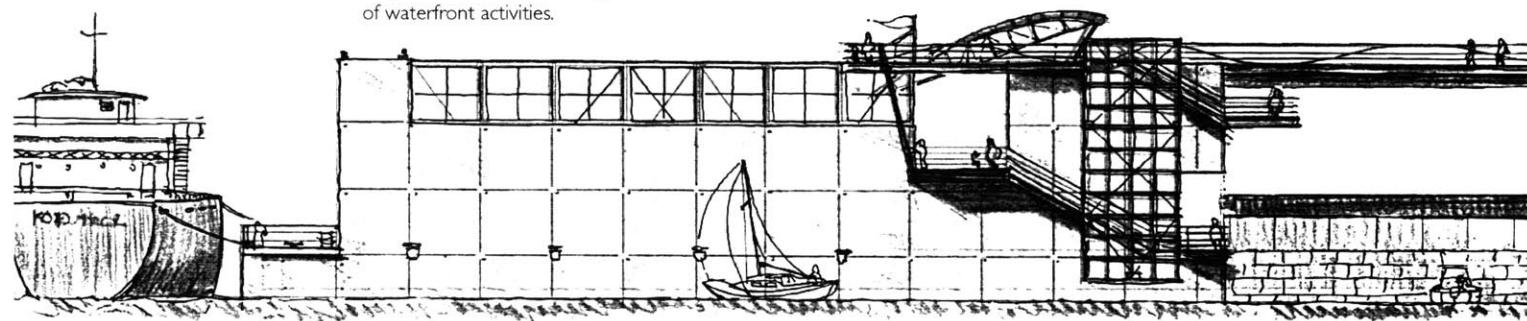


Fig. 76.1 Image of marina from water showing pier extending out to water with public access along and over the water. In the foreground is the island and marina . Note the tank in the background behind structure and screen.

Fig. 76.2 Drawing of proposed structure framing marina, providing mooring for large ships, and allowing for public access and viewing of waterfront activities.



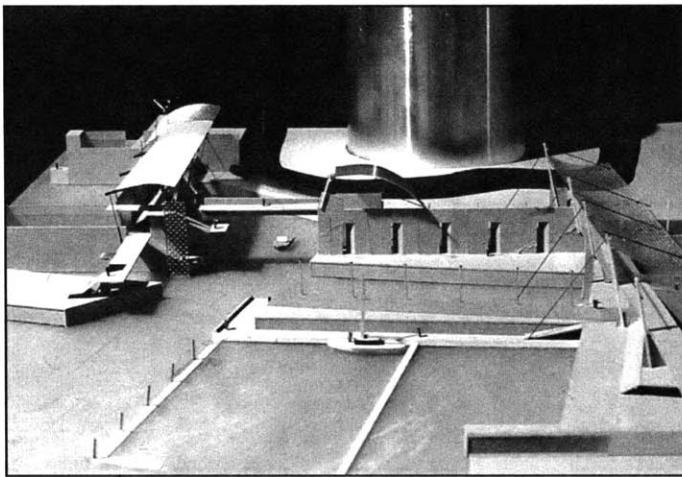
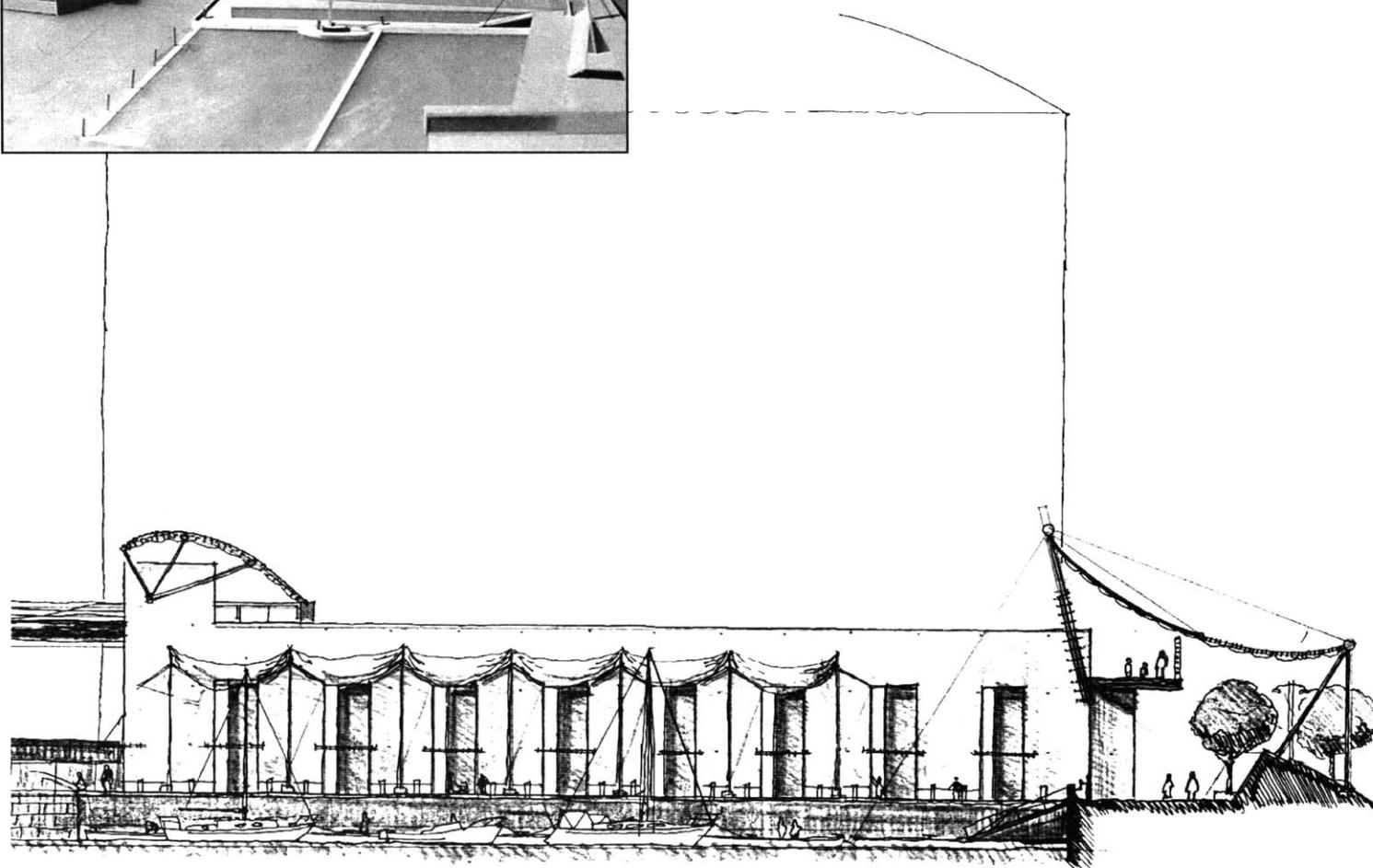


Fig. 77.1 Photo of model as seen from the City Event area.



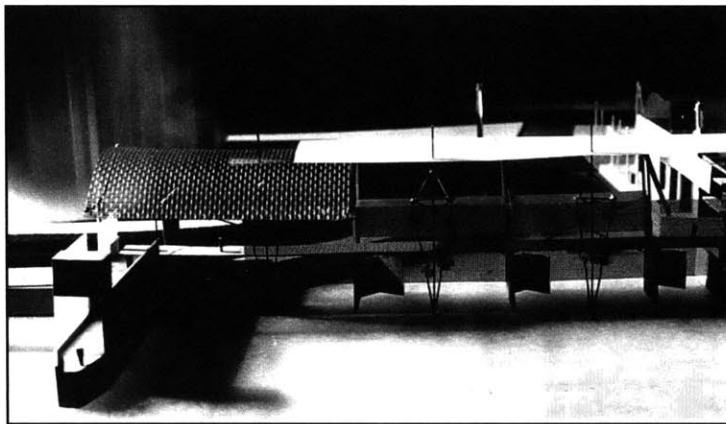


Fig. 78.1 Elevation study of the elevated walkway with screening and support structure that is reminiscent of sail mast and cranes.

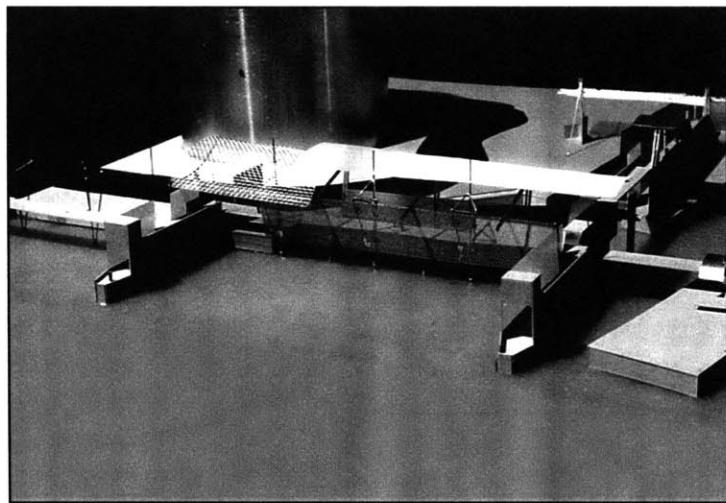


Fig. 78.2 Bird's eye view of walkway and support structures with a possible roof structure that provides shelter over the path.

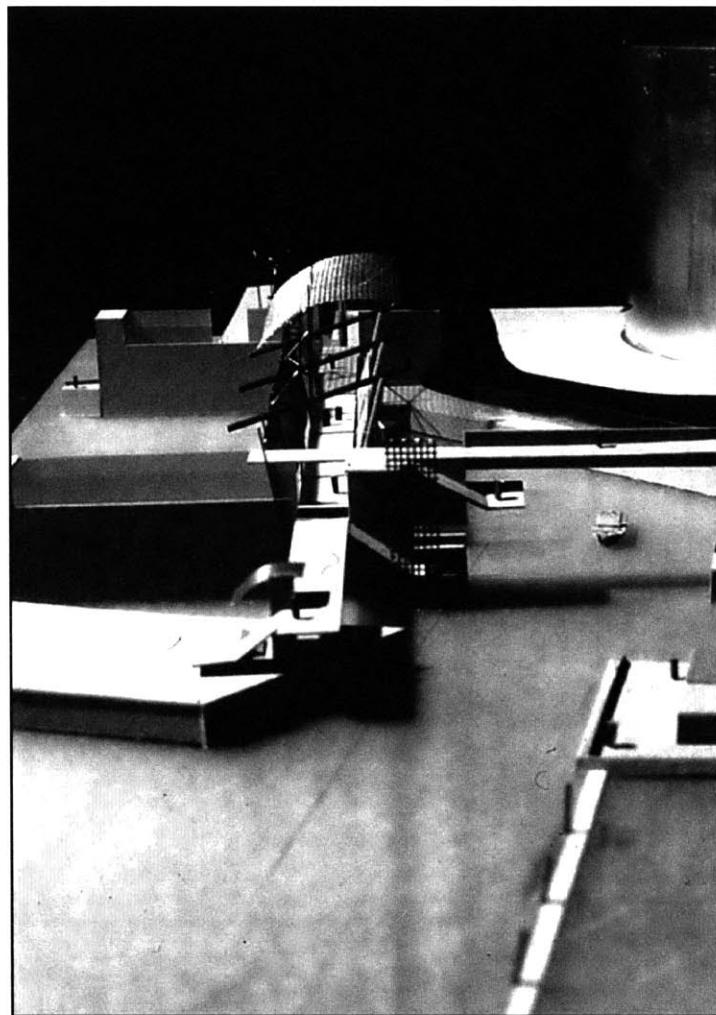


Fig. 78.3 Photo of model showing bridge over water to the new island. This photo also shows continuation of elevated walkway along the coast.

## RECYCLING THE WATERFRONT

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Lynn has the opportunity to be on the cutting edge of the recycling and environmental crusade that all cities will inevitably have to partake in. A fairly large and technologically advanced recycling and waste treatment center already exists on the site. With an expansion of the site, it would be possible for Lynn to accept materials from a sea route as well as by land.

The City of Lynn can pilot many programs for new methods of handling disposable wastes, i.e. bringing barges to the site through the existing channels. In the past, the city has tended to build land fills on large tracts of land, negating any future use. There is an example of this immediately adjacent to the Harbor. This fact alone should be cause enough to come up with a better solution to today's problems. Instead of repeating history, Lynn could utilize the problem as the solution.

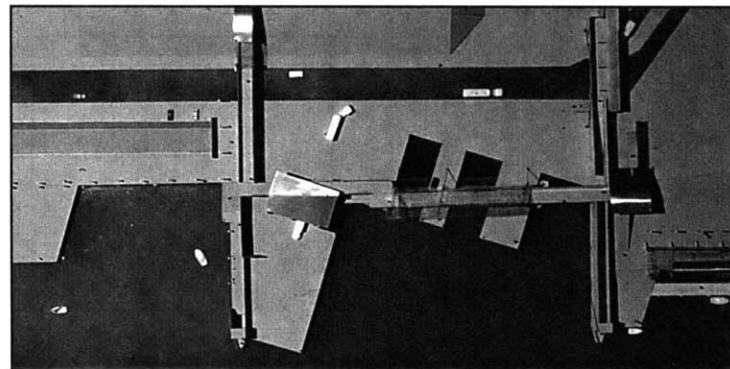


Fig. 79.1 Plan photo of model showing berths for ships and barges. The pier structures act as walls for private functions. At these piers, vertical access is provided for the public to move up and over the new waterfront land use.

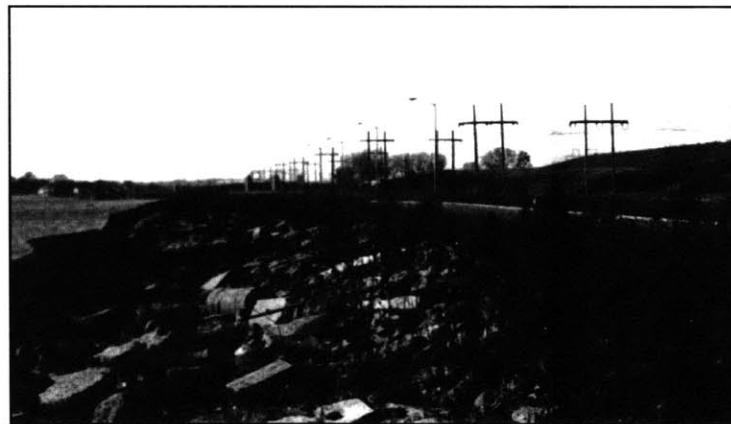


Fig. 80.1 Portion of the site as it exists today.

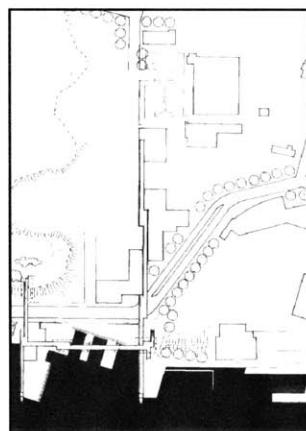
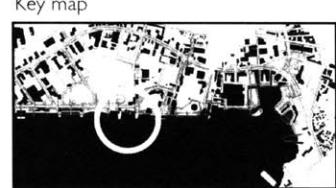


Fig. 80.1 Plan drawing of recycling center and depot.



Key map

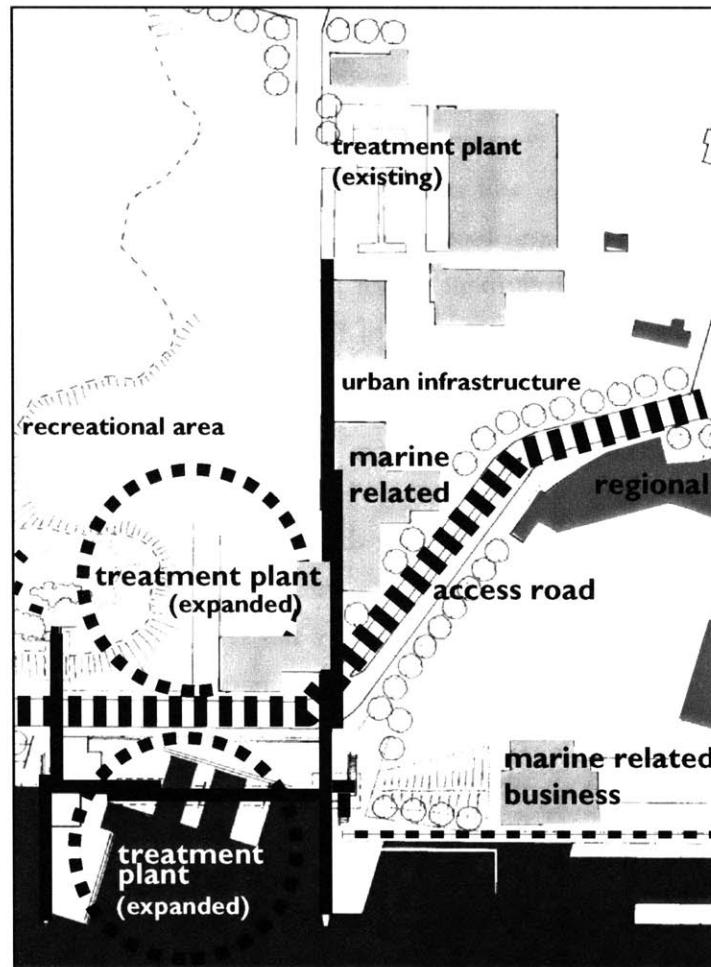


Fig. 80.2 Diagram of recycling center depicting new extension to waterfront with addition to the existing treatment plant. Here the pier structure provides an infrastructure and private access while also allowing public access to view the associated activity.

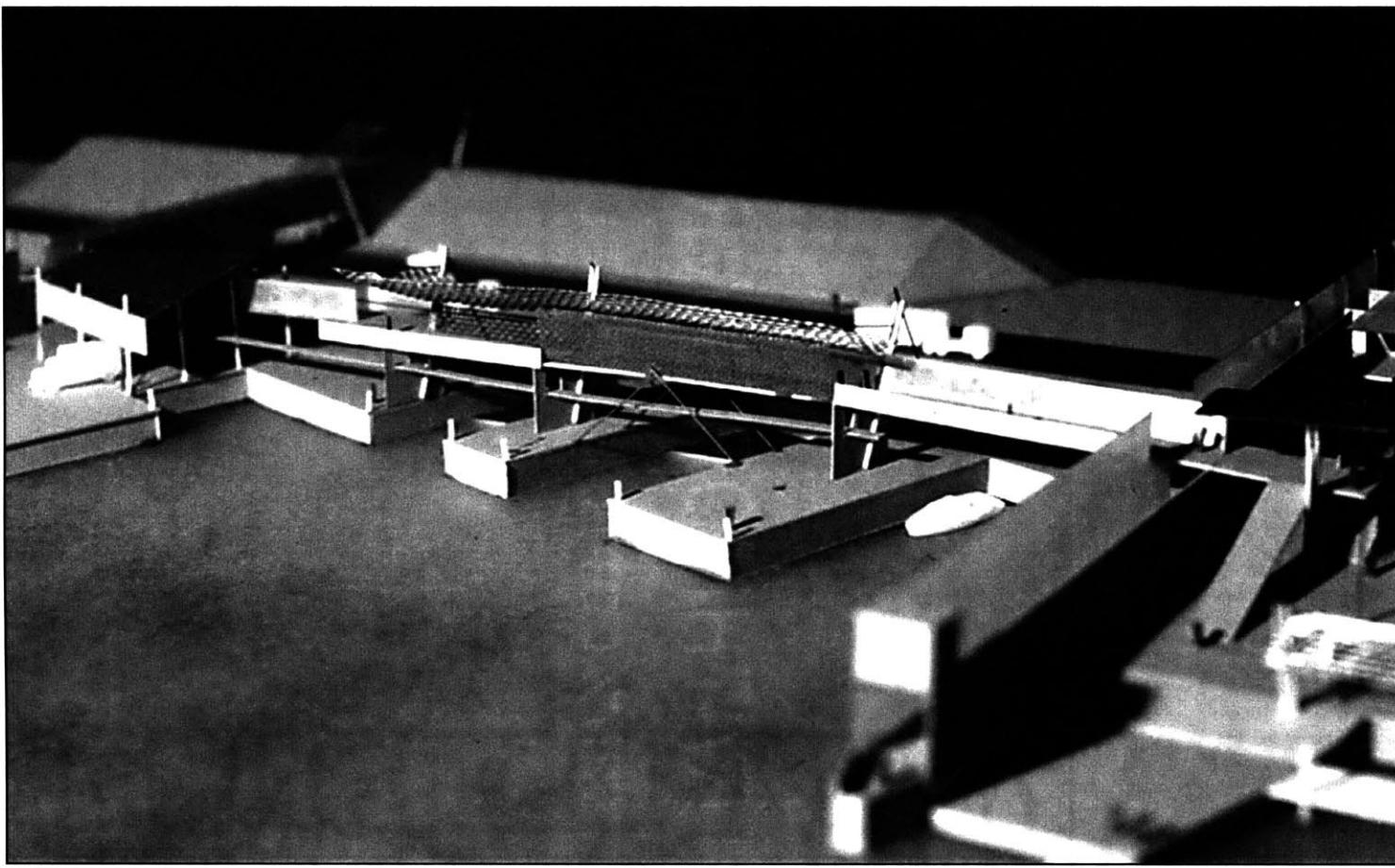


Fig. 81.1 View of recycling center at water's edge with elevated walkway above the berths. Vertical access at the pier is seen on far right of photo. The existing landfill is seen in the background, accessed by one of the pier structures that goes to a passive recreational area.

Fig. 76.2 Drawing of proposed structure framing recycling center. The public path moves from the water's edge, up into the pier; allowing access over the water and berths that are located between this and another pier farther along the path.

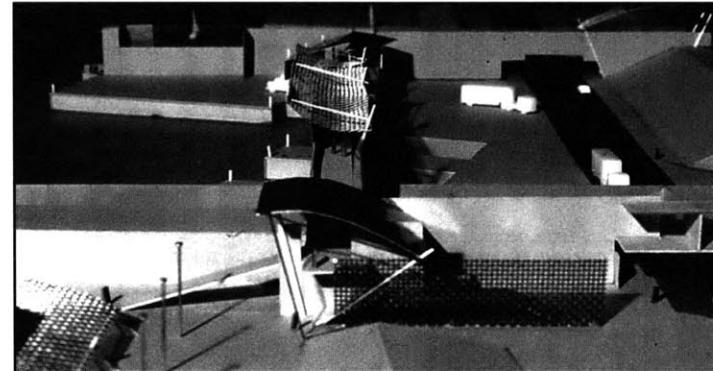
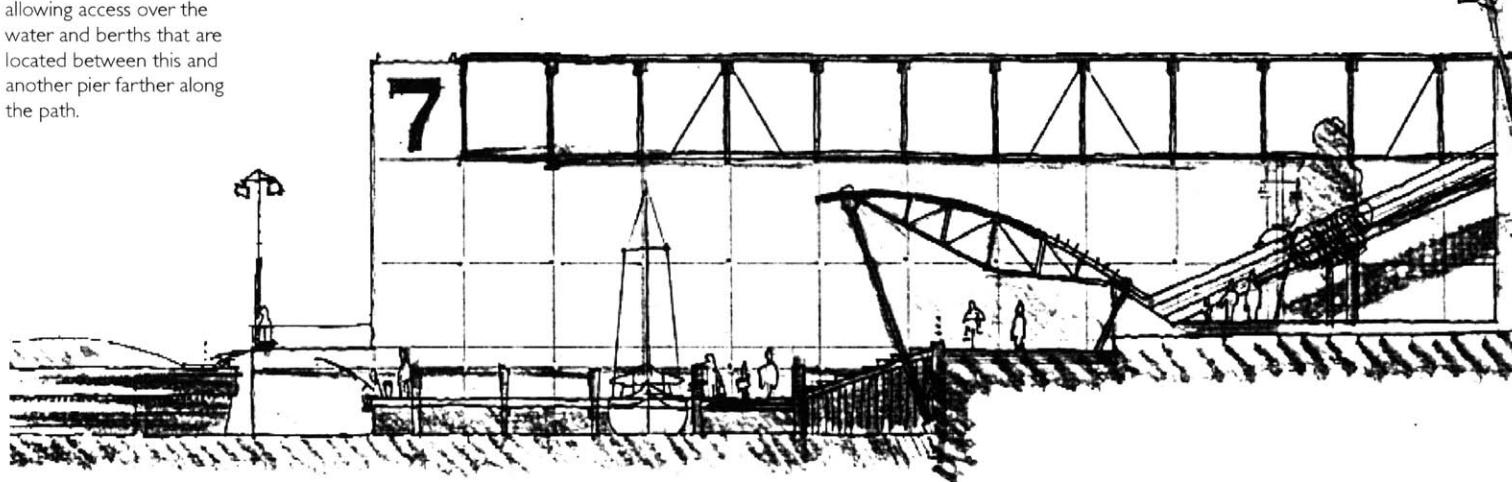


Fig. 82.1 Elevation of pier structure as seen from marina.

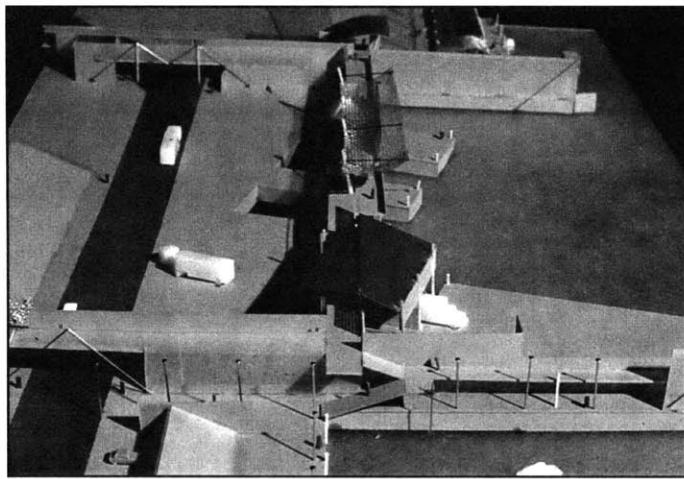
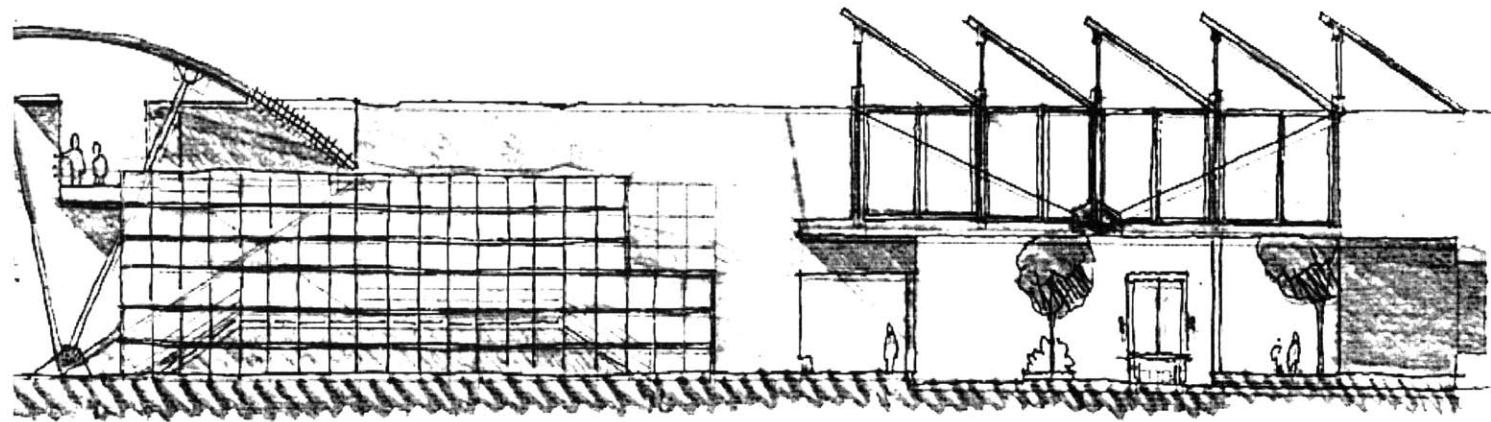


Fig. 83.1 Elevation view looking back towards marina. Public elevated path is clearly seen.



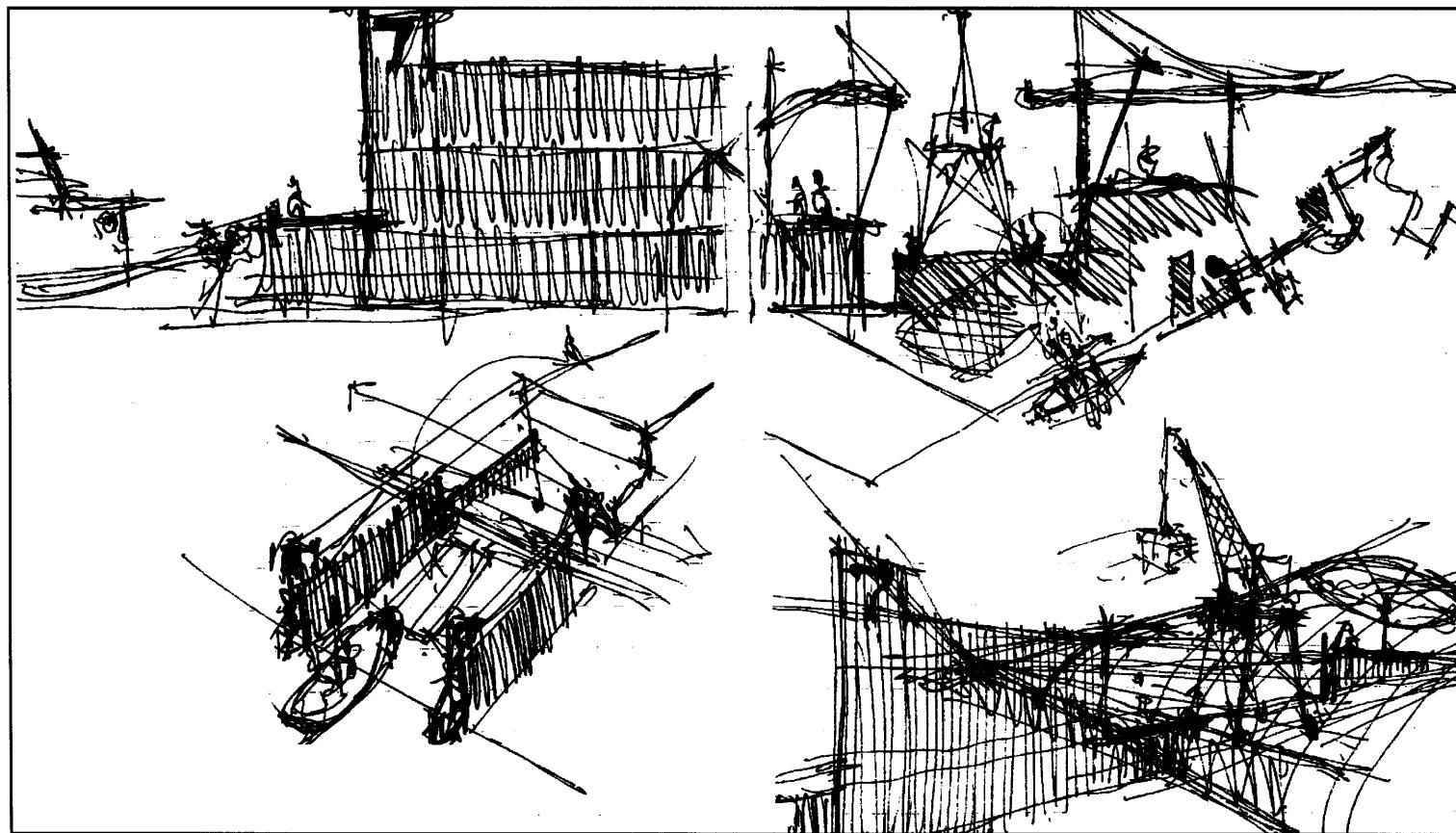


Fig. 84.1 Sketches of proposed recycle center showing concept diagram, perspective and elevation.

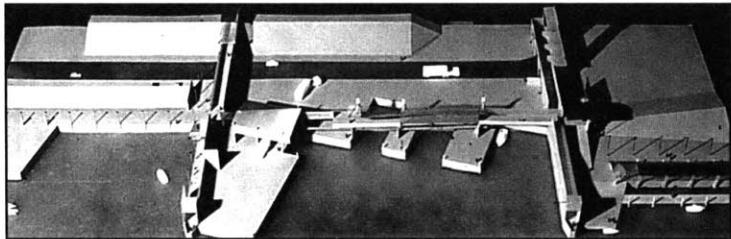


Fig. 84.1 View of recycle center from water back to the city.

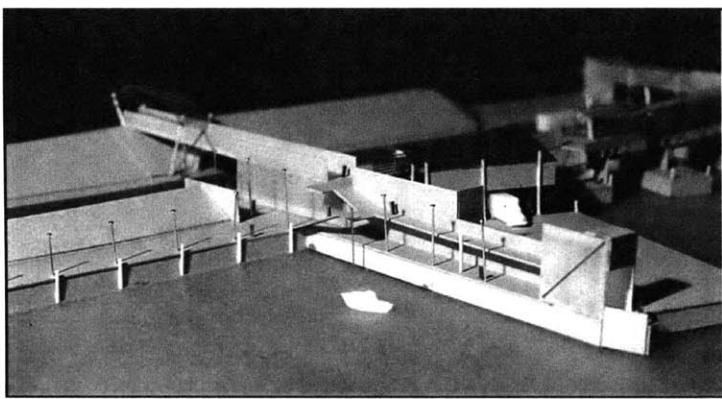


Fig. 84.2 View of pier where public access comes back down to water's edge after passing over private function. Here the pier opens up for public access at two levels.

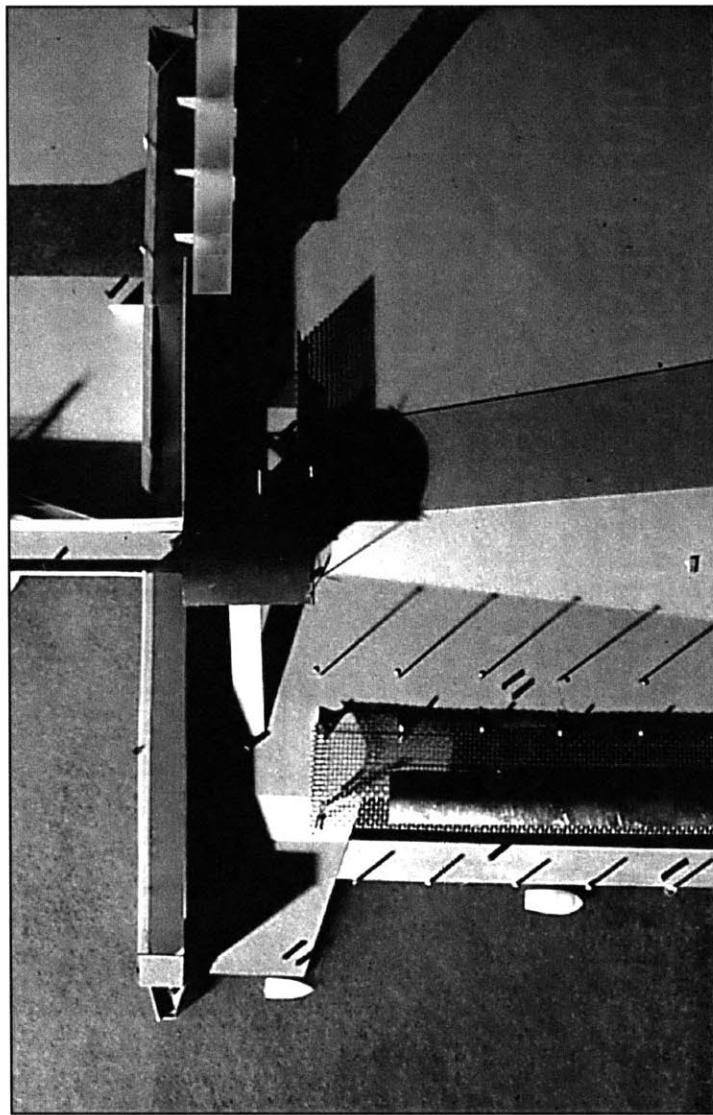


Fig. 84.3 Plan photo of pier as infrastructure, pier as vertical access, and pier as wall. The land that is cut for berths can be used to create artificial landscapes within the site.

Key map

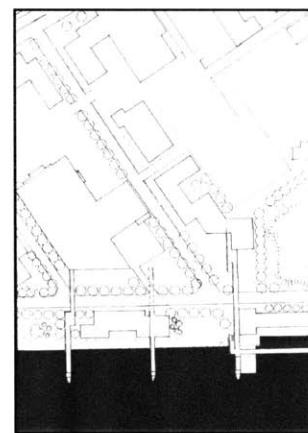


Fig. 86.1 Site plan of regional commercial area with marine uses lining the water's edge.

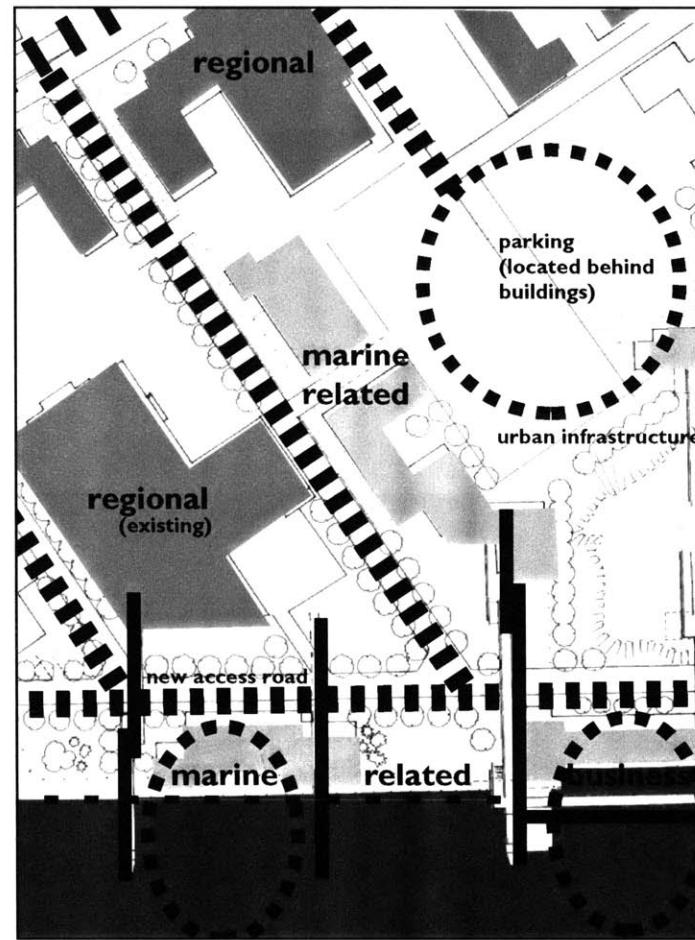


Fig. 86.2 Diagram illustrating the densification of related uses along access routes to the water. Along the edge of the bulkhead, marine related uses are introduced, using the infrastructure elements as support and access. Public access is still maintained along the water.

## REGIONAL/MARINE USES

Several large retail businesses already exist along the Lynnway, with more to be developed. Because of this, the City of Lynn had to relinquish part of the existing channel to non-use as part of doing business. The one stipulation is that any new non-marine business along the water must maintain a public access to the waterfront.

This area does not need to sacrifice its standing as a designated port facility for the sake of its economic well being. If there is an integration of access and use along the coast, in conjunction with a densification of similar uses, then it can maintain its designated port status — something almost impossible to obtain with today's stringent environmental regulations.

The structure can facilitate the coexistence of both marine and regional businesses with barrier free public access to and along the waterfront.



Fig. 87.1 Site as it currently exists.



Key map

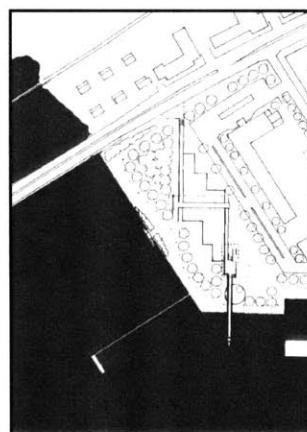


Fig. 88.1 Site plan of park and civic intervention providing connection to Revere Beach.

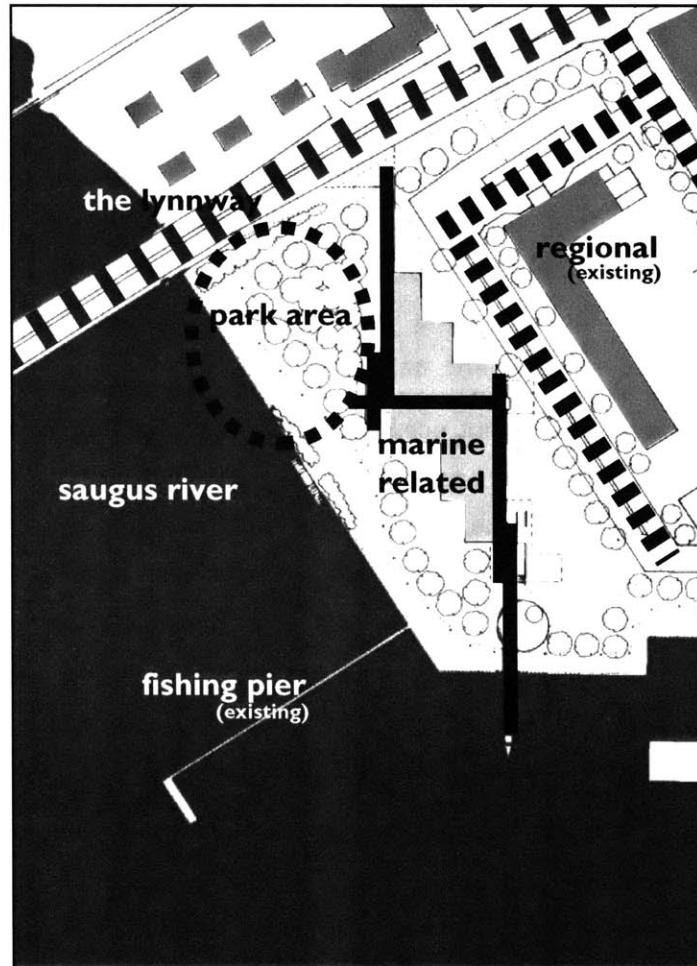


Fig. 88.2 Diagram of possible civic area for the City of Lynn, (e.g. an aquarium) that would provide a destination point at the end of the harbor walk. The public access can now be continuous from Swampscott to Revere.

## THE VISION

Approaching from Boston and Revere, the first experience of Lynn is a barrage of neon signs and parking lots. But if you look off to the right, you can catch a glimpse of Lynn Harbor and an existing fishing pier. This area of the site used to be a picnic and fishing area for the public. Now it is used for illegal dumping.

This area has a dynamic potential to be the gateway into Lynn. It can be the threshold one crosses at the bottom of the General Edwards Bridge. It can also be the beginning or terminus for an activity-filled harbor walk.

A civic building on this site would offer the Lynnway, the Harbor, and the whole city a landmark of importance, instead of the liquid natural gas tank a mile away.

The infrastructure could be the base of the social fabric vital to the inhabitants and users of the waterfront.

Fig. 89.1 A sketch of the overall site.

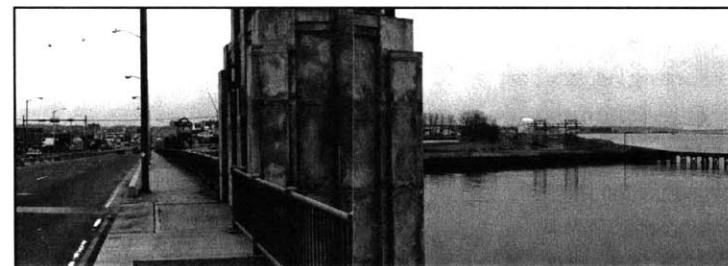


Fig. 89.2 Approaching the City of Lynn.

## CONCLUSION

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"...Urban waterfronts are in a constant state of transition. Changes in land uses, land values, economic demand, transportation modes, industrial technologies, as well as public values and desires all contribute to the evolution of the waterfront. The challenge is not how to prevent or enforce change but how to manage it in a manner which makes best use of both natural and man-made waterfront resources to accommodate the diverse and evolving needs of the community..."

...Further, no one land use is adequate for the entire waterfront. A balanced land use package incorporating industry, port facilities, recreation, commercial, and residential uses can best take advantage of the diverse characteristics of the waterfront..."

New England River Basins Commission, Urban Waters Special Study, Skidmore Owings and Merrill, January 1975,

Today's cities tend to abuse the natural resources given to them by uses that are inconsistent or short sighted. It is these same resources that dictated the existence of the city.

A city will start to develop an identity according to its location and use of its surroundings. The environment that the city begins to inhabit becomes a man-made one, influenced by the activity and life happening within the social realm. The characteristics become more embodied in day to day activities, providing the collective memory that the inhabitants of the city can associate themselves with. It provides an identity to the city as well as the city's users.

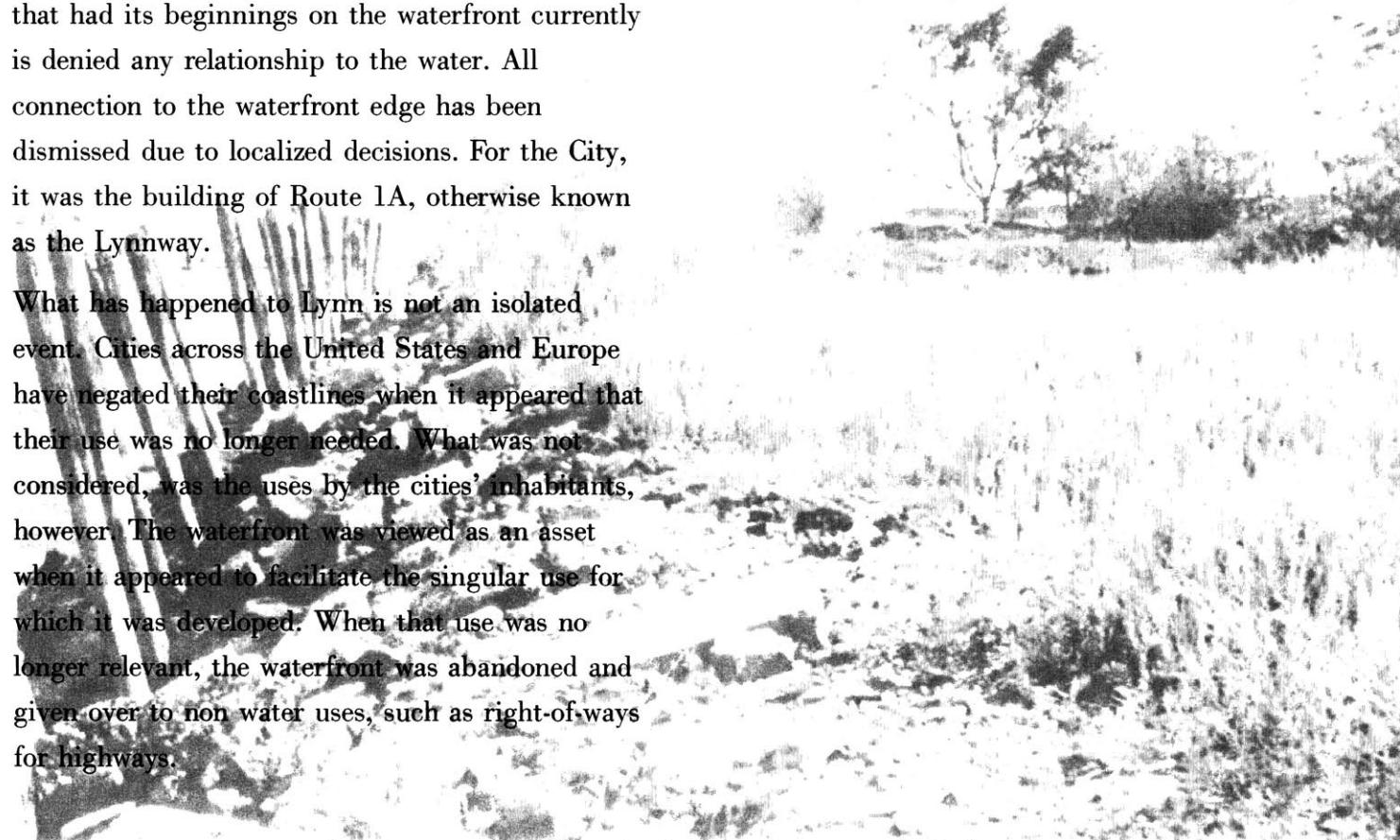
Experiences become imbedded in the culture of a city, giving an image to the city that is recognized in every aspect, from culture to social behavior, to the architectural form of the city. A city in the mountains reflects its topography in the manner in which it is built. A city by the water will be built according to different criteria. Both cities will retain the characteristic that is most prevalent in its built form.

But if a city loses sight of its inherent image, the theme of the city is lost. It will begin to internalize and grow only through localized conditions. The bigger scheme or collective memory is not applied in the decisions. The city as an identifiable image ceases to be.

The city of Lynn has reached this point. A city that had its beginnings on the waterfront currently is denied any relationship to the water. All connection to the waterfront edge has been dismissed due to localized decisions. For the City, it was the building of Route 1A, otherwise known as the Lynnway.

What has happened to Lynn is not an isolated event. Cities across the United States and Europe have negated their coastlines when it appeared that their use was no longer needed. What was not considered, was the uses by the cities' inhabitants, however. The waterfront was viewed as an asset when it appeared to facilitate the singular use for which it was developed. When that use was no longer relevant, the waterfront was abandoned and given over to non water uses, such as right-of-ways for highways.

Fig. 91.1 A neglected pierhead across from Lynn's Heritage State Park



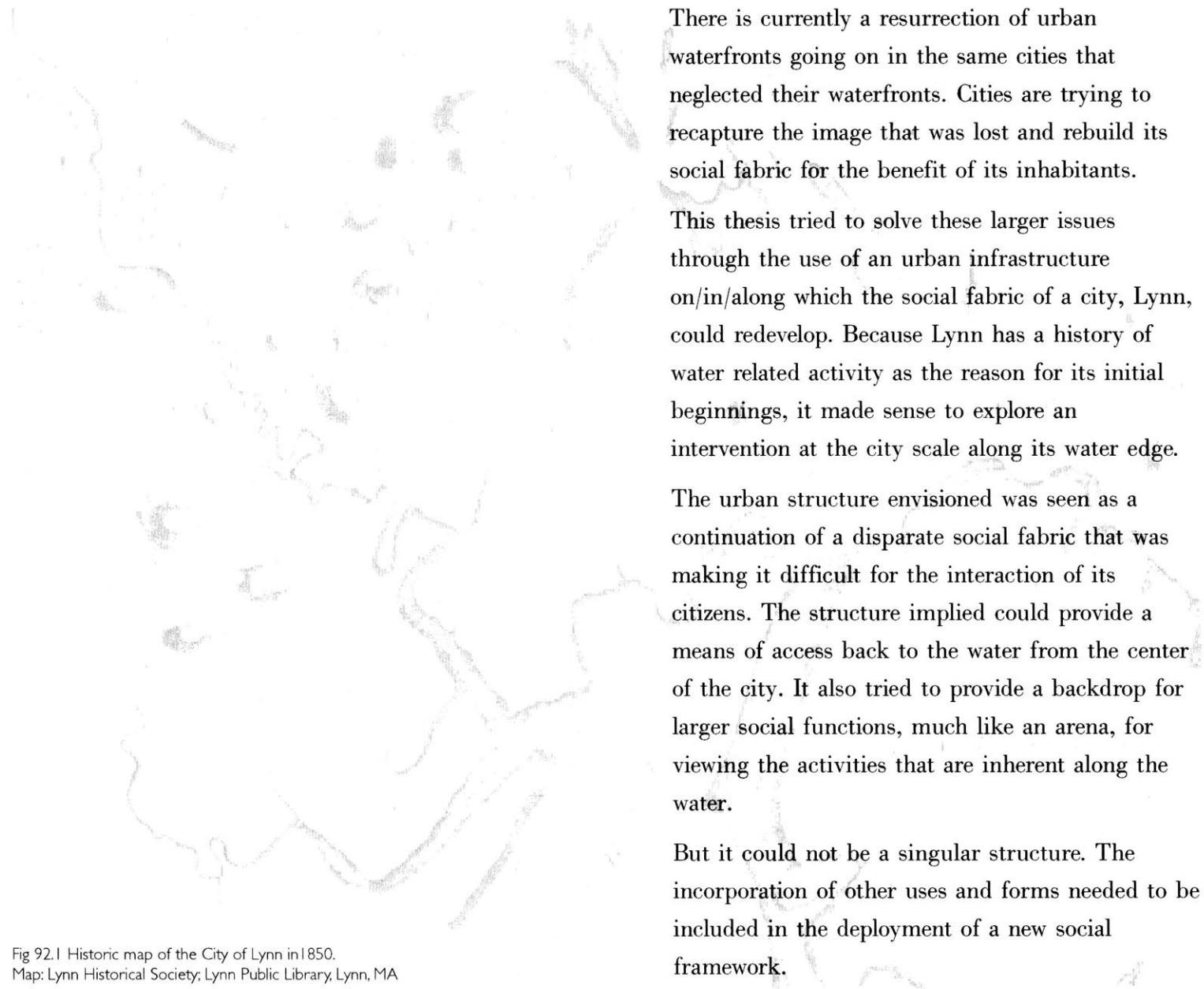


Fig 92.1 Historic map of the City of Lynn in 1850.  
Map: Lynn Historical Society; Lynn Public Library, Lynn, MA

There is currently a resurrection of urban waterfronts going on in the same cities that neglected their waterfronts. Cities are trying to recapture the image that was lost and rebuild its social fabric for the benefit of its inhabitants.

This thesis tried to solve these larger issues through the use of an urban infrastructure on/in/along which the social fabric of a city, Lynn, could redevelop. Because Lynn has a history of water related activity as the reason for its initial beginnings, it made sense to explore an intervention at the city scale along its water edge.

The urban structure envisioned was seen as a continuation of a disparate social fabric that was making it difficult for the interaction of its citizens. The structure implied could provide a means of access back to the water from the center of the city. It also tried to provide a backdrop for larger social functions, much like an arena, for viewing the activities that are inherent along the water.

But it could not be a singular structure. The incorporation of other uses and forms needed to be included in the deployment of a new social framework.

It is difficult to determine, then, what form the structure should take, particularly when there are no historical references left within the city, and any arbitrary form would be dismissed as non visionary. The lack of a cohesive image would also undermine the success of such a large scale intervention. And perhaps it is not even something that is built. It could be something as simple as instilling the will and determination of the city's people, to recognize the potential of the waterfront through an understanding of the importance of such an asset. Simpler ways could prevail in reclaiming the edge.

Maybe it is in the social realm that the city is celebrated, and not the built form, which can only facilitate the celebration. It is too much to ask of architecture to generate a new urban lifestyle, particularly when the image is based on the past.

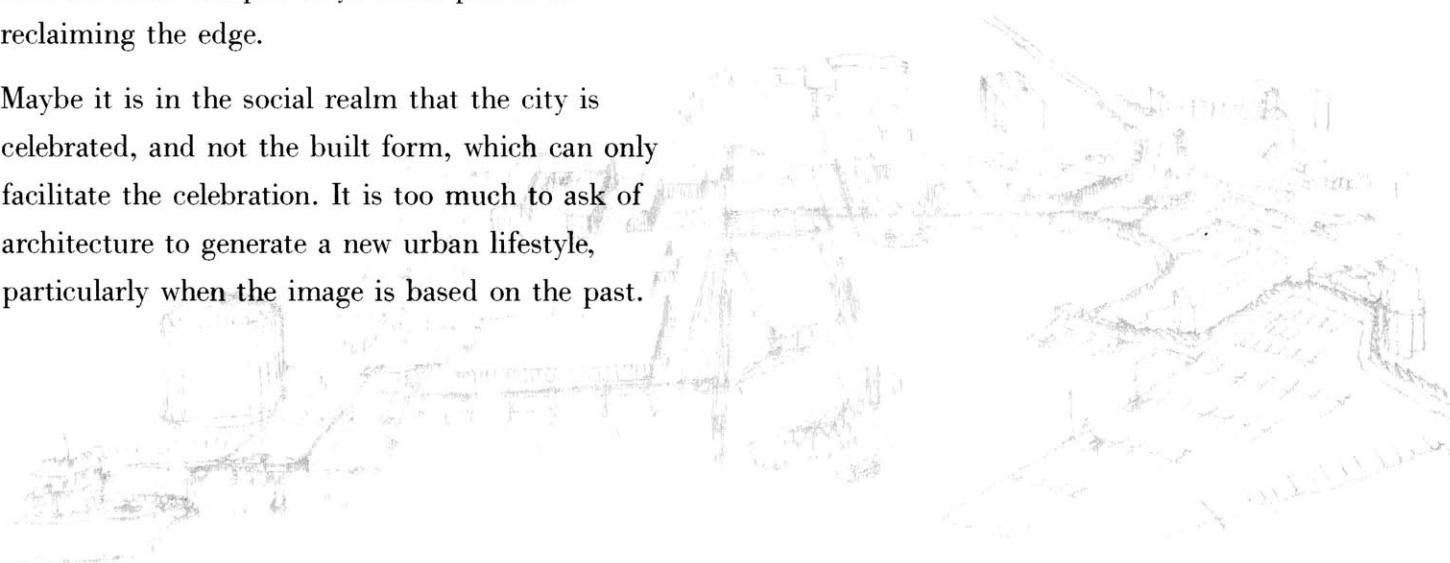


Fig 93.I Sketch of marina and park extension.

## MAINTAINING DESIGNATED PORT STATUS

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Fig. 94.I Boat storage facility on Long Island.

The changing urban waterfront is threatening the survival of the traditional maritime enterprises in many of our coastal cities. Lynn itself has almost no marine related businesses currently along its harbor channel. Examples in Seattle, where the last accessible pier for fishing boats to moor while their owners performed repairs on them has become a recreational marina; and several businesses doing marine as well as non-marine repair work have been replaced by a restaurant/office/retail complex.

Small-boat building and repair yards in the Mainship district of Sausalito, California, are threatened by gentrification of the surrounding area; tugboats in Jersey City and lobster boats in Boston Harbor are being displaced; in Portland, Maine, the city struggles to maintain the fishing fleet and seafood processors on its downtown waterfront. Unfortunately, municipal policy makers are under great pressure to lift restrictions and allow non-water dependent uses as a way to generate any interest or development along the waterfront.

The City of Lynn made similar concessions to attract a large retail outlet that the city believes will attract other businesses and jobs to the area. This was done at the expense of waterfront development land along the channel. The only stipulation imposed on the retailer was that unrestricted public access to the waterfront had to be maintained. What the public does when they get there though is another problem; few, if any amenities are to be provided to enjoy the water.

Waterfront developers and property owners in these cities claim, with some justification, that the demand for land for water-dependent use does not exist, and they are left with no reasonable use of their property. Therefore, if concessions were made or developed to allow for either the cyclical use or changing uses in the future, perhaps the land adjacent to the water would not have to commit to a singular use. Thus if support infrastructures were introduced that could adapt, then perhaps as demand and requirements change for a certain use, a new business could be implemented or plugged in, without the disturbance of the existing infrastructure, public land uses, and access rights of way.

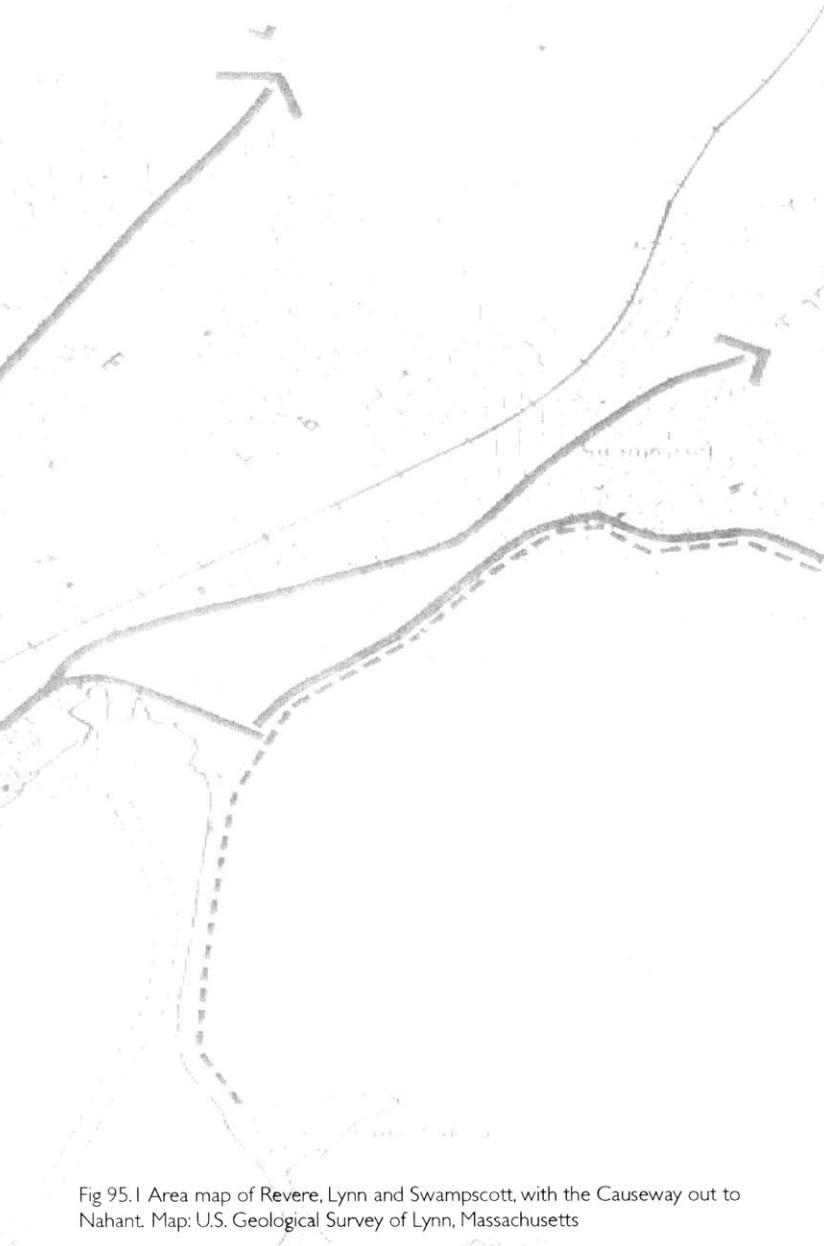


Fig 95.1 Area map of Revere, Lynn and Swampscott, with the Causeway out to Nahant. Map: U.S. Geological Survey of Lynn, Massachusetts

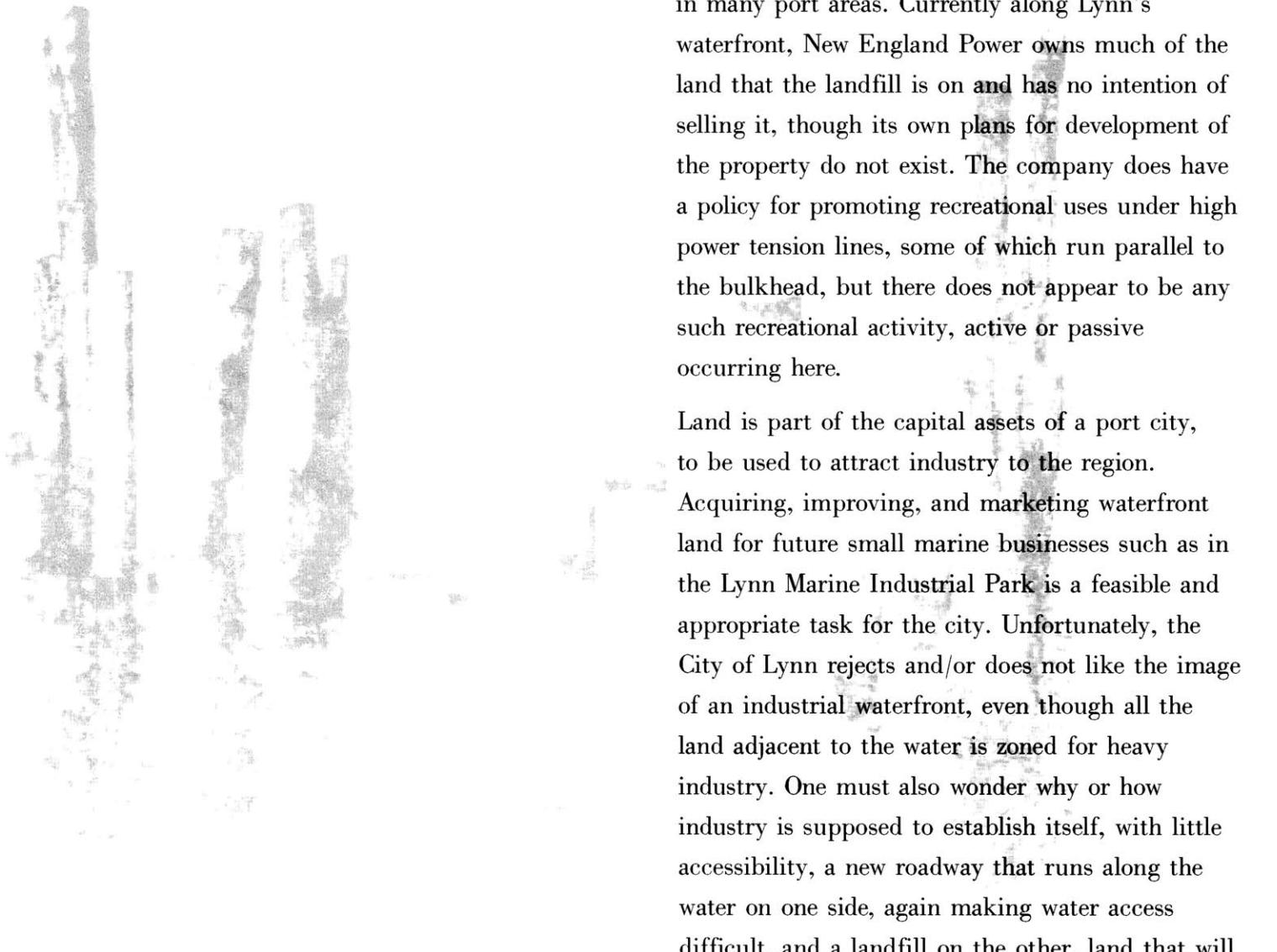


Fig 96.1 Piers in Saugus River.

Reserving land for future use is common practice in many port areas. Currently along Lynn's waterfront, New England Power owns much of the land that the landfill is on and has no intention of selling it, though its own plans for development of the property do not exist. The company does have a policy for promoting recreational uses under high power tension lines, some of which run parallel to the bulkhead, but there does not appear to be any such recreational activity, active or passive occurring here.

Land is part of the capital assets of a port city, to be used to attract industry to the region. Acquiring, improving, and marketing waterfront land for future small marine businesses such as in the Lynn Marine Industrial Park is a feasible and appropriate task for the city. Unfortunately, the City of Lynn rejects and/or does not like the image of an industrial waterfront, even though all the land adjacent to the water is zoned for heavy industry. One must also wonder why or how industry is supposed to establish itself, with little accessibility, a new roadway that runs along the water on one side, again making water access difficult, and a landfill on the other, land that will

never stabilize to support a structure, but might be suited to recreational activity only after a seven year allowance for settling.

Marine businesses are a natural constituency of the public port. Their linkages to traditional port functions: fishports, recreational small craft harbors, and generally related activities; enmesh small marine businesses within the long-standing, traditional port community. By reassembling many small parcels into a few larger ones and densifying the related businesses, the port could realize development of a scale that would be difficult to achieve on private, multiple-ownership lands. This idea would be vital to Lynn's waterfront if it is to be viewed as a cohesive whole attribute for the city, particularly, if public access is to be warranted along the entire length of the waterfront.

## RECENT THOUGHTS ON WATERFRONT DEVELOPMENT

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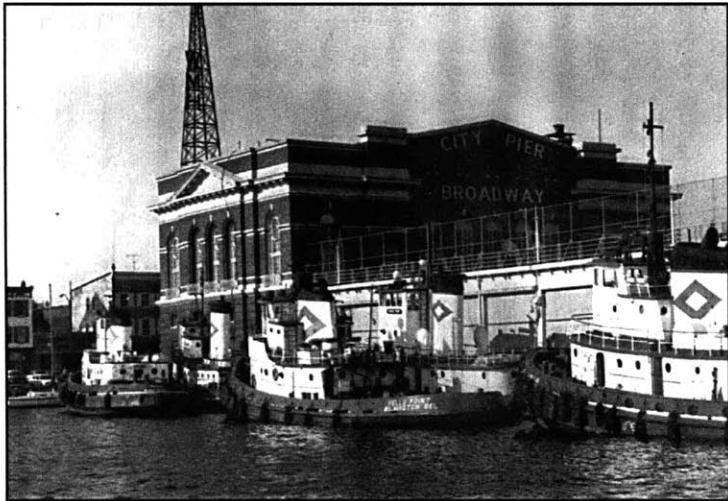


Fig 98.1 Baltimore's inner harbor. Photo: Inner Harbor Mgmt.,  
**The Baltimore Harbor**

Cities should not attempt to achieve every “good” coastal management goal at all sites. It may be unwise to force physical public access into every industrial shoreline. Similarly, attempts to adhere to strict water-dependency criteria for uses in restored pier sheds may result in vacancies and poor maintenance and overdevelopment of public access and viewpoints could create underused public improvements that are expensive to maintain. Each coastal management goal should be linked to specific site conditions in the framework of a harborside development strategy.

Conversion of obsolete facilities to house tourists and visitor-serving activities is an appropriate way to achieve revitalization, support economic development goals, and improve environmental quality of the waterfronts. But the zone in which intensive redevelopment occurs should be limited to inactive, deteriorated structures and not be allowed to spread into nearby working waterfronts. Nor should spillover effects — traffic and on-street parking congestion, for example — be permitted to disrupt efficient truck access to marine

businesses (the infrastructure could support direct access and right of ways for businesses while supporting public access on or above, and create specific areas for zoned uses and parking.).

Ports can insist that planning for future harbor developments proceed from navigable waters inland, rather than from the CBD waterward. And even where their landholdings include vacant downtown waterfront sites, Ports can still champion and help implement the goal of bringing back authentic maritime activity to the place where many cities were born: the water's edge.

As the nation's coasts become more crowded and the functioning of main and freshwater ecosystems better understood, there will be greater scrutiny of development projects that might harm shoreline resources, development of marinas in pristine or sensitive environments will virtually be prohibited. wetlands and intertidal areas especially will be declared off-limits to development except where no feasible alternative site exists.

Conversely, within existing urban harbors where the shorelines have been modified already by bulkheading and filling, there will be many opportunities to site recreational boating facilities

with minimal adverse environmental consequences.

The national trend to redevelop decayed urban waterfronts offers new opportunities for development of recreational boating facilities.

Where industrial marine activities have relocated to new sites away from central city waterfronts, marinas and associated boater services are being seen as appropriate water-dependent uses to take their place. Even where backup land for parking is in short supply, marinas for transient pleasure craft can be accommodated in central urban waterfronts where they add color and vitality to formerly depressed areas. In port cities where main cargo activity has diminished, pleasure craft facilities may be one of the few water-dependent uses capable of profitable operations on former port industrial waterfronts.\*

\* Robert F. Goodwin, Urban Ports and Harbor Management

Since the mid-1970's waterfront cities large and small have invested heavily in the revitalization of their urban waterfronts. Abandoned wharves, docks, and piers have been transformed into attractive destinations for tourists and local residents alike. Gone are the sounds of riveting from shipyards the smell of fish being baled out of fishing boats, the sight of longshoremen crowding the entrance to the union hall. in their place are the sounds of cash registers, the smells of ethnic food markets, and the sight of tourists lining up for ice cream cones and harbor tours. The old harborfront has disappeared, and an extension of the central business district's (CBD) retail and entertainment functions has begun to occupy its former site. On the long-vacant industrial shorelines of New York's Manhattan island, Baltimore's Inner Harbor and Chelsea's naval yard, new developments that return life to the waterfront are tinged only by nostalgia for what has long been lost. But in some cities pockets of surviving maritime industry are succumbing to the "success of revitalization."

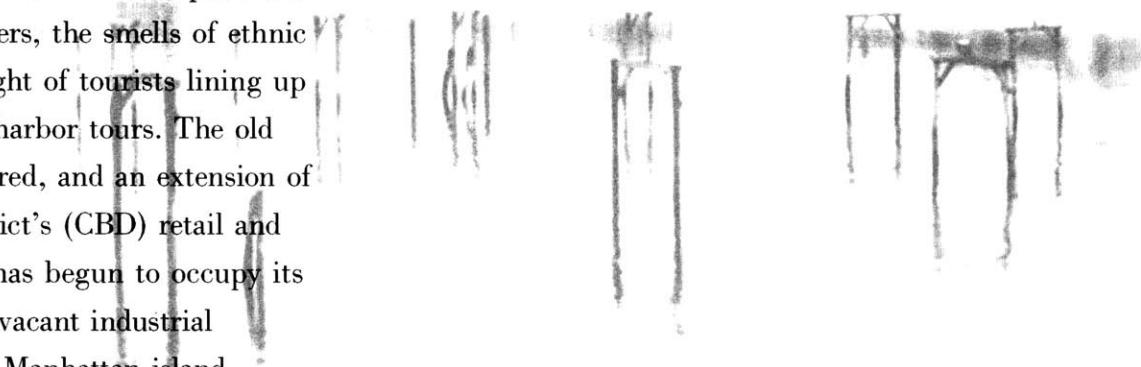


Fig. 101.1 Existing marina structure on Saugus River.

Central to this assessment is the need to choose between two views of the urban waterfront as a resource. The first holds that the waterfront is an extension of the central business district, its activities, and amenities; the second views the waterfront as a unique district where activities and amenities derive from the contiguity to navigable water. But during the 1950's and early 1960's, public works activities dealt another series of blows to the discarded working waterfronts. Urban renewal schemes razed blocks of dilapidated, but in retrospect historically significant, buildings, and urban highway constriction plowed a path of least resistance along the waterfronts of Boston, New York, San Francisco, Seattle, and many other port cities. The waterfront, in addition to being abandoned, was now walled off from the core of the CBD by vacant land, elevated highways and disused railroad rights-of-way. The old working waterfront had become a ghost area — a deserted, inaccessible, depressing reminder of better days.

Enter the 1960's: the decade of activism, inner city revolt, and neighborhood organization. Urban renewal was declared a dismal failure and new urban freeway projects were killed by articulate,

well-organized neighborhood and civic leaders. historic conservation, “adaptive reuse,” and attention to the needs of the pedestrian and inner city residents overrode the interests of the suburban community. Given national focus by ladybird Johnson and fueled by federal largess, trees were planted, sidewalks widened, new mass transit schemes were funded, and grants for historic preservation stemmed the loss of noteworthy urban landmarks. Inevitably, attention and residential developments, and city beautification programs transformed the old commercial districts adjacent to the waterfront into bustling new extensions of the central business district. The waterfront’s low land values and adaptable structures become a magnet for public and private development capital. Boston’s historic wharves close to the Faneuil Hall redevelopment area were converted to condominiums; revitalization of San Francisco’s Ghirardelli Square and Embarcadero district propelled the conversion of Fisherman’s wharf into a tourist attraction; and planning for Baltimore’s Inner harbor got underway.<sup>†</sup>

<sup>†</sup> Robert F. Goodwin, **Waterfront Revitalization: Ways to Retain Maritime Industries, from Urban Ports and Harbor Management**



# Appendices

**Bibliography**

**Credits**

**Acknowledgments**

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## C R E D I T S

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*All illustrations and photographs are by  
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**F i g . 1 4 . 2** Brasilia, Brazil. Short, The Humane City

**F i g . 1 7 . 1** Photo: Seattle Engineering Dep't,  
Seattle's Waterfront

**F i g . 1 7 . 2** Photo: B.R.A. Archives, The Boston Society of Architects, Architecture Boston

**F i g . 1 7 . 3** Photo: James Douglas,  
Architecture Boston

**F i g . 1 9 . 1** Aldo Rossi,  
The Architecture of the City

**F i g . 1 9 . 2** Daniel Burnham, 1909,  
The Architecture of the City

**F i g . 1 9 . 3** Harper's Weekly,  
Manhattan Water Bound

**F i g . 2 0 . 1** Photo by L. Azeo Torre,  
Waterfront Development

**F i g . 2 5 . 2**

Maryland Port Administration,  
The Baltimore Harbor

**Fig. 26.1** Photo: L. Azeo Torre,  
Waterfront Development

**Fig. 28.1**

Photo: Maryland Port Administration,  
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Architecture Boston

**Fig. 30.1** Boston Redevelopment Authority,  
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**Fig 31.1** Photo: Port of Seattle,  
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**Fig 31.1** Photo: Port of Seattle,  
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**Fig 34.1** Photo: Inner Harbor Mgtmt.,  
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**Fig 34.2** Photo: Inner Harbor Mgtmt.,  
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**Fig. 38.1** Map: U.S. Geological Survey of Lynn,  
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**Fig. 54.1** Map: Lynn Historical Society; Lynn  
Public Library, Lynn, MA

**Fig. 55.1** Map: Lynn Historical Society; Lynn  
Public Library, Lynn, MA

**Fig. 56.1** Map: Lynn Engineering Department,  
Lynn City Hall, Lynn, MA

**Fig. 92.1** Map: Lynn Historical Society; Lynn  
Public Library, Lynn, MA

**Fig. 98.1** Photo: Inner Harbor Mgtmt.,  
The Baltimore Harbor

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