THE NATURE OF A SITE:

URBAN AND ARCHITECTURAL DESIGN PERSPECTIVES

ON THE RENOVATION OF REVERE BEACH, MASSACHUSETTS
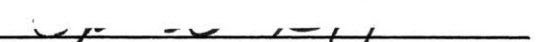
by

Jane Sarah Katz

Bachelor of Arts
University of Michigan
Ann Arbor, Michigan
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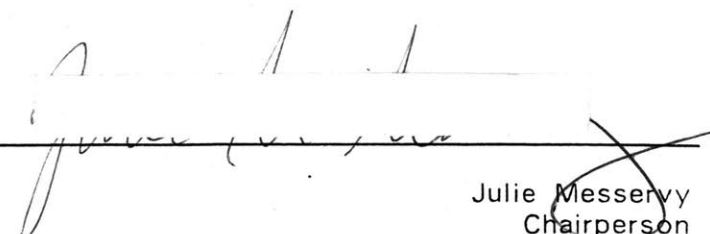June, 1985

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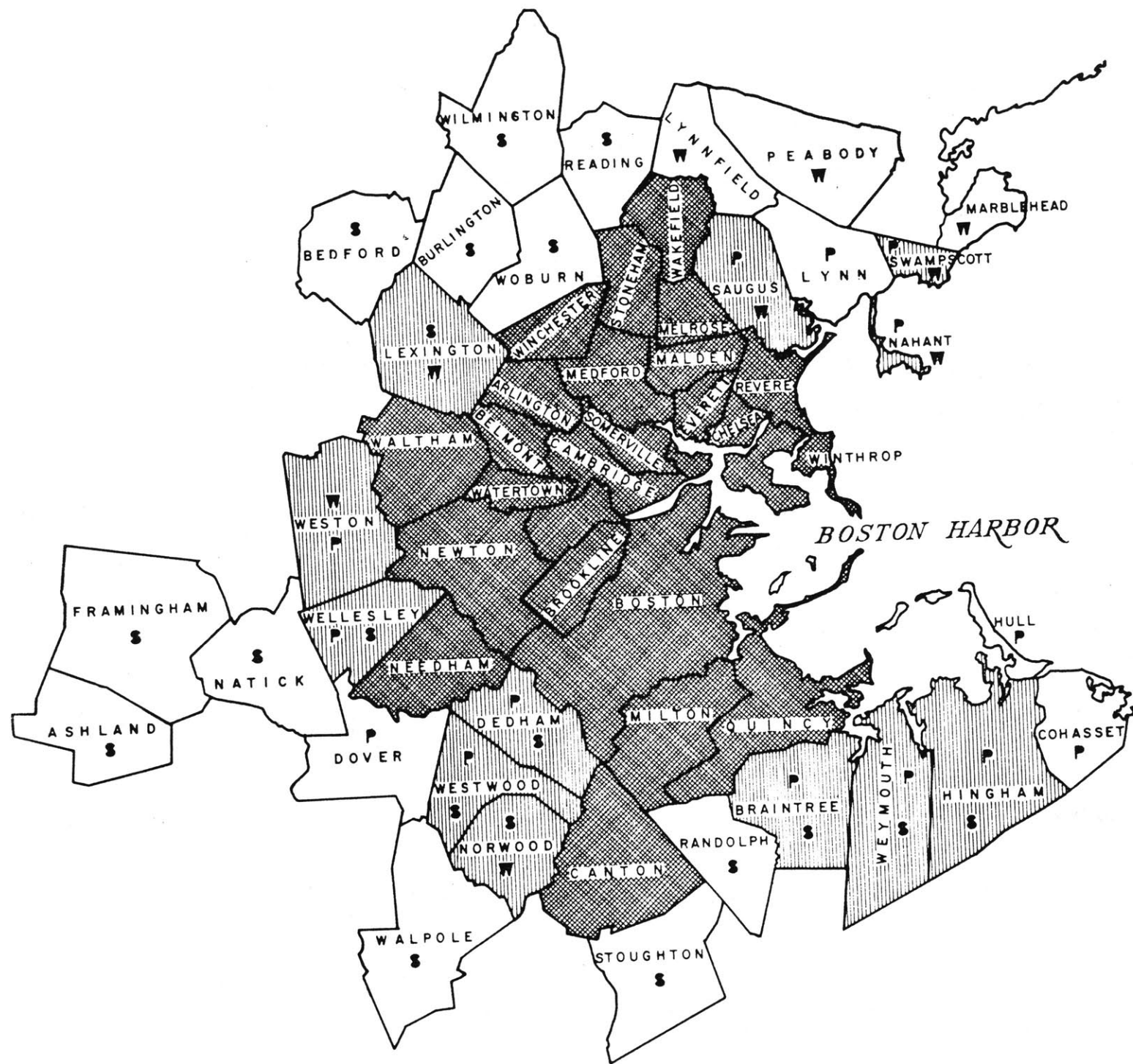May 8, 1985

Certified by_____

John Randolph Myer
Professor of Architecture
Head of the Department
Thesis Supervisor

Accepted by_____

Julie Messervy
Chairperson
Departmental Committee on Graduate Students

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BOSTON HARBOR

WILMINGTON • READING • LYNNFIELD • PEABODY • MARBLEHEAD • BEDFORD • BURLINGTON • WOBURN • WAKEFIELD • STONEHAM • SAUGUS • LYNN • SWAMPSCOTT • LEXINGTON • WINCHESTER • MELROSE • MALDEN • NAHANT • MEDFORD • REVERE • ARLINGTON • SOMERVILLE • EVERETT • CHELSEA • BELMONT • CAMBRIDGE • WINTHROP • WALTHAM • WATERTOWN • WESTON • NEWTON • BROOKLINE • BOSTON • FRAMINGHAM • WELLESLEY • NEEDHAM • NATICK • HULL • MILTON • QUINCY • COHASSET • ASHLAND • DEDHAM • DOVER • WESTWOOD • BRAINTREE • WEYMOUTH • HINGHAM • NORWOOD • RANDOLPH • WALPOLE • CANTON • STOUGHTON

CONTENTS

The Nature of a Site: Urban and Architectural Design Perspectives on the Renovation of Revere Beach, Massachusetts

by Jane Sarah Katz

Abstract

Through analyses and design studies, this thesis articulates qualities of environment and architecture that affect the redevelopment of an urban beach. Looking at Boston, Massachusetts' Revere Beach, it examines the impact of shape, location, and environmental, social and economic background on the form and program of future building along the beach edge.
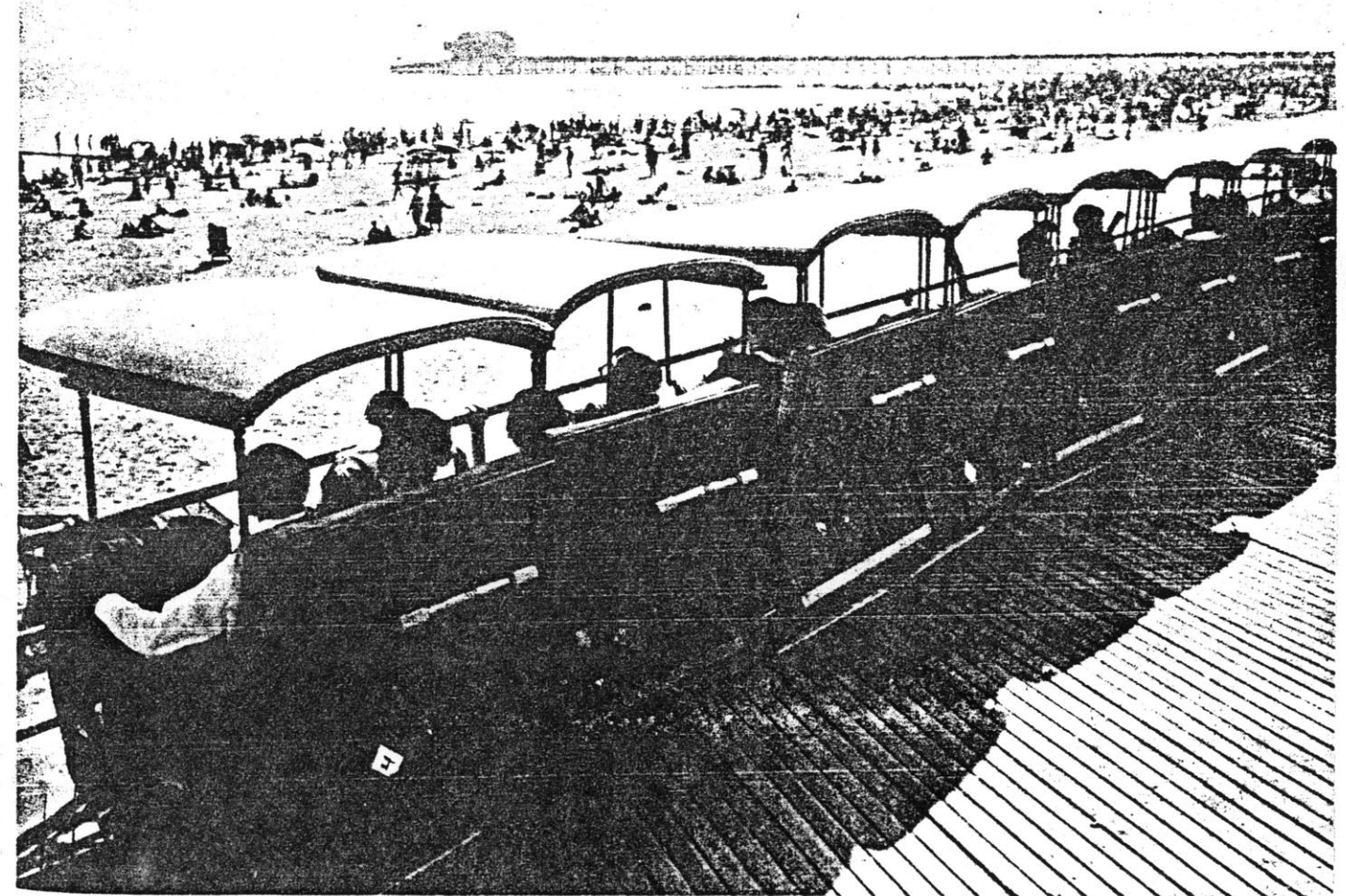
The thesis draws together two issues, use and form, in looking at large issues of any redevelopment: distinguishing valid public claims from private, residential from commercial, local from regional, pedestrian from automobile and mass transit, wealthy from poor. It raises questions about the nature of recreation and work, in association with other civic roles for the beach. The study analyzes physical form from the perspective of various combinations of use and vice versa: programs from the standpoint of form.

The work discusses architecture and urban design in terms that consider the new development's role in orienting people within their environment; it tries to define what that means specifically at Revere. From regional to local to building to material dimension, the paper questions what suggests qualities of "beach-ness", particularly of a Revere Beach sort.

Finally, preliminary sketches and notes for a sea edge design include provisions for both public and private uses, with a character that expresses the beach's seasonal nature as well as providing protection and comfort throughout the year. The design proposal differentiates between various program elements, and seeks their appropriate placement within a new development. Public services include bathhouses, information centers, parking systems, and a pedestrian framework of promenades, amphitheaters, courtyards, and access ways. The commercial activity, public to some extent, includes theatres, restaurants, health clinics, schools and athletic facilities, as well as sunning, swimming, souvenir-related shops.

Questions of ownership and managment are briefly addressed. The project also examines possibilities for including in the design floating sewage treatment facilities and land-based wind generators, as ways to correlate recreational facilities with a public understanding of the urban infrastructure.

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Acknowledgements

INTRODUCTION

Revere Beach is a once-active, now barren strip of Atlantic Ocean frontage five miles north of the Boston city line. Until recently, the area was occupied by amusement parks, but time, urban decay and urban renewal have taken its toll on them. The site today consists only of their remains: beachside boulevards and train tracks amidst seas of parking lots and a few run-down fast food joints and bars.

Revere's sandy beach forms a crescent which stretches three miles along the Atlantic's Broad Sound. It offers the only pollution-free swimming waters to be found within a radius fifteen minutes of downtown Boston. Its proximity to Boston, ease of access by private transportation, and role as the only swimming beach on the city's mass transit line make Revere a regional asset, as well as a prime development site. As such, it potentially serves a clientele that is extremely diverse, geographically, socio-economically, and in age.

This paper was written as part of a curriculum for a Master in Architecture degree and records the odyssey of an independent and experimental design process. The method was unlike others I had used in academic settings, though the lack of actual constraints in scholastic design projects easily could have allowed a free range of exploration. It was unusual because the project began with no program; instead, it started with a specific place for which alternative uses, forms, and their interrelationship were to be designed.

In professional work, design firms are sometimes asked to suggest uses for a site in addition to later designing its form. While marketing studies usually are sponsored by a single interest and follow a standard format, studies of the physical and social role of an area by a disinterested body are less constrained and can be very valuable. Rather than examining a set timespan and a limited selection of variables, more of life's concerns - physical, social, and spiritual - can be considered. An architectural design and planning perspective may appear to point toward different images than a marketing study, but because they are both interpreting the same environment, they should eventually concur.

Revere was an ideal site for this sort of exploration; although currently almost a blank slate, it had a strong natural character, a rich history, and an obvious focus for diverse interests. Relationships between landscape and development could be dramatized at Revere, in formal, ecological, and psycho-social ways. It also was a prime situation for exploring how an architectural work, a designed environment, can reflect its time, geography, culture, season and economy in its form and materials. A single building, or even a few new structures could not solve Revere's problems or allow it to reach its potential. The answer lies in an environmental design, for Revere Beach needs a new, large scale identity.

MASSACHUSETTS BAY

Scale
1:432,000 1" = 6.8 miles
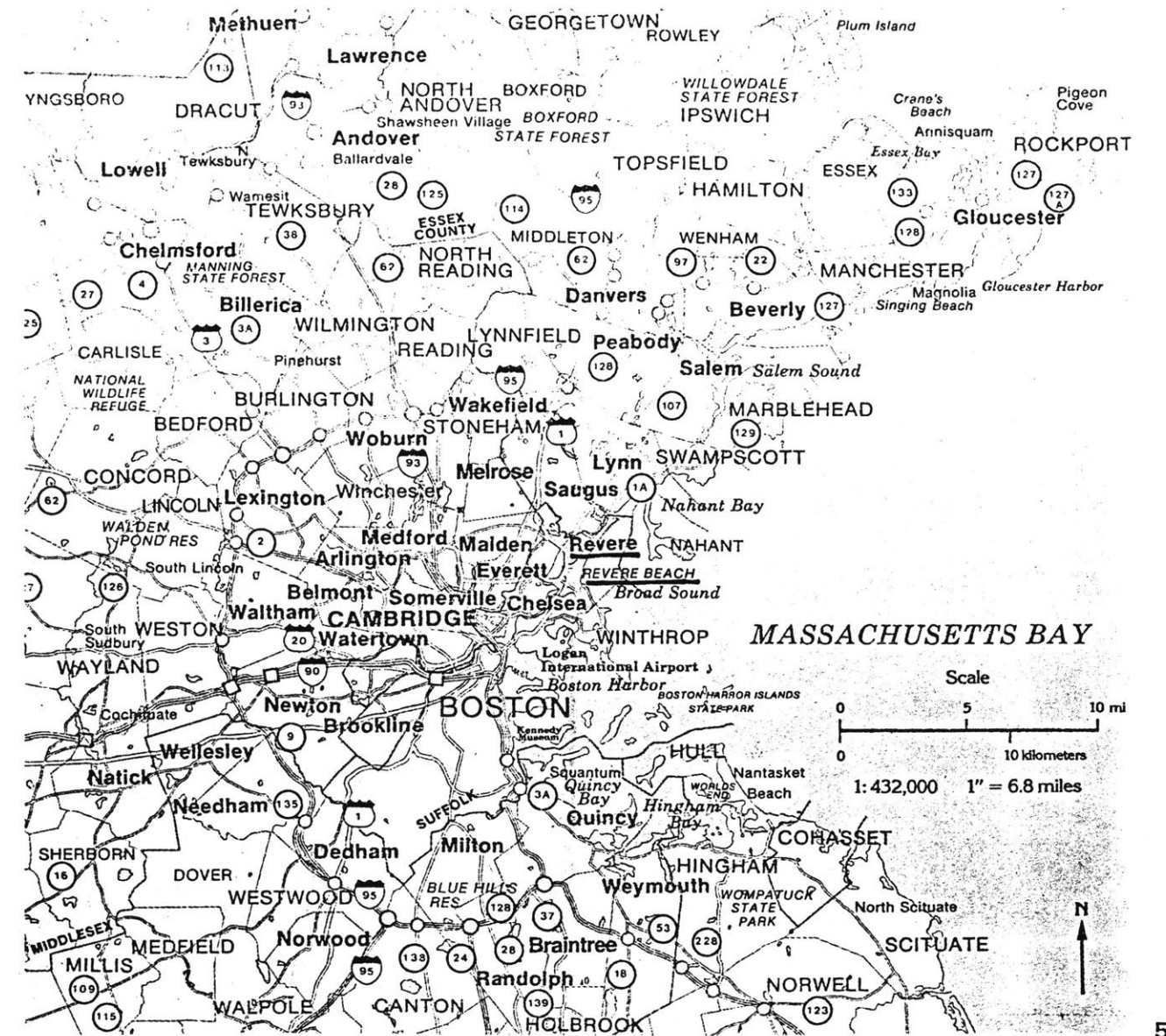
Revere Beach is ripe for development; just five miles from Boston, its location is superb. It can be reached from Boston in minutes by car or by mass transit.

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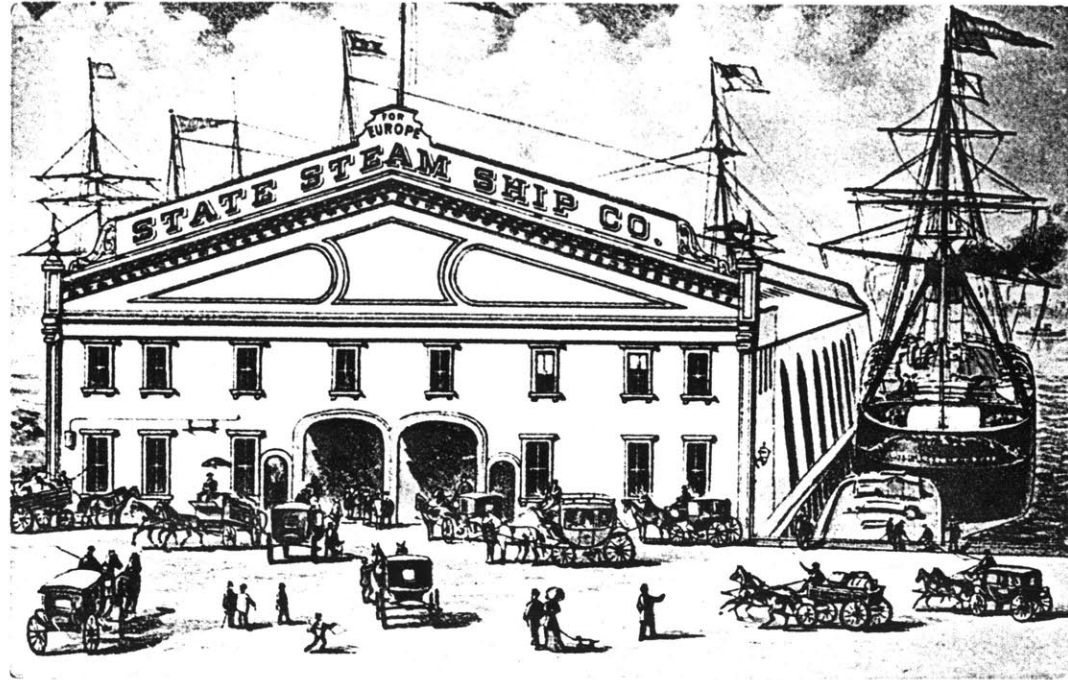
Cities on the water are participatory environments, with diverse urban occupational and recreational activites brought into nature and into the view of passersby.

Because these analyses were free of specific fiscal and legal constraints that would face one actually involved in developing Revere, they could look at Revere Beach in very broad perspectives. Questions about whom the beach should serve, and how, should be answered prior to new development, for such an examination can shed light and sensitivity on even the most demanding capitalist venture that may follow.

This scenario is not generally what happens today. Instead, many of the urban revitalization efforts of the 1970's and 1980's, after destroying a wealth of our cities' neighborhoods, have resulted in empty lots or monolithic housing projects. Investors' money went instead into ubiquitous suburban shopping malls, each one indistinguishable from the next.

There have been a few attempts to rehabilitate cities by combining modern commercial life with re-created environments of the past. Ironically, these privately held developments idealize days-gone-by, as they simultaneously ignore the charm, beauty, and richness of modern life and the genuine situation in the past. Because they are more concerned with visual images of the past rather than the way economy and culture really functioned, they provide meaningless pictures and sever the connection with the past.

Appreciating the past does not mean creating more of these stage versions of former times. Sources should be considered less literally, and with greater sensitivity. We live in a collage of former generations' creations. Restoring and protecting the legacy is important. It provides a meaningful physical foundation for future development and enlarges our set of cultural asociations and our sense of community and continuity.

Restoration is commonly recognized as the way to respect the past, but regeneration and creating anew are also valid means to that end. They are less clearly visual and more experiential, perhaps, but they build connections to the past through the processes of building and shaping the environment. We have had enough Quincy Markets and South Street Seaports. New developments can be alive with real lives of today, with just as much hustle, bustle and enthusiasm as we see in these albeit popular yet homogenized and tiresome shopping centers.

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Revere Beach has always been ignored by moneyed interests. Even during its heyday, it was a beach for everyone, never particularly frequented by the wealthy. From the time the Metropolitan District Commission first claimed the ocean frontage for the populace at large (land for the "first public beach" was allowed to be taken by eminent domain following an 1896 act of the state legislature) Revere was, as it remains today, a very accessible, working class area. While other beaches all along the coast are becoming increasingly private, by requiring fees, residence, or other forms of membership, Revere Beach has stayed as public as it was in 1896.

Developers' neglect may have been benevolent in this respect. Revere is all the more valuable as it becomes one of the diminishing number of east coast beaches remaining in the public domain. However, this situation may soon change. Revere's City Hall has been wooing private developers to build on the empty and neglected beachfront properties. The influence of these new structures will be felt far from the edge of their sites; they will have a strong influence on the character of the beach and the adjoining public lands.

Legally required studies designed to protect the public interest have been performed. The city has a list of publications for developers which include demographic and marketing surveys, financing guidelines, geological surveys and complete environmental impact reports. A design review board has been formed by the city, and the state legislature has given the city jurisdiction over the choice of developer.

But Rever must do more than follow a prescribed menu in order to truly control its own future. The reports and studies listed above are usually performed and often are inadequate. Most people know little about protecting the special qualities of their environments and it is unrealistic to expect the city of Revere, which is under severe economic pressure now, to be more sophisticated than most other cities in insuring its long-range social and aesthetic welfare against the forces of more immediate needs.

Revere wants and needs development and investment. Privately sponsored development seems to cater more toward transient guests and spectators than to active communities of permanent residents. What future can be envisioned that will bring more than merely outsiders' dollars and occasional visits? These needs and Revere Beach's assets, are the source of its potential and the focus of this thesis.

Orientation

The next pages describe Revere Beach, in terms of location and access, history and current state.

Revere's Development History

Revere Beach c. 1892. Prior to the establishment of the Reservation, the beach was congested with a variety of poorly maintained structures. Visibility of the ocean was extremely limited.

1912: "Wonderland, the Mystic City by the Sea" closes.

1920's: Amusement parks spring up along the boulevard.

1912-1934: Wonderland site lies barren.

1934: Wonderland Racetrack, "New England's largest and most successful greyhound track", is inaugurated.

Cyclone, Revere Beach, Mass.

YEAR
1890
1892
1894
1896
1898
1900
1902
1904
1906
1908
1910
1912
1914
1916
1918
1920
1922
1924
1926
1928
1930
1932
1934
1936
1938
1940

1870's: Private houses along water's edge, adjoining Boston and Lynn Railroad (called the "Narrow Gauge") which lies on the beach's crest.

1894: Charles Eliot, of Olmsted, Olmsted, and Eliot, proposes removal of train tracks built atop Revere Beach to provide for a new "sidewalk, driveway, and promenade".

1896: Massachusetts legislature passes bill for "first public beach", entitling Boston's Metropolitan District Commission (MDC) to expropriate land by eminent domain.

1906: "Wonderland, the Mystic City by the Sea", a Disneyland precursor, opens. Survives only six years.

1910: Carriages, bicycles and people strolling on the beach.

RAILROAD STATION AND CRESCENT GARDENS, REVERE BEACH, MASS.

1942

1944

1946

1948

1950

1952

1954   1955: Revere Redevelopment Authority created.

1956   1955: Metropolitan Transit Authority (MTA), precursor
        to MBTA, replaces the Narrow Gauge with Boston
1958   mass transit extenstion. Stops: "Revere Beach",
        "Wonderland".

1960

        1961: New Bath house built, on same site as old
1962   one. Original MDC police station remains.

1964

1965: Revere city planner solicits development   1966
proposals from private investors.

1968-78: Oceanside amusement parks closed,   1968
demolished.
                                                   1970
1972, 1978,9: Blizzards
                                                   1972
1974-75: First concrete development proposal
from private investor. Exchange between   1974
privately held property and MDC lot.
                                                   1976

                                                   1978

                                                   1980
1982: Legislature gives city control over
development of Revere Beach. Coalition of   1982
MDC, city, and bank to choose developer.
                                                   1984
1985: City finalizes land transfer to two
developers: 120,000 sq. ft. office/retail, 630   1986
condominium and rental units in six towers.

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Revere has potential to provide amenities unavailable elsewhere in the region. Currently, however, there is little viable commerce in the area, and even the beach itself is in disrepair. The photographs which follow briefly introduce the reader to present-day Revere.

Typical scene of barrenness along the un-restored section of the MDC park.

Aerial view looking north from southern boundary of site, Eliot Circle. Note the distribution of sand along Revere's 'Crescent'. The wide sandy beach at the south tapers off in the center of the site to a stretch with no exposed sand at high tide, then expanding again to a wider beach further north.
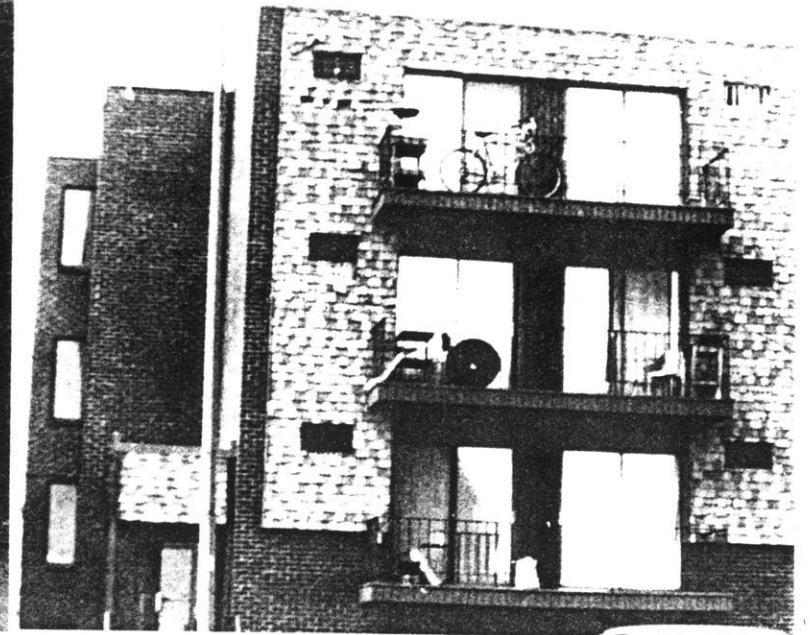
Typical multi-family building in northern section of site.
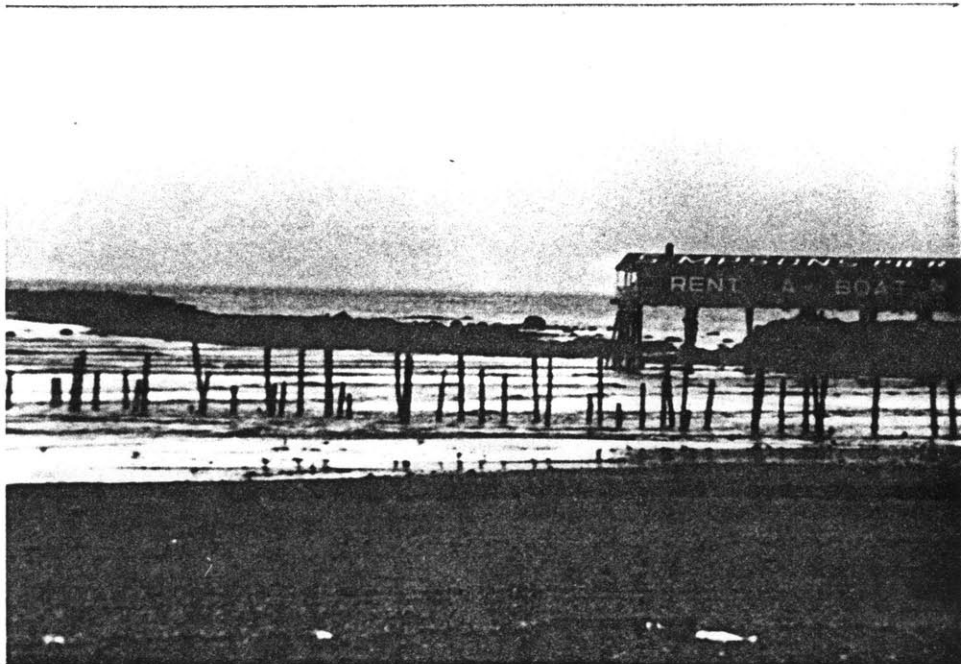
View toward ocean from Eliot Circle, through filter of former marina and docks.

View northern end of project site looking south. Note MDC pavillions along wave-ravaged sea walls and police headquarters.

Steps and seawall in disrepair. Sand eroded from beach.

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Pavillion at mid-beach, missing roof due to 1978 blizzard, but shape of iron frame clearly visible.

View of horizon behind renovated pavillions and bandstand as one approaches beach from Revere Beach station.
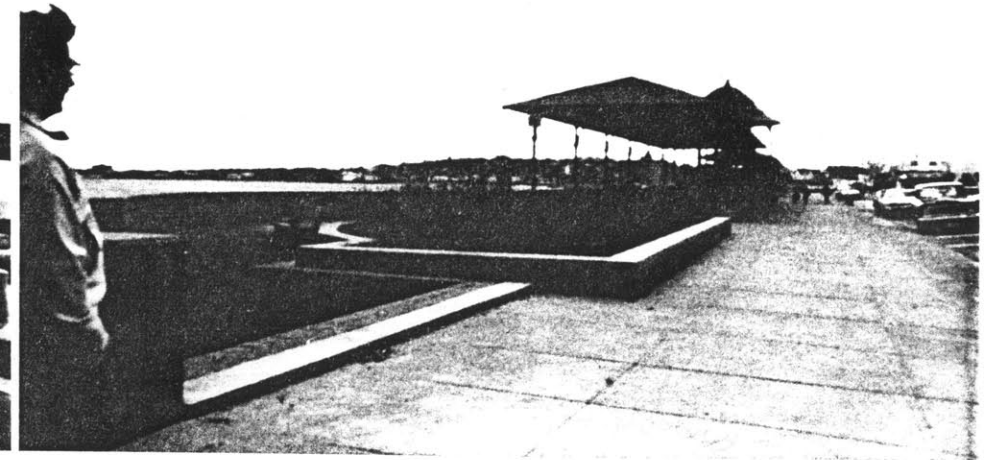
Renovated area seen from the north.

Closer view of bandstand built for Olmsted's turn-of-the-century beachfront promenade.

East Boston rollerskaters, 1984, pictured above mural photograph of Revere Beach bathers of 1896.
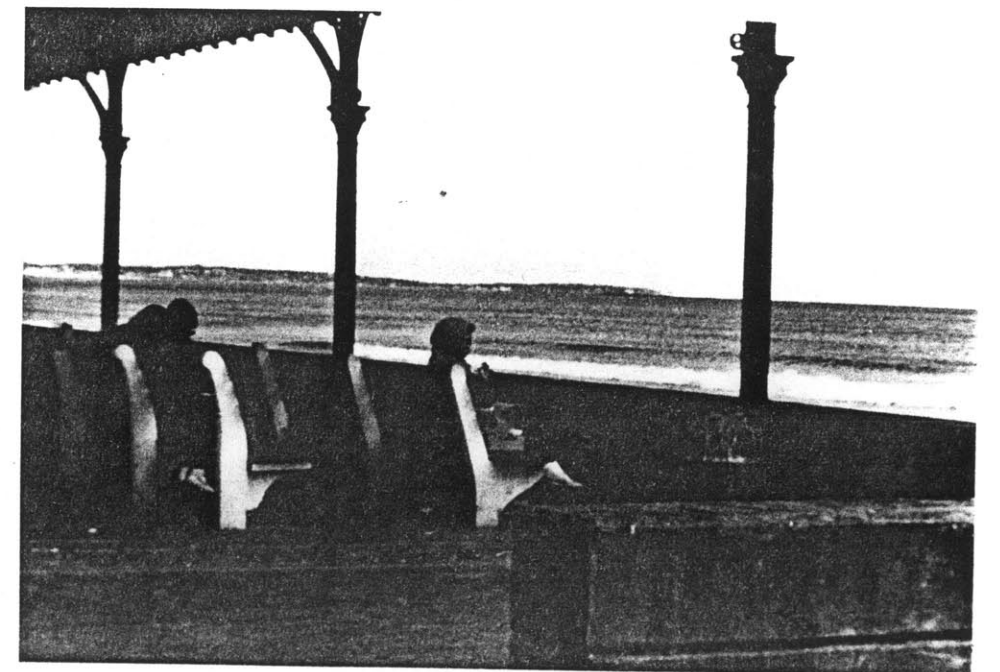
Beach viewers sitting in the bandstand seats of a pavillion, eating take out food.

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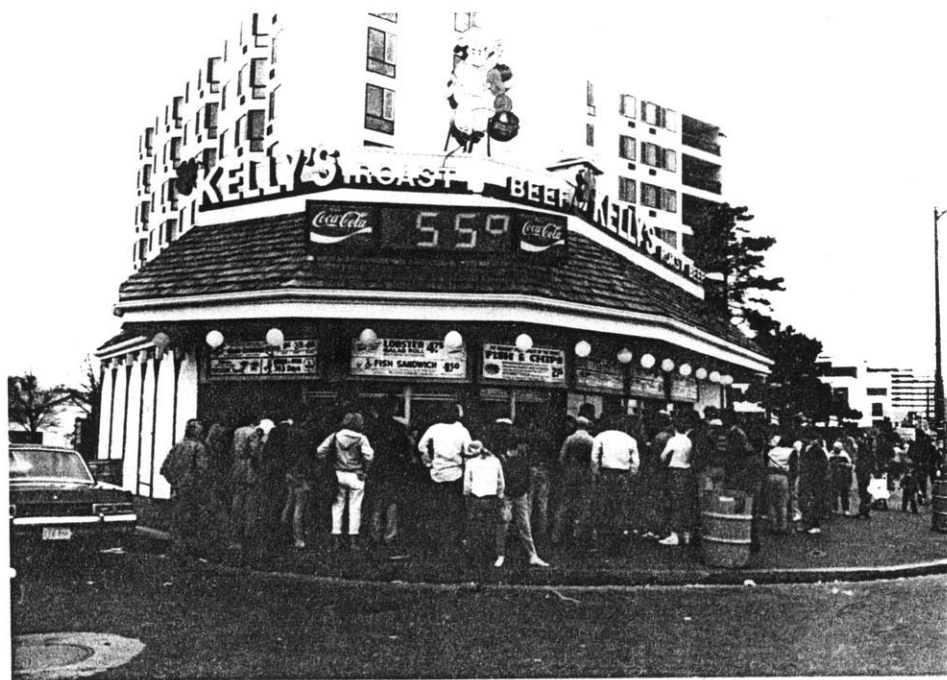
Kelley's, a Revere Beach landmark, at the corner of Oak Island and Ocean Boulevards, marks the northern end of the site. It is popular even off-season. Note seriors' housing behind.

Northward view from just in front of pavillion across boulevard from Kelly's. Primarily residential. Note parked cars with ocean views. For half a mile in either direction, people sitting in these cars are eating take-out fare from Kelly's.

View of Kelly's, the MDC pavillion across the boulevard, and Nahant just above the horizon.

Scene for evening entertainment: bar and dance club
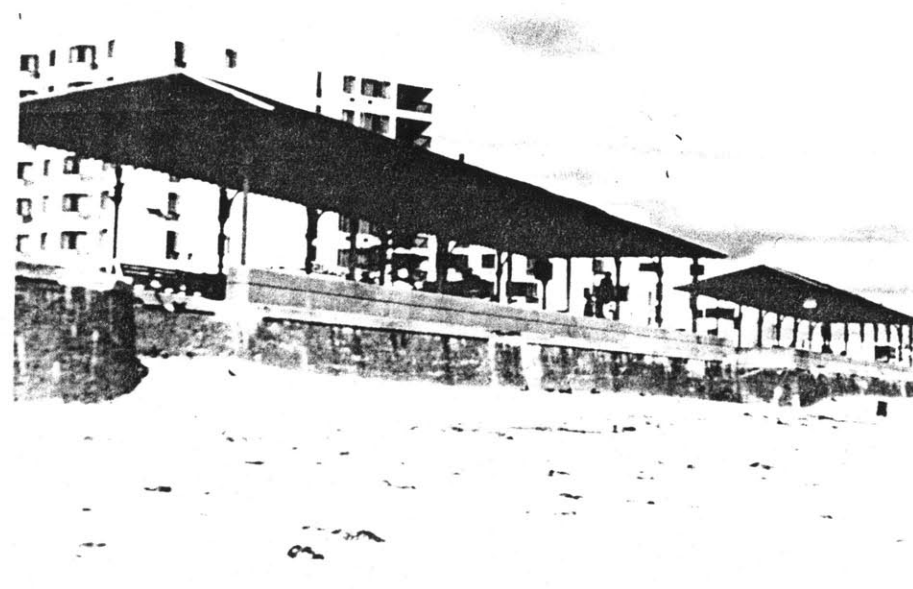
View from the beach of this pavillion, currently the northermost of three sets of pavillions. Pictured in front of Revere Beach's largest senior citizen housing development.

Automobile congestion and curve of the beach on a cloudy, spring day. Photo taken from northern end of site, which runs to the apartment building in the lower left of the picture, at arrow.

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MBTA & FERRY
SYSTEM MAP

REVERE BEACH
NAHANT
ORANGE
BLUE LINE
RED
GREEN
GREEN LINES
ORANGE LINE
BOSTON
BOSTON HARBOR
SUMMER FERRY
NANTASKET
COMMUTER FERRY
RED LINE

MOST POLLUTED

MBTA
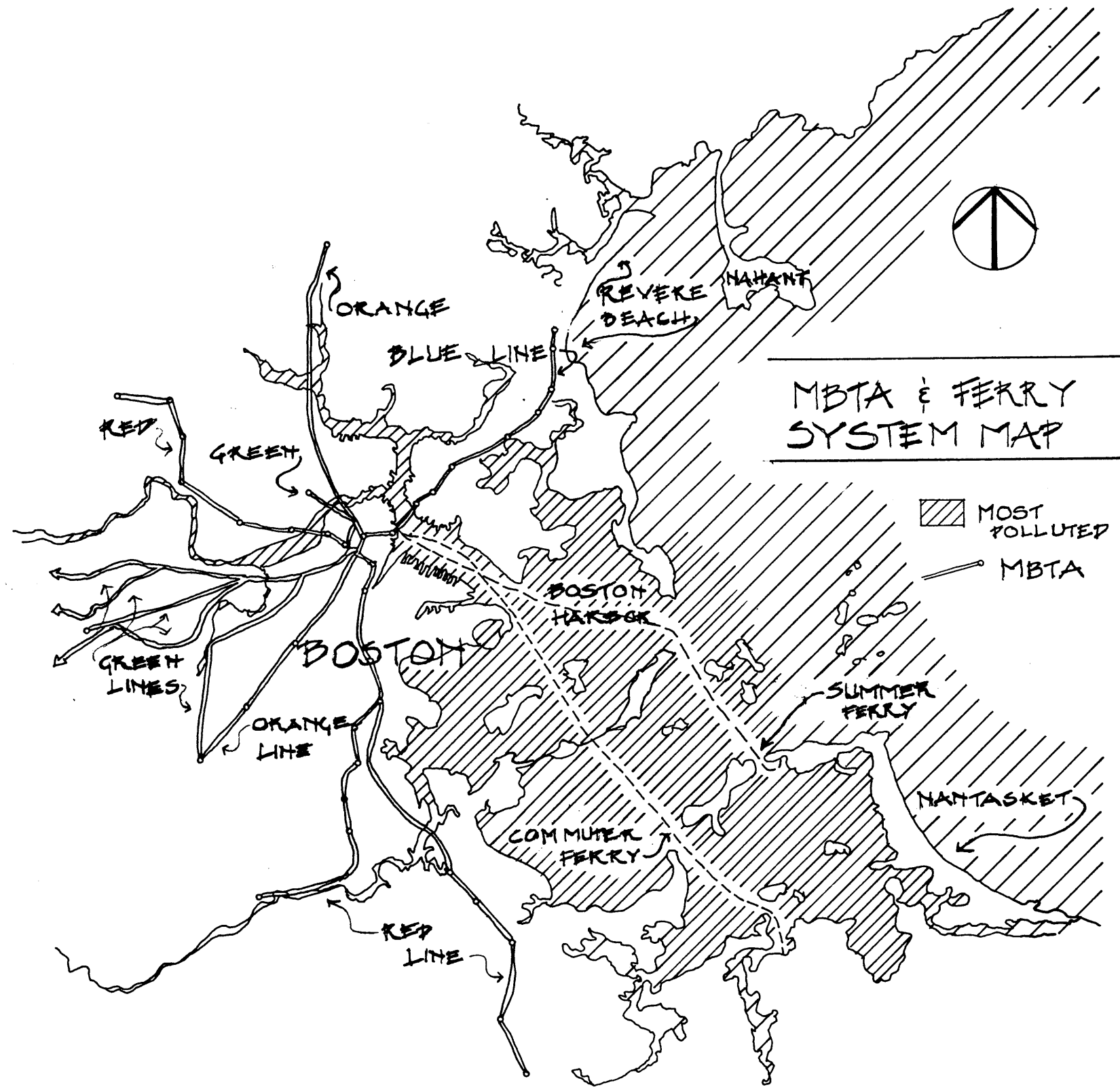
Accessibility

Revere Beach's accessibility is one of its greatest assets. Residents of Boston or its northern and western suburbs can be at Revere in a matter of minutes. From East Boston, Revere Beach is five minutes and another world away.

The proposed development site contains the last two stations of the Metropolitan Boston Transit Authority (MBTA or "T") Blue Line, one of four major subway routes serving the city and environs. This line originates at the Aquarium in downtown Boston and passes through Government Center, where it connects with other lines. It runs then to the airport and through East Boston, before reaching Revere Beach and Wonderland, the last two stations. From the farthest point on the subway system, one can be at Revere in under three-quarters of an hour.

The beach is also easy to visit by car or motorcycle; both are common here. Highways, park drives, and numerous two-lane roads connect Revere easily with neighboring municipalities. Parking facilities are vast and inexpensive.

Automobile routes from north and south are numerous. Routes 1 and 1A, from Boston and New Hampshire, miss the water's edge at Revere by only a mile. Route 16, an old suburban connector, passes through the northwestern suburbs of Newton, Watertown, Arlington, and Somerville, as it winds its way around Boston. In Everett, it becomes "Revere Beach Parkway", as it finally heads toward the beach (This interesting route, operated by the MDC and winding through parklands for much of its length is discussed in a later chapter, under "Automobile"). Driving from Newton takes about 25 minutes; from Boston, just over ten.

From the north, as well, Revere is easily reached by Route 1 or the Lynnway. The latter, which runs along

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CITY OF REVERE
MASSACHUSETTS

▲ PLAYGROUNDS
● MINI - PARKS
▣ POINTS OF INTEREST
♦ CHURCHES & SYNAGOGUES
Ⓐ MARINAS
✚ PARKING AREAS
*192 ELEVATIONS OF MAJOR HILL
═══ PROPOSED OR UNIMPROVED S
═══ SECONDARY STREETS
═══ MAJOR ROADS
═══ HIGHWAYS
═══ ONE-WAY STREETS
⟂ STAIRWAYS
⊶ MBTA BLUE LINE
═══ RAILROADS
─ ─ ─ TOWN BOUNDARIES
▭ BEACH AREA
▭ UNDEVELOPED AREAS
▭ PARK AREAS
▭ SALT WATER MARSH

N

SCALE 1:16 500
0   250   500   750m
0 500 1000 1500 2000 7500 ft

the northern Massachusetts coast, crosses over the mouths of the Saugus and Pine Rivers as they empty into Broad Sound and the Atlantic Ocean just north of the Revere Beach penninsula. It connects the site directly with the town of Lynn and Lynn and Nahant beaches.

During the summer, teenagers often ride bicycles to Revere Beach. Revere Beach is close enough to Boston and its suburbs to make an ideal destination for day-long excursions by bike. However, there are no safe approaches to the beach for bicyclists. They are forced to negotiate dangerous automobile routes.

The same problem faces pedestrians, roller skaters, and joggers heading toward Revere Beach. Various non-automobile routes to the beach, would be an asset not only to Revere Beach, but to people living in neighboring communities as well. Bicycle routes and pedestrian paths would also reduce automobile congestion along beachfront roads.The easiest beach to reach in Boston would be brought even closer, and the process of arrival could unusual and an activity itself.

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From Boston heading north on the MBTA's Blue line, the first stop near the beach is "Revere Beach" station. A second, "Wonderland", is the last stop on the line.

	Boston to Revere	Boston to Rockport
time	13-20 minutes	1 1/4- 1 3/4 hours
frequency	every 10 minutes	once per hour to once per three hours
cost	$.60	$3.00

Comparisons between trips from Boston to Revere and Rockport.

In the Context of Other Beaches

One advantage of living in Boston is that it so is easy to leave - for the mountains in New Hampshire, the lakes in Maine, and the beaches at the coast. Cape Cod and its islands are not far; neither is New Hampshire's sandy coast. All along the northern and southern shores beaches of various kinds abound. So, Revere is certainly not alone in offering sand and waves to city dwellers. Any analysis of its redevelopment should include a look at its neighboring beaches, its primary competition.

North of Boston

Boston's north shore has beautiful sand beaches, ranging from expansive natural stretches of dunes and marshes to tightly bounded, more urban waterfronts. They are found within and between the country's oldest harbors and settlements. Towns with such colonial names as Newburyport, Rockport, Marblehead and Gloucester are home for many of the more developed swimming beaches. Wilder ones include Crane's Beach near Ipswich; Plum Island, Newburyport; Singing Beach, Manchester; and Wingershaek, Gloucester.

Many beaches north of Boston are windy, wild and dramatic. They are ideal for swimming during the heat of the summer with rock-free, sandy floors and cool ocean breezes. Off season, they and even the more urban beaches provide a place for solitude and contemplation. The less developed are havens for birdwatchers in any season. And there are many opportunities in this region for those who love to walk long stretches of sandy beaches.

Commuter trains run between Boston and north shore communities as far up as Ipswich on one line and Rockport on another. So beaches within easy walking distance of train stations in these towns or others on the same train route can be easily reached by "car-less" Bostonians. With a little foresight and more time and money, Boston urbanites can spend an enjoyable day that seems far from city life at any of a number of the more remote beaches.

However, such destinations are ill suited for quicker jaunts. The journeys are more complicated and expensive than the trip to Revere Beach, take much longer (see chart), and are not for the old or infirm. They also offer few visitor-related facilities nearby, such as restrooms, changing rooms, lockers, grocery stores or restaurants.

Revere should be developed as an alternative to these beaches. It can bridge these worlds, giving to those with neither time, ability or desire to walk far, a beach and many other related amenities.

The more wild and natural beaches are about an hour from Boston by car. South of them, closer to Boston, beaches become more urban. Barriers between sub shops and bars, cars, sand and water diminish. The automobile rules at these beaches. At the current Revere Beach, a concrete sea wall and an automobile promenade sparsely lined with bars and takeout restaurants dominate the beach. It stretches for miles, as an extension of the urban world to the ocean's sand beach.

A north shore beach.

LYNN BEACH

NAHANT BEACH

NAHANT

REVERE BEACH

WINTHROP

CASTLE ISLAND
PLEASURE BAY

CARSON BEACH

MALIBU BEACH

HULL

NANTASKET
BEACH

WOLLASTON
BEACH

Boston Metropolitan Area beaches.

South of Boston

Boston's south shore metropolitan beaches are similarly dominated by cars, with more natural landscapes lying outside the Route 128 ring around Boston. At South Boston's Castle Island and Pleasure Bay and at Quincy's Carson and Wollaston Beaches, roads run close to the water and cars park near the edge. Commercial development at these urban beaches is smaller scale than at Revere Beach and is spread along the beach between houses. Like Revere, it is liveliest in the summer, but shuts down much more than Revere during the rest of the year.

While these south shore beaches lie within the Boston Harbor, they cannot be reached by the subway system. Like most Boston locales, they are, however, served by bus. But because they are within the harbor, their waters are polluted and may take decades to clean. Revere Beach lies just outside the harbor, and, while its water is not completely pure, the pollution is more localized and less severe.

Nantasket Beach is probably Revere's most obvious competitor. It is the site of Boston's only remaining amusement park, acres of parking lots, and a four-mile-long sandy beach. It is the most public of the south shore's beaches.

However, Nantasket Beach is less accessible to Bostonians than Revere Beach is. During the summer only, passenger ferries connect downtown Boston and Nantasket. Travel by land to Nantasket is not comparable with the trip to Revere; Nantasket is 20 miles from the city by car or bus; Revere is only five. Revere can more easily become a nighttime and off-season extension of the city, whereas Nantasket's offerings relate to Boston primarily during summer days.

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I spent the months before my thesis semester working and travelling abroad, and everywhere, I scribbled thoughts about Revere into a sketchbook. My ideas focused on recurring themes Revere's environmental, social, and physical endowments and questions about the nature of beach architecture in general. This chapter discusses those issues I found which can and should influence Revere Beach's future development, along with some hypotheses for their implementation. A following chapter discusses design possibilities for the site, and the final chapter briefly documents one particular proposal for its redevelopment.

Some of my questions concerned Revere, specifically, while others were more general. I continually wondered, for example, how the a new development could emphasize the a curve of the beach. Indeed, how can an architectural design relate to a powerful natural form? Should it echo the shape, for example? Should the buildings take on the crescent shape of the beach? Or can the curve generate the building and street forms more

directly by radiating out from the beach itself? Perhaps an alternate to the natural form should be presented, a regular pattern which points out the variety presented by nature. Even if the curve generates the main direction in one way, say with echoing, concentric circles, other patterns will also emerge. For example, those places which differ from the major direction can become significant. Currently at Revere Beach, for example, where the seawall and boulevards run the length of the beach, the places where the other direction is obvious are the entrances to the beach. They are also the largest open spaces and the places of public gatherings.

I also questioned how can the continuity of the curve could be maintained. Its size is magnificent - can a new development reinforce this? Should there be many different worlds along its length, making the beach itself the only constant and connecting element?

This chapter discusses and formulates potential answers to these questions. It considers internal and external influences on the site, as well as their implications for future developments.
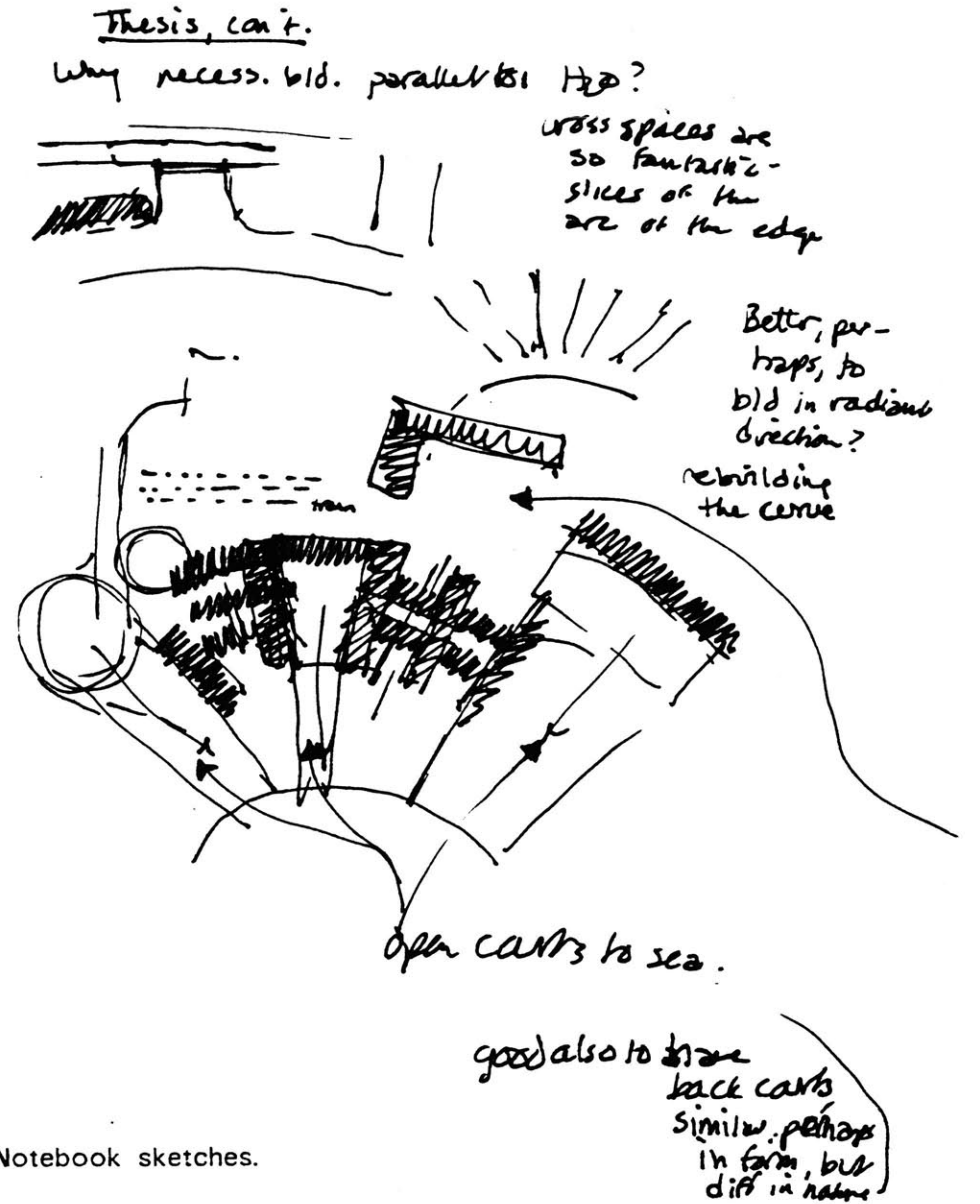
Notebook sketches.

Realms

Design is not a matter simply of identifying and ranking conflicting forces, choosing winners and losers, but exploring the appropriate realms and jurisdictions for each. Apparently contradictory claims and needs, if successfully articulated, can often be harmoniosly intregrated. The more overlapping and complexity required and successfully combined, the richer and more sophisticated the result, compared to the design conclusions suggested by considering the elements contradictory.

Reciprocity

Revere Beach is formed not only by land but by water. It can be seen as concave (land), or as convex (sea). Acknowledging alternate views either simultaneously or sequentially affects one's perception, and allows for further transformations and mental changes of perspective. Arrival by T and by car are easily thought of, but what about arrival by and percepcion by ship or boat? This idea of reciprocity, an understanding of the ability to change ones perception of what is primary, is a factor of edge environments of edges of all kinds, including that between land and water. The archipelagoes in Scandinavia and in the Adriatic, are prime examples of the rich world of a place of half-land, half-sea. As in the arctic, it is hard sometimes to know whether one is really on land or at sea.

While this switch seems mainly to occur as distance from "shore" increases, transformations can also be a factor of time. Our sandy beaches in the northeast commonly become tidal flats at low tide. What was previously water becomes land. That switch is further marked by the influx of birds and others, including human and other animals of prey.

Scale, too, doesn't matter. When looking at a globe, does one see land with puddles or water with islands? Perhaps this desire to see the reciprocal side is at the root of people's fascination for change - seasonal and daily, in nature and in built environments. Changes may be radical, but each stage has its own life, its own ecology. The transition sometimes produces momentary blindness and feeling of loss, but the alternative state finally emerges in richness. It depends on what you are looking for, and how attached you are to one state or another.

Children who like jumping in the waves at high tide don't like to see it go, and do not as readily perceive the new possibilities for entertainment posed by clamming and digging at low tide. Wealthy people, who hae enjoyed watching yearly landscaping improvements and automobile purches of their neighbors, do not always perceive the nuances and richnes in alternate lifestyles that coincide with the downgrading of neighborhoods and dropping property values.

Reciprocity involves the shifting importance of various factors. First one seems to be primary, then the other. After a while what used to be background becomes as prominent as what is clearly the focus, though it may be present in lesser degrees or even conspicuous by its absence.

What are the potential reciprocities here at Revere? Other than land and water, they are between public and private, residential and commercial, winter and summer, sun and shade, sand and water, sand and dune grass, sea and river, road and parking, paved and unpaved. Rock and sand, concrete and sand, concrete and tile, concrete and wood.
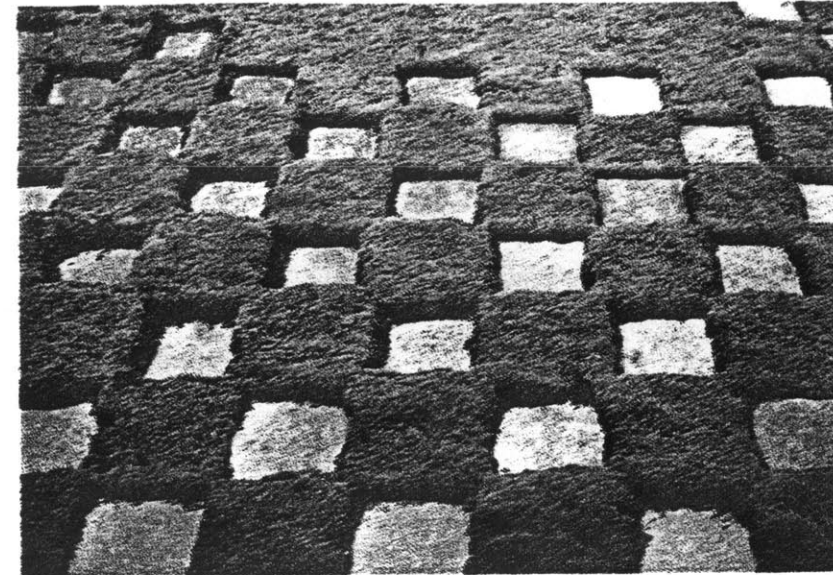
Figure/figure (versus figure/ground): **examples of designs which focus reciprocal nature of materials: 1935 Checkerboard of moss and stone, Tofukuji monastery garden and Heian Shrine, Kyoto, Japan.**

Betweeen all the elements and all the parameters, it seems.

There are more, of course. Work and play. Youth and old age. Growth and decay. Producer and consumer, male and female. Hard and soft. New and weathered. Wet and dry. Ephemeral and permanent.

The list could continue, but the principle is simple. Nothing is all one or the other. All factors have their alternates within, and a choice for one is a decision against another. Design of environments, and the environments themselves, consist of creating or exhibiting conversations between opposites.

Multiple Focus

Public places, even those with one major focal point, always have many routes and small regions with local character. It is reasonable at Revere Beach to relate a new design to the curve. However, the design should also recognize other scales and orientations in the context. Developing the "back" or even "underside", can provide the site with a positive alternative to the exposed, harsh world of the ocean exposure, while still being in its territory, and is fundamental to the creation of a viable public environment.

Venice's Piazza San Marco and Atlantic City, New Jersey's, boardwalk are two examples of environments which provide spaces in the realm of the sea yet not right there. One's senses are continually drawn toward the water, even when one is bufferd from it, contained by other spaces and buildings. These other places can be surprisingly small, because they gain from the sense of larger space beyond. Without the proximity and connection to that larger piece of the map, the same spaces would feel too containing and claustrophobic.

There is a corollary to the idea of multiple foci; that is, the impact of looking at the same object or place from many perspectives. Vantage points can be varied and different - physical places, social situations, frames of mind, or many other settings - but the principle remains: allowing for multiple experiences of the same place or object increases its possibilities of use, meaning, importance and legibility. Many know the Piazza San Marco, for example, from walking among the throngs of passers-through. Sitting at one of the elegant, seranaded cafe tables, looking out onto those crowds is another way, and sheds new light on what the piazza is all about. Looking out from the windows above, from a place of privacy onto one of the world's most famed public scenes gives still another view. In a way, the piazza is three different places, depending on which of these means by which one comes to know it.

Revere Beach's is currently designed with elements to echo that strong force, or to relate to nothing at all. A sea wall lines it completely, followed by two and three roadways. There is little else that reflects the scale of the beach or relates to any other factor of the environment.

The boulevard, in a less physical way, creates an alternative focus, however. It is a hangout strip for teenagers, some of whom spend the entire day at Revere Beach without ever going onto the beach, much less into the water (what percentage of people actually get wet at Revere?) It is a similar situation at Kelly's fish and chips take-out

Houses along the Rhine, constrained by mountain and river, echo the patterns of both.

restaurant. And that is the source of Revere Beach's richness, an irony and tension between the competing attractions - run-down yet tasty little take-out joints and the magnificent sweep of the ocean, creating a flash of awareness and excitement.

Other alternate foci and small local locales need to be created at Revere. External orientations to draw upon include the view west which catches the sun as it sets over Revere, Boston, Chelsea and Everett, the reeds and swamplands of the "other side", the dunes (or the place where they would have been, and the MBTA tracks.

Depending upon the nature of future developments, internal foci also can command public attention. They might include the following:

- courts along the ocean, acting as partially enclosed privacies off the main court, the crescent beach.

- a main street that runs parallel to the beach, but is set back, within or behind a row of buildings. Near the beach, but primarily separate from it.

- a dense strip of development along the beach, without an internal main street but which backs onto the outside, the back.

The development should not ignore the beach, however. At times it should join it, or even disappear into it. This development should play orientations, images, and scales of the beach against each other. When turned from an ocean view, for example, one should be re-focused on another aspect of the beach environment, another scale or material. In nature as well as in the buildings which line its edge, one's perception should be redirected from large scale to small, from beach to building and from the large forms to their local manifestations.

The perpendicular is also important. While the lateralness of the beach is very powerful, particularly on the sand and near the water, it is significant that the built approact is perpendicular. One feels as though one were heading toward an obviously great destination. Just before, heading up the final hill, one sees nothing through the windshield but road and sky in front, then only road and water. Then it is only water and air. After experiencing these views of infinity, it feels ironic that one cannot continue onto the water.

However, one must be careful with this direction, for courts bordering a public place can claim it, by introducing a competing force into the scene, one which competes with the established public one. The strength of the new direction, measured by the degree to which it affects the public, is determined by the scale of the element which generates it. As long as they do not obstruct the public direction, small, more private courts enrich the scene, and give the public length a local character which varies.

The Curve

"To make provision for orderly sea-bathing was imperative; yet the buildings for bathers threatened to impair very seriously the chief beauty of the reservation, namely the long unbroken sweep of the curving beach." Charles Eliot, 1896.

Causing Revere to be known as "Crescent Beach", the three-mile long curve suggests certain roles for Revere Beach which any development plans should recognize. In the discussion that follows, the nature of this curve will be discussed, with some proposals for adapting Revere Beach's new design to it.

Relative to Boston and within the larger metropolitan area, the curve gives Revere Beach an identity. The crescent is visible on any city, state, or regional map; its shape places Revere Beach in relation to other major urban pieces that define the nature of the region.

The scale of the curve is impressive in establishing an image of natural forces which create and modify the site: combinations of the waves and the tides, the sun and the wind, the rocks and the sand. One sees as well smaller manifestations of these interactions - the little patterns set in bumps of sand, the individual waves crashing on the beach, blades of dune grass blowing in the wind. The larger dimension, presented by the curve, suggests the strength of natural elements - tides, wind, ocean currents, geological composition and dynamics of the ocean floor and the beach. But its protective, enclosing shape reminds us that this is still not the open sea; while the forces here are indeed great, recorded in the beach shape, itself, there is also the feeling that Revere is part of a much bigger picture.

The fact that Revere Beach does not form an arc, a section of a circle, but a spiral, is important. As one moves along any curved beach, views out - toward the ocean and horizon - change more radically than they do at a straight-edged beach. A spiral exaggerates the effect, providing, depending upon the direction of movement, a continually increasing or decreasing of opening up of the view. It also provides for differing views of itself - at times it can appear a parallel barrier beach while at other points it is practically contains a piece of the ocean.

At Revere, this is the case: entering the oceanfront area at Eliot circle, the southern end of the beach, one's view is most contained. Piers from an old marina jut out from the bottom of the curve on the right, Nahant cuts across from the north, and the beach itself completes the circle. The sense of enclosure one feels from this point is intensified by the perspective - all things converging in the distance. From other spots along the beach, however, there is the feeling that Revere Beach is a practically straight beach.

Both in its natural state and in its current one, it is clear that these parts are all part of a whole; it is up to any future development to enhance the continuity suggested by this curve while also drawing upon the differences it offers.

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As a large concave shape of land at the ocean, Revere Beach is an obvious opportunity for public use. The curve represents a privacy, but one at a collective scale. At straight beaches, the individual confronts the eternity of the oceans alone. When the beach is curved, those contained by that shape share the relation to the sea and to what lies beyond.

Beaches like Revere are egocentric, framing and containing views out from it. It makes one continually aware being within a human community, albeit within the even larger context of nature. And this is essentially what makes a place public, where one becomes aware of the collective world.
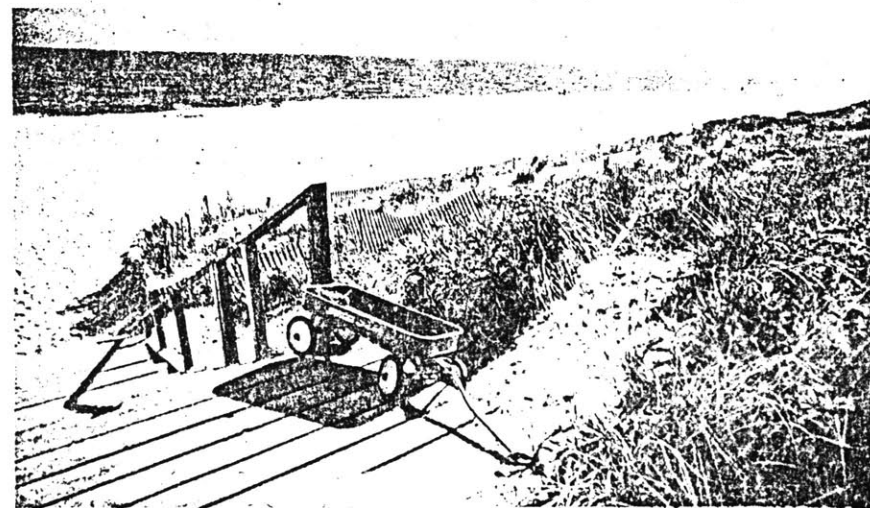
Belvedere, England, Esplanade.

Contrast the solitary expanses of North Shore beaches with the enclosed social intensity of Pelham Bay Park, Belvedere (England) Esplanade, and Revere.

PELHAM BAY PARK
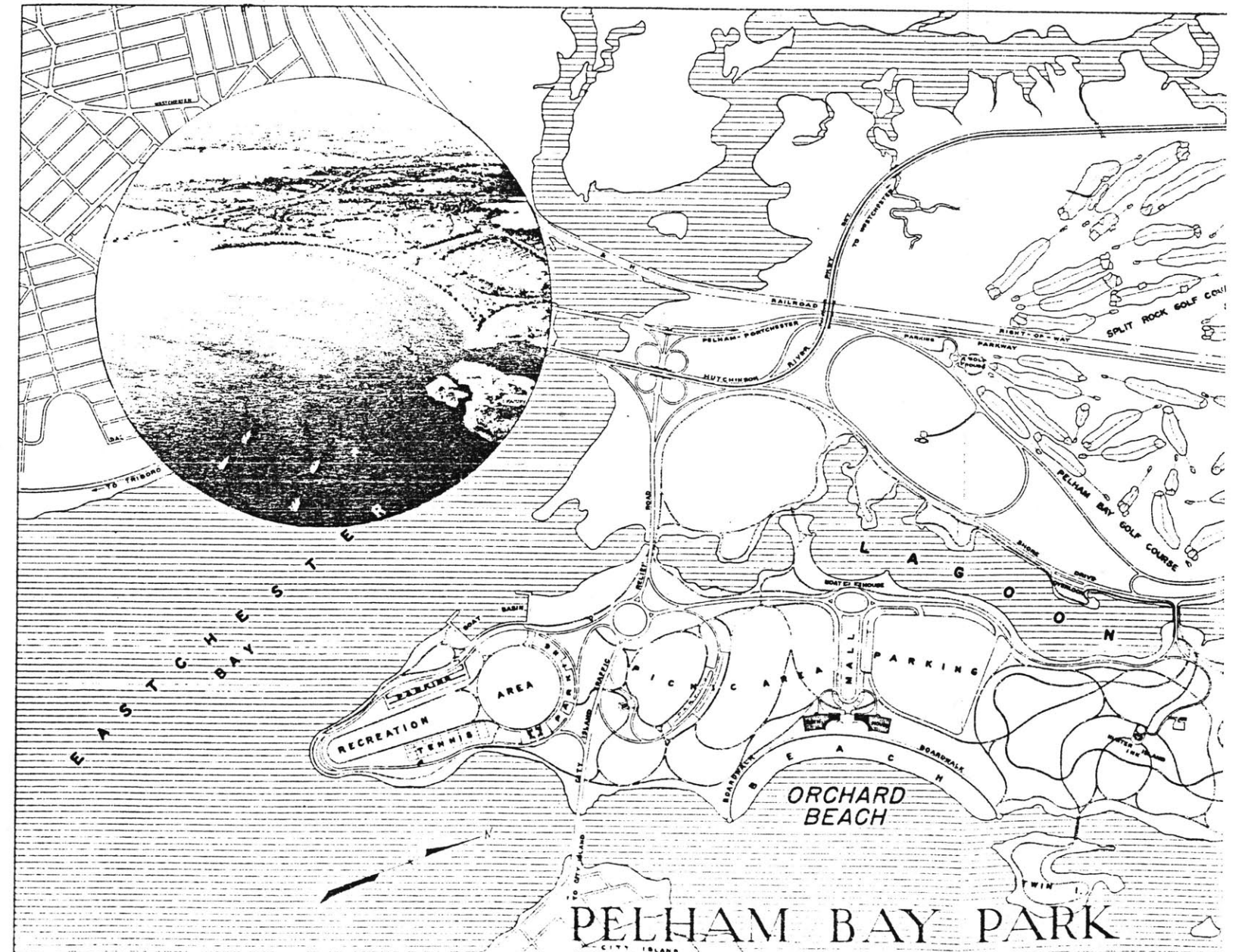
The meaning of the curve has been discussed so far, rather than how to further an appreciation of it. How could a new development intensify the curve, allow it to retain its strength and character regardless of, or in addition to, other things built nearby. As the above thoughts seem to suggest, many aspects serve to "build" the curve, i.e. introduce / awaken / attune / refer one to its existance. To recapitulate, the things you can do to "build a curve" (or anything, for that matter, as discussed below) include the following means:

echo it

repeat it

complete it

build its negative

extend it

transform it

be transformed by it

move along it

radiate from it

oppose it / show alternatives to it

For example:

ECHOING Revere Beach's curve: Almost any plan for Revere Beach would develop at least a part of it laterally. This might mean that the buildings are more wide than they are deep, more parallel than they are perpendicular to the beach. Or, significant paths run the length or direction of the beach. Individual elements, sets of elements, or similar zones interspersed along its length also "add up" to a parallel direction. Already, the cast iron pavillions running along the beach, along with the sea wall itself, tend to reinforce this curve by echoeing it. Or it could be less literal or less visible - the program could be oriented around the curve. Or certain significant places could be situated incrementally along it.
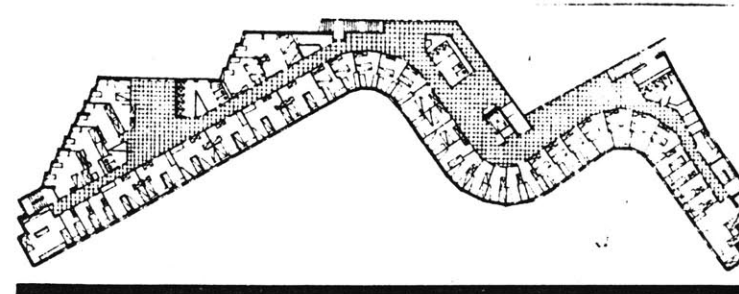
Alvar Aalto's design for Baker House, an M.I.T. dormitory along the banks of the Charles River, echos the flowing form of its water.

EXTENDING IT: If the curve were extended, into the water, for example (or anywhere - into the sky, the sand...) it would become more apparent. This could be done with a series of islands, a single one, such as a light house, art or lights or shadow, or building form.

COMPLETING IT: Fundamentally, this means closing the ring, making the curve into some kind of oval or elipse. However, there are different ways to do this, some which are more incomplete, more suggestive and less literal than others. For example, a curved pier might extend somewhat into the water, followed by a separation of water. Continuing along in generally the same route, might be a series of islands or groupings of islands. Beyond them may lie some buoys or some floats, and beyond them, the other end of the curve. The curve will have been "completed", but with some richness.

TRANSFORMING IT: As it moves along, for example, the curve might change composition. At one point, it might consist of many layers of lateral terraces, whereas partially down the beach, this vertival composition might fan out into a series of paths, running in the direction of the beach. Further along, it might become a series of bungalows, whose roofs run perpendicular to the direction of the beach, but in being "lined up" along the curve, tend to reinforce its direction. There are many musical associations possible - the curve of the beach as time, the change in the physical form along its length the progression of the music - continuous yet changing.

OPPOSE IT: Putting rectilinear buildings in proximity to the curve, may make the natural shape more apparent. Finnish architect Alvar Aalto often took this approach to natural sites by capitalizing on differences betweeen the slick, clean, and man-made and the natural. Yet. he also repeated the colors of nature in his man-made materials, creating conversation and relationship between the two.

BUILDING ITS NEGATIVE: This is a relativistic issue; it depends on one's orientation and which piece of the picture one is looking at. If the curve is considered convex, i.e. the water, one way to focus attention on it is to design its inverse, the concave piece which is equally responsible for the shape. In this case, we would build the land in a three-dimensional curve

This list was developed from considering how to dramatize the curve and how to let one factor generate abstract design guidelines. Once these factors were listed, it was clear that a similar list could be similarly developed for any factor one wishes to make perceptible.

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Promenade

A curve, especially this one, generates sequences. It is partially due to the changes in perspective that occur as one moves along the beach. A promenade, then, is a form that takes this notion one step further. Such a sense of moving along the curve is already evident at Revere Beach. Currently, in fact, it is almost the entire experience, to the obliteration of all others. What had begun as a promenade, presumbably abmidst other things, now remains as a car strip.

While Revere Beach's promenade is in such disrepair, the idea need not be scrapped. Boston has a fantastic set of such urban routes, an endowment from former times but still active and successful, to which Revere Beaches can related. They include urban paths along the Cambridge and Boston banks of the Charles River, trails along the city's numerous reservoirs, historic routes through the city, pedestrian paths through urban green spaces such as the center city's Commons and Gardens, and the more suburban Arnold Arboretum and Franklin Park. In fact, pedestrians, joggers, bicyclists and automobile drivers find routes designed especially for them throughout Boston's "Emerald Necklance", a Frederick Law Olmsted designed system of urban parks, generated by the water routes - the Muddy River, Jamaica Pond, and the Charles.

There are other local urban and thematic promenades that could serve as examples and partners for Revere Beach. The city's "walk to the sea" is a windy route that follows the history of land fill and inhabition of the Boston Harbor; it goes from the State House to the sea, through Government Center, Quincy Market and Faneuil Hall environs, and finally, under the "southeast expressway" to a waterfront park. Paul Revere's Historic Trail is another well known pedestrian paths in the city. Both trace stories of past times but also, and perhaps

more importantly, provide unusual views of modern Boston. They go through commercial districts and office, residential and industrial areas, sections of the city with which people usually have contact only individually. Inasmuch as knowledge is liberating, these slices through are very valuable. Like walking through a residential neighborhood at dusk, when everyone is home and the lights are on - you can look right in from the street, and see things you would never usually have the chance to see.

The Carpenter Center, Harvard University's Visual Arts Center, was a more figurative reference for the promenade and for the organization of the program. Public and private areas in this building are organized differently and, to some extent, separately, yet their co-existence makes an exciting environment, incorporating a promenade into a working environment. A public walkway, from which many of the private work spaces can be seen, begins as an exterior ramp from the street, and moves up, passing through the building. It is separated from the artists' studios not only by elevation, glass windows and concrete walls, but by the fact that it has meaning and direction of its own. It floats through, flies through, pierces the building, then meets it at the one appropriate place, coincidentally, at the gallery, and then continues on its way. The path's goal is clear - the open sky and a place to overlook the surrounds from a special vantage point. The feeling of the public path is dynamic, much different from the static workplaces. They remain, while the path "moves" through.

As Olmsted and Le Corbusier did in parks and urban designs across the country, Revere would benefit by reviving this sense of promenade, leisurely movement along a course, for exposure and viewing, not only for cars. The site calls for complex creations of different and
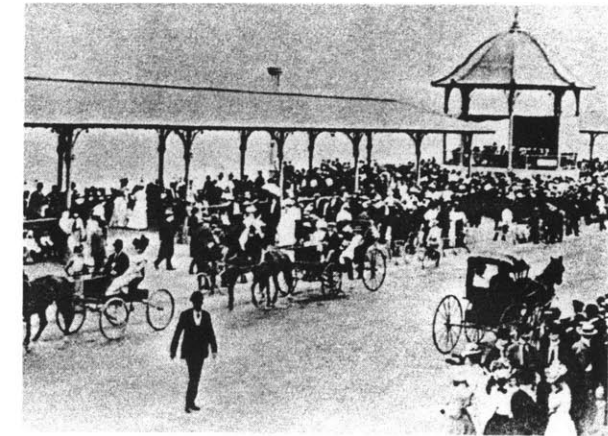
distinct sets of experiences for potentially conflicting users, sensitively designing their meeting points, and reflecting their individual natures in the design of these paths.

For all - cars, pedestrians, joggers, commuters, workers - the routes should connect them visually, in movement, by smell and sound, with the nature of Revere Beach, its "back" as well as its "front". Multiple scenarios of movement are equally rich, and this is Olmsted's medium. Paths for cars, pedestrians, and equestrians wind throughout Central Park. Few Manhattan streets can rival these roads they are picturesque, fast, direct. And beautiful. The pedestrian routes, as well, are filled with interest as they twist and wind through the park, yet they are direct in their own way, at a different scale from the car routes.

The idea could be similar at Revere, with separate yet shared routes for bicyclists, cars, pedestrians, the T, joggers, roller skaters and supply vehicles. There should be places for cars to briefly speed along the beach relatively fast without overwhelming the other. In their different rhythms, speeds, and needs for stopping, designers can find ways to harmonize their passings and conections, while their coexistance allows for multiple and different experiences of the same place.

The Automobile

Most redevelopment plans for Revere Beach would probably involve breaking down the sweep of auto circulation. In considering this option, though, it is important to recognize the advantages and sense of life that cars can and do bring to Revere. First, they bring a dynamic experience to the site, allowing people to practically fly with the curve itself. It is hard to know if they could be improved upon in that respect. The oceanside drive is part of a promendade for cars that stretches the much further than Revere Beach.

Revere is part of a movement, a car dance that begins where anyone starts from in making a trip to Revere. It most clearly has to do with the experience of riding along the Revere Beach Parkway, though, an MDC road that is part of a system of parklways throughout Boston. As such, it follows waterways and their coordinated parks, winding its way toward the coast.

The land is low, and while not mountainous, has a few mounds and hills alnong the way. One senses many rises and falls as though, the closer one gets to the beach, one is driving over pavement that has been laid over oceanside dunes. These hills are combined with the movement set up by the "parkway", a winding, rhythmic pleasure route made for the car promenade, for movement. Exaggerating this sense of movement further are the numerous "rotaries" or traffic circles enroute, designed to allow for turning without breaking the flow.

meeting sky, (over hood of car...). Coming down over it, there is a great surprise - a view of the ocean spreads out across our path.We are still moving with the rhythm of the park drives, and this arrival sequence fits it well. Rather than being stopped now, at the beach, there is a rotary right there, spinning you around, and one is allowed to continue on, along the beach.

It seems at first that the route ends at Revere Beach. Yet here it is actually only transformed, for it is allowed to continue along the beach. It is almost as though Broad Sound is merely the center of a one more rotary along the route ... to somewhere/nowhere, just on.

The final approach to the beach is quite well-orchestrated. Just before arrival, there is a last incline, passing over what feels like the final dune. As one goes up, you almost momentarily blinded; you can see nothing but road

Drivers, and passengers as well, have great views. Their priority status there insures at least that the beach is public, democratic to the extent that all Americans can own cars. As a promenade, too, it is very successful. People love to see and be seen in their cars. In winter or at night, roads mean freedom to those in cars. And when parked, they have private ocean views. At Revere Beach, cars also serve as private restaurant booths with a beach view for the popular take out restaurants.

So, it is important to save at least some possibilities for these car-related activities - speeding along the edge of the beach, promenading in one's car, and parking with an ocean view. It has been allowed at Revere Beach for so long, and is so enjoyable that to banish the car is to lose touch with a lot of potential, history and spirit.

Sketch of Boston's Storrow Drive and "Esplanade" (park and promenade along the river) from Memorial Drive in Cambridge, an MDC road.

The automobile's drawbacks are also obvious. Roads cut one side off from the other and they take over environments. In summer, parking spaces become sweltering wastelands of murderous heat, the traffic is unending and the air is poisonous. A lucky few have choice parking spaces; the others must trek from large lots far from the beach. While traffic is stopped, the road created is a relatively humane environment - people are in control - but when traffic moves as it "should", the pedestrian world feels as though it is not supposed to be.

It is important to allow the ocean to have a realm of its own, different from summer to winter, not complelely contained and controlled by urban effects - paving and buildings. The strip at Revere Beach runs the entire length, always nearly the same distance from the waters edge. It denies the dynamic character of sandy beaches. If it were slightly removed, separated by dunes, sand or trees, that movement could be tolerated and the natural power of the sea could be appreciated even more. The road could have a positive role as well - it could act as a form of registration, against which changes could be measured.

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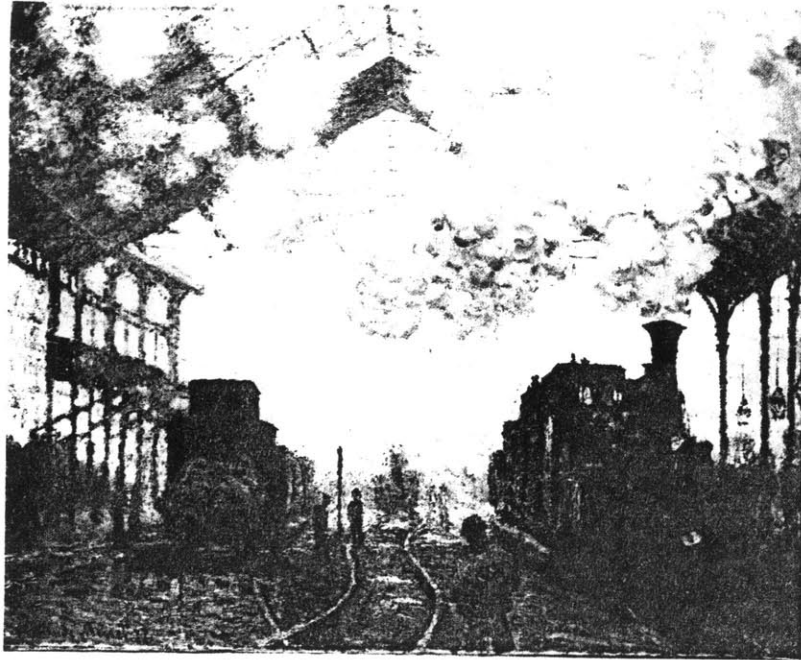
The MBTA at Revere Beach

It is the MBTA which makes Revere the most easily reached beach in Boston, practically an extended piece of the city. Compared to an aquaduct, though, which also brings the city far out into its environs and can be seen no matter how far from its destination, the T does not register this connection so visibly. At Revere, its tracks lie low in the trough separating beach from town; stations, too, are not apparent. When they can be identified, they add little to a sense of continuity, for they are similar only in their ugliness.

The design of the MBTA's presence at Revere Beach could demonstrate and dramatize the beach's public and urban accessibility. Currently, emerging from the train at the "Revere Beach" stop and, moreso, at "Wonderland", one has little impression of the ocean and beach so near. If the tracks or even the station were raised high above so that on arrival passengers were immediately presented with Revere's magnificent wide views of the sand, the sea and the developments nearby, Boston's unique proximity to sandy beaches would be made instantly apparent and just emerging from the train would be exciting.

One gets this kind of dramatic view at the Charles Street station in Boston, a stop on the Red Line. After crossing the Charles River, with views of the entire esplande, Back Bay and Cambridge, the train arrives at its stop, high above the river banks and the traffic. Coming from the other direction, the train emerges from underground, practically crashing through the rooftops of Boston's oldest brick buildings, and remaining at that height as it reaches the stop. Views are panoramic and magnificent.

The fact that there are two MBTA stations within the site is another quality which reinforces its length. The "Revere Beach" station is close both to the beach and to the downtown connector, Shirley Avenue. It is in the most urban section of the site. Its partner, the "Wonderland" station, is in the flatlands further north, six hundred yards from the beach, and surrounded by parking lots and weeds.

The new design can emphasize the continuity of the MBTA line within the site with consistencies between its stations, as well as contrasts between them. For example, roofs and layouts may be similar, but, because one has marshes to which it should relate and the other is practically on the beach, they should connect differently to the ground - the platform of one might be concrete (of the sand) while the other might be wood, on stilts high above the wet ground.

When the T is made more apparent at Revere, it will become a major influence at the site. While development should address the large scale of the completely visible curve, it will always be a small relative to the MBTA system. Even as a whole, it will be only a pearl on a long necklace, connected to a long string of other offerings.

Image of sand and boardwalk immediately greeting one on arrival at Revere Beach.

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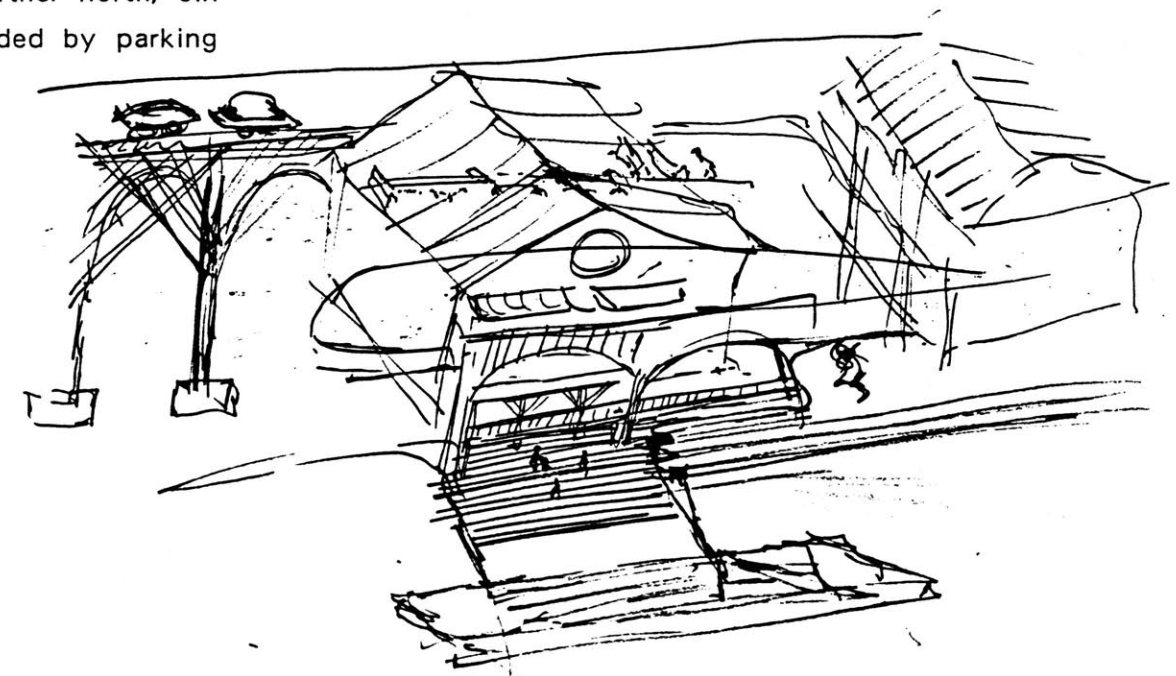
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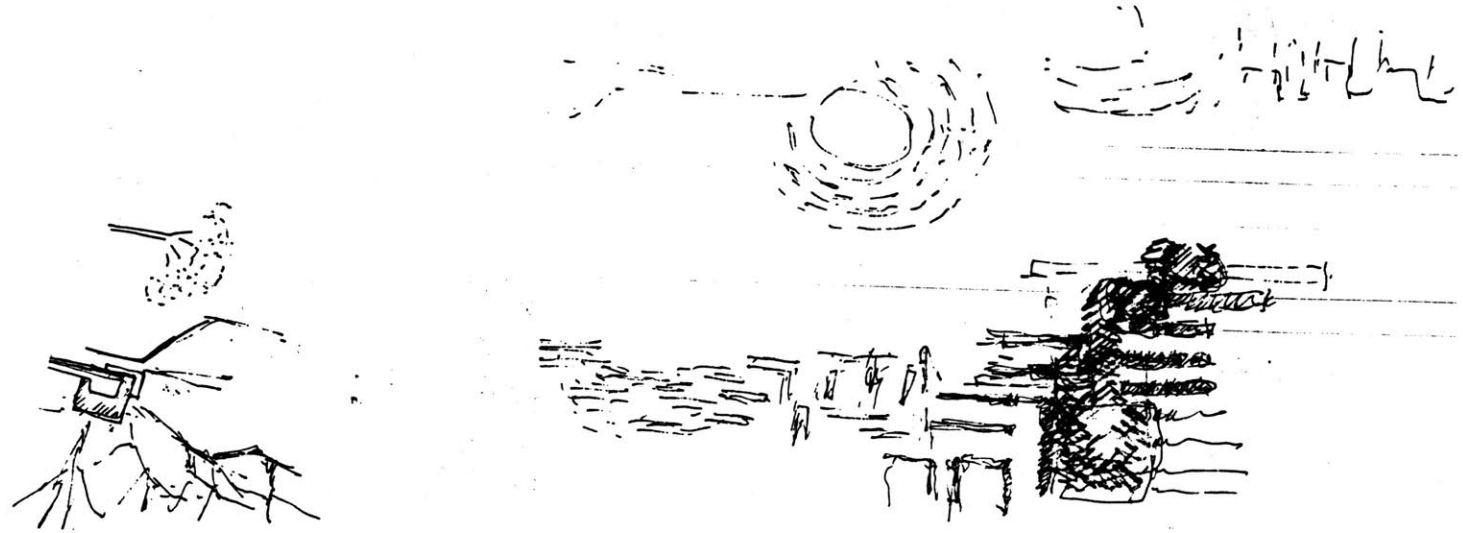
Notebook sketches on building forms that express the idea of terminus.

As the last stop on the MBTA's Blue Line, the final destination along the MDC's automobile parkway system (although the road actually continues), and the last place of wild dunes and sandy beaches before Boston, Revere plays the role of terminus. It also represents the historical edge of the city. In terms of form, Revere Beach is the location of major changes in direction, in scale and orientaion.

Architectural and formal implications are numerous. Buildings and paths could radiate from the last T station, the single most obvious terminal point, either directly, linerarly, or with concentric circles. Reflecting the conjunction of other parameters including sun path, wind, and circulation, they rings would no longer be even, but would be swayed, reflecting the interaction. The idea of terminus would be enriched as it incorporates these other issues as well - that of the curve of the beach, reciprocity - is it Revere that is the focus or Boston, the T or the beach, movement or destination - and the automobile experience of rotary/non-terminus.

One note: If the subway terminates in a natural environment, it should be surrounded by the wild, so that people would not be concentrated in a small area. Too much traffic would force civilization, and would be contrary to the aims for wilderness. A great deal of demolition must take place at Revere before the T can be considered to end in a wild environment.

An Orienting Architecture

Architecture - form and materials - can be designed to orient people, geographically and seasonally, to a site. A building intended for a beach edge site should be so clearly designed for that environment that there is no question, from within the buildings or from the outside, that one is near the ocean, the sand, and the marshes.

There are many ways to be so site specific. The design can copy similar developments, partially or completely. Or it can copy from the generic approaches, from traditional styles. Some building styles have been associated with oceanside architecture for so long that the buildings and the place have become connected in our perceptions. Eventually, seeing either a building in that style or the ocean leads one to assume that the other is nearby.

Rather than imitating traditional approaches, a new design could also take a more fundamental attitude toward the site. If a building language is developed to address this site's social and natural context, it will probably result in an environment that shares some qualities with the traditional approach, but is fresher and more specifically tied to Revere Beach. Because the result is an independent answer to the same questions which led to the development of the earlier style, it will seem only superficially different, fundamentally part of a longer tradition. A design which copies the traditional style, on the other hand, might seem superficially similar, but might lack the fundamental sensitivity to the environment that led to the style's original developement.

Many of the larger social and formal issues affecting Revere Beach's redevelopment were discussed earlier, mostly in terms of site form. The smaller scale of building forms and elements are also affected by these questions, but more clearly relate to environmental factors, especially in such varied and extreme weather conditions as those at Revere Beach. The buildings designed for Revere Beach respond clearly to these forces, including the wind, the sun, and character of the ground.

While an appropriate architecture is reassuring and important, if it sets a strong enough background, transformations can occur within it and to it. It is exciting and equally orienting to see very out-of-context things in a generally consistent environment and to see parts of a building or environment change while others remain. Many love beaches, warehouse districts, or market areas off-season or off-hours for these reasons. Seaside architecture typically is very dynamic, changing its character to respond to seasonal demands by remaining fundamentally the same but using a few elements in new ways. Shutters, for example, make a building that is open to summer breezes and views virtually or completely impenetrable off season. Awnings and banners and shades can practically transform a building from season to season, while being actually minor elements. Paint can do the same: whitewash in the summer can shield from the heat of the sun while dark colors can make a warmer interior in the winter. Beach architecture, because the buildings are not used year-round, can take much different forms from styles in the same climate that are.

The awnings on this St. Paul, Minnesota, building, brightly colored, making us aware of the sun and the. similarities between the way we and buildings relate to it. As we sheild our eyes and faces from the sun, the building shades its windows. We also are affected by the building's response to the sun, for awnings protect those on the outside as well as those within the building from the sun. In fact, they create various communities by associating groups under the same shade.

Rugosa Rose or "Salt Spray" Rose is a hardy shrub growing in dense mounds.

Beach Plum is another indigenous seashore plant

Revere Beach is particularly windy site, especially during the evenings and winter. Traditional styles of beachside architecture have developed dynamic ways to control the wind, using shutters and screens to block the undesirable gusts while still letting the cooling summer breezes through. Any new development at Revere Beach also should respond to the wind, perhaps reinterpreting traditional methods, materials, and scales.

The materials of the site should contain seasonal elements as well - shutters, banners, tent structures, shades. While the winter colors may be subtle forms of grey, in summer they should come alive. Even in winter, however, there are many colors within greys that can be used. Purples and blues of the water.

Other materials to build with include living things. Small birch trees are already found on the site, mostly in the low-lying areas. Seaside plants include beach rose and beach plum, found to be very hardy even in harsh environments. And in those areas in which there is a significant amount of sand above the high water mark, dune grasses should be planted and protected.

The following sections discusses those environmental factors to which any new construction must respond.

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Physical Context

Revere's context is as much defined by environmental factors - the ground's consistency, the degree of solar exposure and the sun's path, wind direction and strength of gusts, etc. as by contextual issues of access and regional competitors. They affect the architectural scale as well as urban design. So, as buildings in the Alps echo the slopes of the peaks in their roofs, the stone ledges in their balconies and terraces, there will be, in redeveloping Revere, similar references derived from the interactions of the ground, the sun and the wind.

Consider the movement of the sun. The generous crescent beach faces primarily east to the rising sun. The
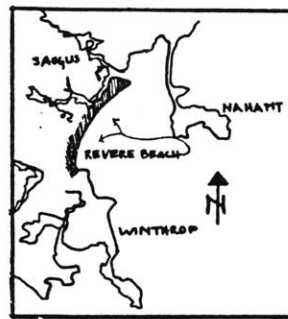
Revere runs primarily north-south.

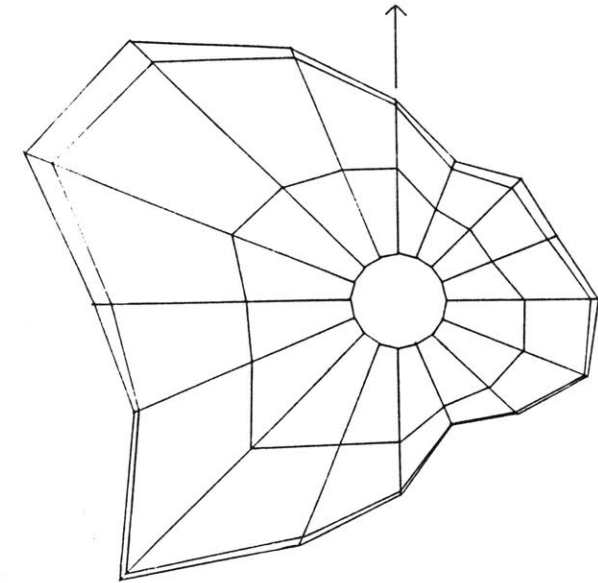site's "spine" - transit system tracks and automotive roadways, overall mass of the site - moves north-south. In Boston, at 42 degrees north latitude, the sun reaches a high of 71 degrees at summer noon, a low noon in winter of 24 degrees. The site's solar exposure is perfect; only the future development, itself, will inhibit solar gain. Glare from morning reflections off the water and afternoon sunsets may pose problems for those orientations.
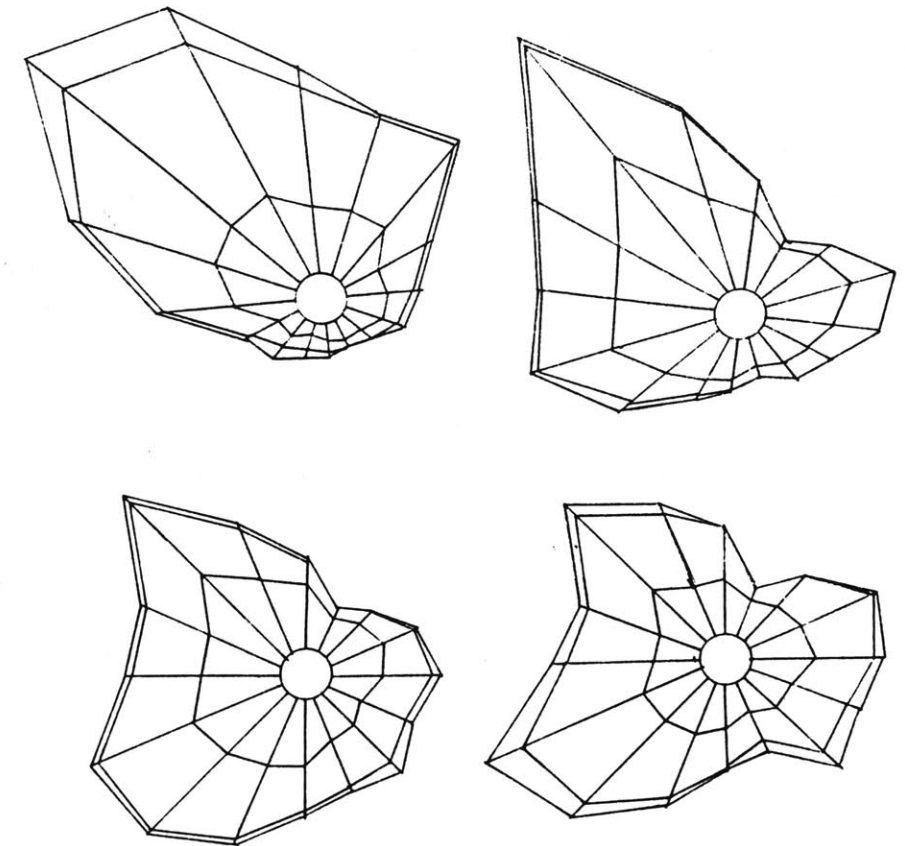
Wind is a major consideration here, as is the case when a site is surrounded by open space, as Revere Beach is, and is even more threatening when the empty lot stretches thousands of miles. At beaches, wind currents vary tremendously throughout the day and from season to season. They have given rise to generic building types, elements of which will suggest a direction for development

at Revere. Buildings here should be low and relatively continuous among themselves and with the ground with many kinds of moving and stationary shutters and filters.

Building forms which also reflect this power of nature are often very enclosed spaces. However, Revere's situation is also that of an extension of the urban framework, so the form should address the overlapping of these two conceptions. There are also ways for building form to learn from the success of cars at the current Revere Beach, designed as small, temporal privacies perched within the large public world. They may blend into the natural world, as though shaped by its forces directly, as though hidden in the dunes. Or as a piece of the man-made world, they may be based in nature, but poking up above its wind-shorn top.

Wind roses. These figures diagram the intensity and direction of wind affecting the site. Measurements were taken at Logan Airport, where wind conditions are similar to those at Revere. Clockwise, starting at top: Year's total, January, April, July, and October.

Revere's Nature as Former Barrier Island

While I always appreciated the vaguely hilly, curvy approach to Revere, it took many times of redrawing the site before I realized that Revere Beach had been, very long ago, a barrier island. This character is well obscured now by buildings and paving and landfill, but with a little distance, the dynamics become clear. And since the island has been artificially retained, it must be continually protected, and sometimes at increasing rates. For, as Revere continually realizes as it pays for this expensive upkeep, the ocean edge is not meant to be permanently fixed.

One can see in contour maps and photographs of the site model Revere Beach's specific barrier beach heritage. Currently, there is a 7-12 feet difference in elevation between the roadway which runs along the beach, atop the former barrier beach, and a gulf which separates it from the "mainland". Originally, the oceanside piece of land, covered with dunes, would have served as a breakwater for the more permanent land beyond, called the "primary dune"; there would have often been water separating the two pieces of land.

That is not the case today, at least not throughout. Currently , the MBTA tracks lie in the southern portion of this trough; extensive sewerage systems have been installed to drain stormwaters from the area. Further north, the area has been somewhat less developed, though not paved, it has mostly been filled with land. The familiar barrier beach phenomenon of an inland marsh is vaguely suggested here: what might be considered tentacles of the Saugus Marsh begin just north of where the T tracks end.

The depression is crossed, frequently at the southern end, by bridges, and with a few causeways further north. While they cross primarily land, one actually
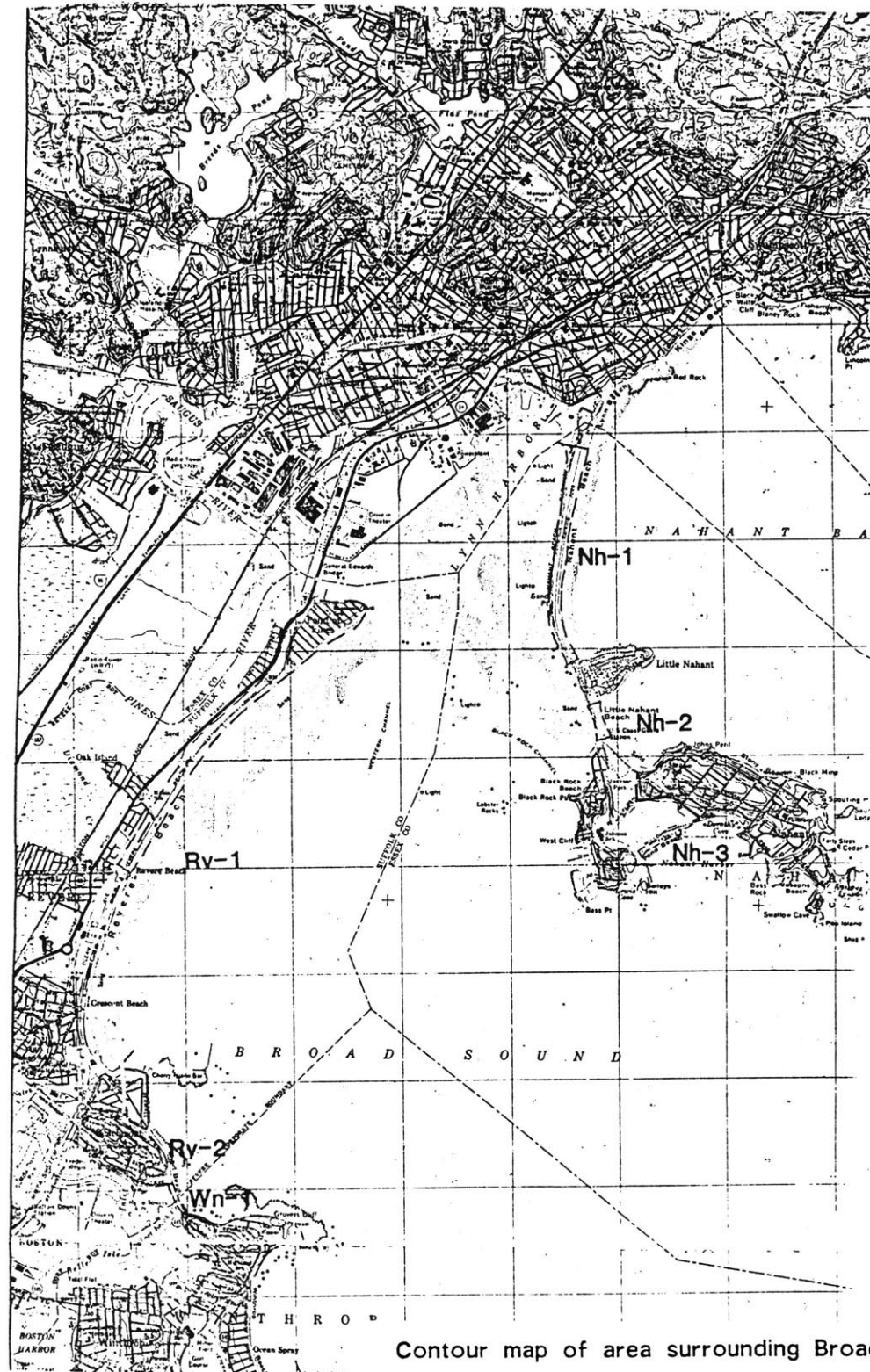
Contour map of area surrounding Broad Sound.

can clearly sense (especially having drawn these contours sillions of times) the crossing of a marsh. Houses and commercial now establishments cluster along these routes, for they signify the highest ground, the best areas for construction.

The barrier beach character could generate a particular sense of the site if it were reclaimed and intensified. This would not be difficult, for the real nature of the land, sand and water, lies just under the paved surfaces of seemingly endless parking lots and streets. Surely it could re-emerge, in enough places to give a sense of itself.

Revere Beach separates the salt marsh from the ocean waters.
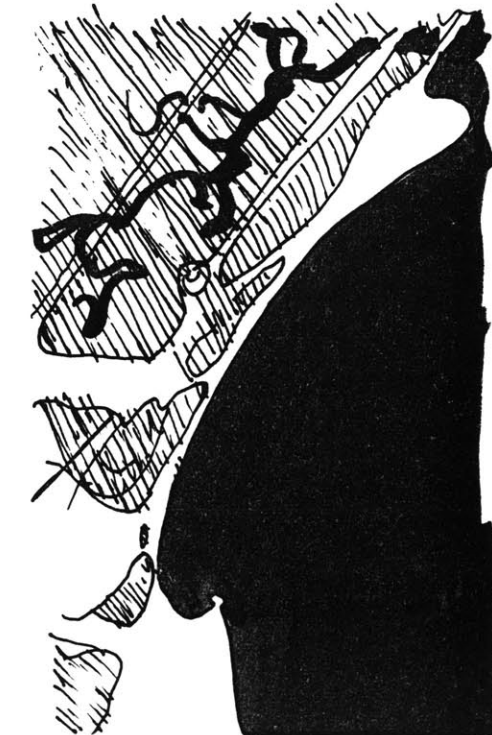
More on Barrier Island Dynamics

Lying between salt marsh and ocean, Revere Beach, in its natural state, was one of the most northern examples of a familar east coast phenomenon. Originally, it was a barrier island. Its wide tidal flats stretched primarily north-south. Sometimes it was above water, other times not. It served as a seasonal reservoir of sand for the primary inland dune, the mainland, and also protected the mainland from storm-generated waves by cutting their force before they reached the mainland. Barrier islands often appear more stable than they are, similar to inland dunes but with better views, and often become valuable real estate. However, in times of trouble, buildings in these primary dunes do not respond well to the barrier beach's real nature, allowing severe waves to break over itself, or to seasonally migrate, cyclically accreting and losing its sands, breadth, and height. Developments along the east coast have not kept this transitory nature in mind. Everywhere, people have tried to stabilize the sands. Often, dangers posed by building on these barrier islands have been simply ignored, resulting in construction which destroys their fragile yet effective protective dunes. Disaster often ensues.

For example, in 1962 a hurricane destroyed the New Jersey shore. Many seaside homes, originally built upon the dunes to capture dramatic views of the ocean, were wiped away. By resting upon them, these houses introduced people and care into the fragile dune world; slowly, the dune grasses were overwhelmed by development and the dunes destroyed. Most of the destruction occurred where dunes were removed. Thereafter, coastal develpment was much more sensitive to natural processes: Dunes were maintained along the barrier beaches, using snow fences and vegetation with only minimal penetrations for beach access.

Beaches lose sand to the sea during winter, building up sea based sand bars, and accrete sand during the summer. They also lose sand laterally, to neighboring beaches, due to what is called littoral drift. A few means have traditionally been used to counter these forces and stabilize beach sands: groins or jetties, perpendicular extensions from the beach, prevent sand from moving laterally along the beach, parallel barriers keep the sand from being carried out to sea, and sea walls retain the sand foundations on which roads and buildings have been constructed.

All of these measures are expensive attempts to fight the strong forces of the sea, and they evince a refusal to accept, appreciate, and respect the sea, or nature itself, for that matter. They never succeed. The sea edge cannot be stabilized. Besides technical problems, the ecosystem of the coast depends upon the changes. As some areas gain, others lose.

Design of the land should be loose enough that individual areas recognize their part in a larger world so that loss of sand is not disastrous, but merely a change. This may argue for Revere Beach becoming a barrier island again. However, there may be less extreme solutions, and ways of preserving this terribly valuable piece of sandy beach. Among them may be the construction of new barrier island forms...
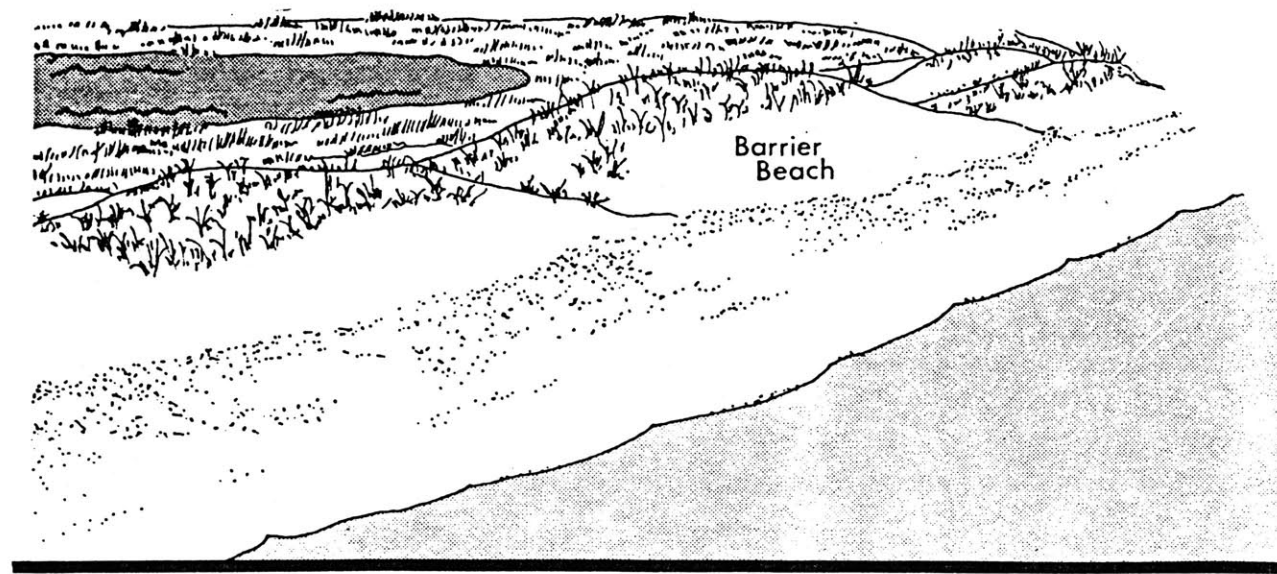
Barrier Beach

Diagram of a barrier beach, whose sands are held in place by a fragile cover of dune grasses.

Program

The next sections present perspectives on the uses of the site.

A Public Program

Revere Beach is a valuable regional resource and should be developed to remain in the public domain. Given that, its backdrop has to be defined, as well as the nature of its edges and its extent. Parking lots? Nature? Private housing? Along with urban and architectural form, the issue is one of program and ownership.

Revere Beach has the size and scope to serve many different types of users simultaneously. City beaches typically serve the poor, young and old, i.e. those most dependent on public transportation. But because of its proximity and its valuable amenities, it can provide a unique addition to the middle class and more wealthy urban worlds as well. As a metropolitan area amenity, it should meet the needs of Boston dwellers, but locals, as well, should be able to use their beach easily and comfortably.

Throughout the nation's history, many have thought about how to keep beaches and coasts public. Others have devised ways to prevent that from happening. Rumor has it that Robert Moses, New York's great highway builder and the man responsible for the creation of Jones Beach, made certain that the new overpasses would be designed just a few inches lower than the height of public buses; the beach thus became the domain only of those who drove private cars.

Frederick Law Olmsted, on the other hand, tried to insure that the lands he worked with would be open to all. At Yosemite, he tried to legally stipulate that all hotels granted licenses in the new park would be required to provide rooms for the poor, gratis. And it is common knowledge that theories about the social benefits of mixing classes in play and promenade were fundamental to his design for New York's Central Park.

These examples are just two manifestations of a rather haphazard national tradition of public lands, impressive to some, but minor when viewed in other contexts. In Scandinavia, for example, the "All Man's Right" provides for free passage through and overnight stays by anyone, on another's land. And even this liberal ancient freedom is small when considered in light of the Native American and Australian aboriginal ways of life which do not even include "owning" land.

All our beaches are legally public; they cannot be owned below the "high water mark", i.e. all that is exposed at low tide. Access to the beach need not be granted, however, so people are often unable to exercise even that right. Perhaps the American frontier spirit is responsible for such limited protections of the public lands; the notion of unlimited space may have led government not to interfere but to let market forces govern.
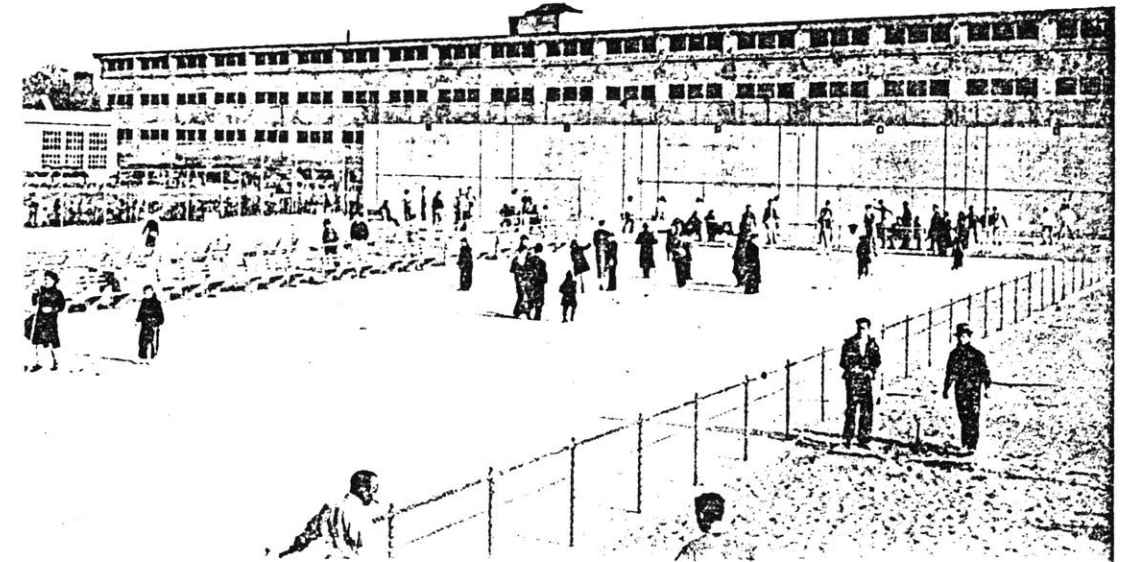
Institutionalized recreation at Coney Island, New York.

Ecosystems

One other concept which was used in programming the site which connected public recreational sites with the working pieces of a civic infrastructure. Historically, that has often been done. For example, near sources of municipal water, at reservoirs and dams, one often finds recreational facilities. Near city halls and public libraries, one often finds parks. Too often today, public facilities are isolated from the action of society, or are supposed to be generated solely by commercial facilities.

This study examined briefly some special elements of the beach environment and to devise ways in which uses would produce their own energy and take care of their sewage on site. These elments of civic life could be the foundation for the project's program and form, associating recreation with these other collective endeavors.

In terms of producing energy, passive solar design should be incorporated. Harnessing the wind is less feasible. Wind generators are unwieldy, and dangerous to date. Codes require a great deal of space around the generators in case they tip. It is possible, too, that there is not enough wind at Revere to justify taking up such valuable space with them. If they were set out to sea a little, in order to be in touch with higher wind speeds, too much energy would be lost in transporting it back to land. Also, many consider modern windmills ugly.

Another possibility is to integrate at least the final stages of natural water treatment facilities on the site. Boston's metropolitan area certainly could use them, and they can be exciting, educational and aesthetically pleasing. There might be a way to combine the idea of floating islands with effluent treatment using aquatic plants such as water hyacinth. These islands could also integrate tide-driven fountains into the plan, a good way to aerate the water in its final stages of purification. For form, one should consult the environmental artist, Christo (he was responsible for California's "Running Fence" and for wrapping Miami's islands in bright pink skirts).

If islands are introduced into the Sound for sand retention, they might also make use of the tidal energy. The drawback to this is that the water may become stale. However, if the ocean water is clean enough to be used for swimming, it should not be a problem in this case. The means for obtaining the energy also could be unsightly and dangerous to swimmers.

Early site diagram examining islands as part of a ring of facilities belonging to the municipal infrastructure.
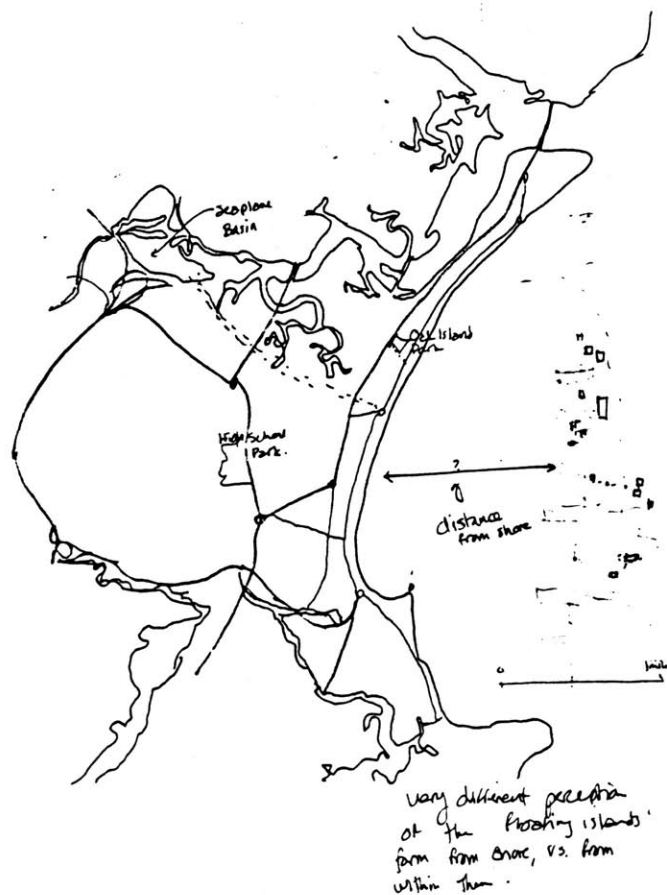
The "Central Lagoon" at Wonderland. Revere Beach can be seen in the background.
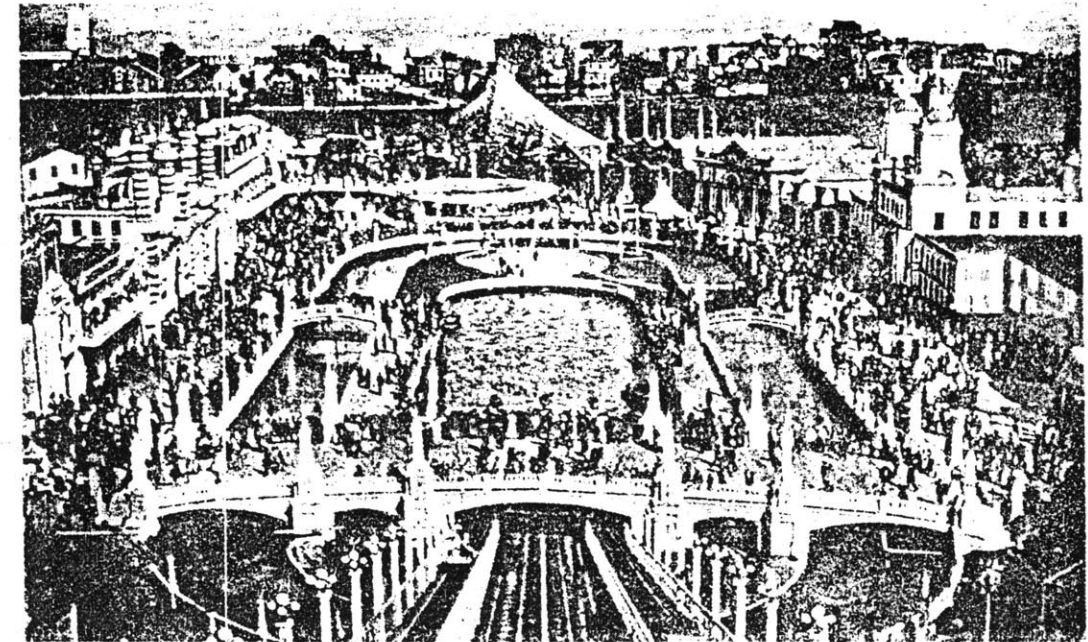
Historical Precedents

Another perspective used in developing a program is to look to the past and to similar places. Revere, in its heyday until the 1940's, like many other beach resorts, offered amusement parks. Today, however, ferris wheels and spook houses are obsolete. What are the amusements and recreation types of today, and how do they relate to the beach? Health facilities are one. Art galleries are perhaps another.

Early in this century, Revere Beach also was home to a small version of Disneyland, called "Wonderland", which featured not only amusements, but exhibited modern technology's latest products. As a promenade passing through workplaces and amphitheaters, this site could similarly display our culture's sources of pride.

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Participation

Part of the problem with our shopping centers and even the renovated sections of our cities is that they are primarily geared toward the spectator. The activity responsible for creating these environments is all "behind the scenes", hidden from view. Perpetuating these divisions between producers and consumers, hiding the former for the sake of the latter, creates dull, homogenized environments. Revere Beach can have a much brighter future if it involves more of its users, both the transient and the more permanently connected, as participants. Various combinations of uses were considered for their abilities to further this goal.

Revere Beach's new development first has to provide a variety of spaces. In order for them to be used, people need to feel that these places belong to them. This is also the responsibility of the architecture.
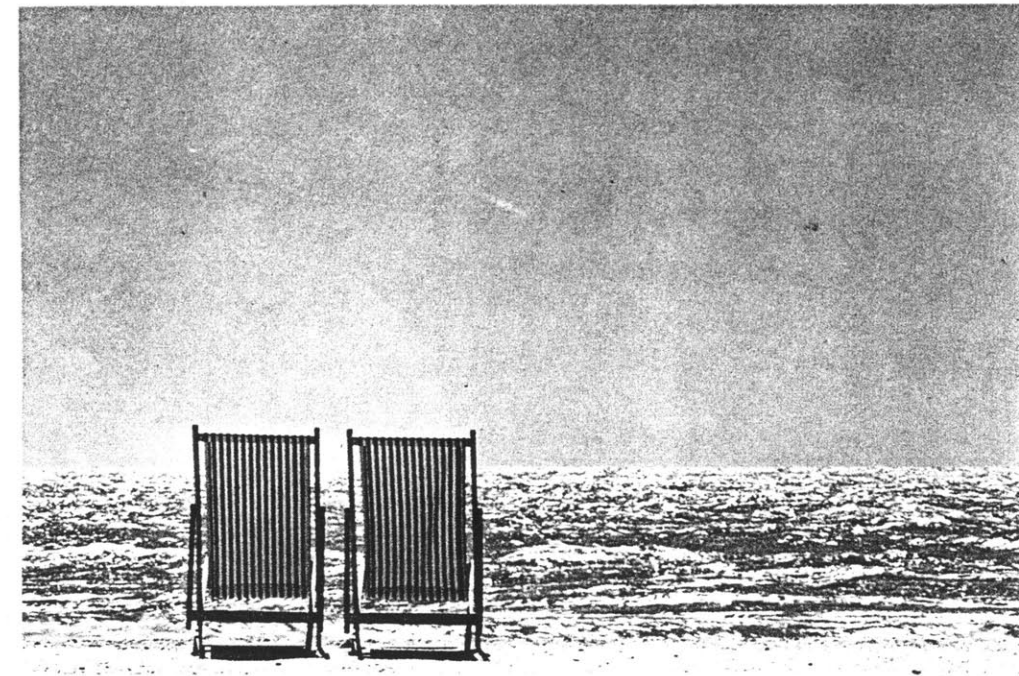
The Crate and Barrel Catalogue. Spring and Summer 1982.

Basic Elements

Some user needs are quite simple and will remain a demand no matter what sort of development takes place at Revere. Those arriving by car will have certain needs, different from those reaching the site by other means. For summer recreation, automobile parking near the beach is required (the Revere Planning Department estimates that 1900 cars will visit the site on a summer Saturday or Sunday by the year 1990). Commuters will want to park near the MBTA stations on weekdays, while those frequenting bars, restaurants and places of evening entertainment can use these spaces at night. Beach use will vary, from summer to winter, daytime to evening.

Even a minimal plan for the beach should provide bath houses: changing rooms and toilets, and because many will be traveling by mass transit and from urban areas, showers and lockers. Automobile parking and routes leading toward it should be shaded during the summer, yet not gloomy and damp during the winter. Depending upon the program, Revere Beach will have to accomodate a daily influx of people who work in offices on the boardwalk, as well as those who come to use professional and commercial services. Others, of course, will come for entertainment, to eat, swim and sunbathe, walk, bathe, feed birds, read, shop...

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Meeting the most obvious needs for the site is one way to assemble a set of uses. There are other, more abstract means. As with form, one of the intentions of the program development stage is to develop a set of uses that awaken the users' sense of place, conveying to them, without a doubt, that they are where they are - at a beach, in Massachusetts, and at this public crescent.

Also like defining form, there are many ways to arrive at this perception. They include discerning activities that echo the nature of the beach, reinforce it, contradict it, transform it, extend it. Lists can be developed that define possible program elements in terms of their relation to the traditionally developed ocean edges:

Very Appropriate Elements
Bath houses
Nature-awareness activities
Souvenir shops
Sun shade stores
Refreshment stands
Public scenes

Slightly or Extremely Contradictory
or Transforming Elements
Urban forms meeting the marshes
Urban walks
Museums and galleries
Workplaces
Hospitals and clinics
Libraries
Schools
Skating rinks
Outdoor concert halls
Elegant restaurants
Private places within a very public world

Beach as amphitheater
Path along the beach being diverted into development, re-emerging in marshes
Swimming pools, hot tubs, fountains
Private tennis courts and outdoor sports above the development

Other uses for the site, which may fit into many of these categories, include the following:

Amusement park: floating? Land based? At edge? Spread throughout site?
Miniature golf
Marina
Bowling
Energy generators and plant
Windmills
Glassworks
Fish hatchery
Water purification plant
Post Office
Boat yards
Car parking
Floating walkways/docks
Daycare centers -> evening schools
Offices/galleries/studios
Commercial space
Health center: medicine/fitness/food/hospital
Bars
Theater
Horse stables
Helicopter landing
Hotel

Access: helicopter   skates
        MBTA   rowboat
        train   car
        taxi   bus
        yacht   run
        canoe   walk
        bike
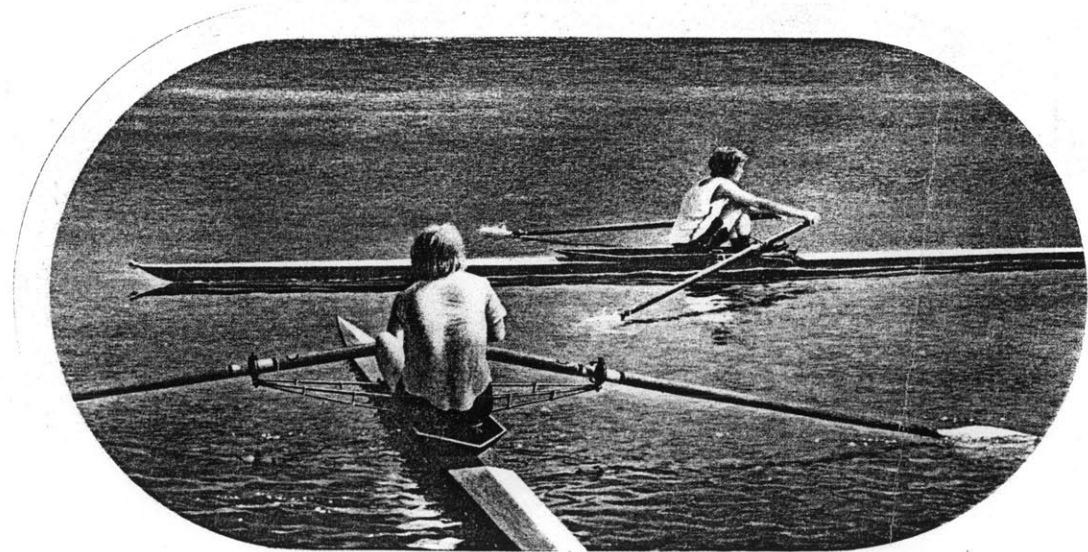
"The Scullers", Painting by Tom Forrestall, Nova Scotian Artist.

Photo by Arthur Burcheil

36

Mixed use

A combination of these elements, the unusual as well as the familar, the touristic with the permanent, was the basis for the project's program. Such mixed uses raised the question of the validity of combining so many different users within the same site. The notion has become widely accepted as a means to ensure safety and liveliness, yet it would not have led to many of our most popular environments. Like Wall Street, shipyards and market areas, they are those which undergo noticeable transitions between occupied and empty times, and are clearly designed for a single use (although they may later be renovated and used for new purposes). That they are so enlivened by their inhabitation is exciting, because it gives one a feeling for the importance of people and their works. Mixed-use developments have obvious benefits, but must be wary of becoming homogenous and characterless.

Ownership

Ownership is a complex issue. Government ownership or the development with leased spaces would not guarantee that the development would feel "public". The word describes a relative notion, and connotes accessibility of a place to many strangers. One way to open up the site to more than daily users but to businesses and services as well is to regulate who may operate from the development. Perhaps the developement could meet the needs of those unable to find commercial space elsewhere. Indeed, it may be seen as an urban national park, one whose businesses have a visible public interest, and are therefore selected for that reason. Just as Wonderland by the Sea featured baby incubators, perhaps this site could display worker self-management, allowing only collectively managed businesses to operate here. Or, perhaps, the development could be cooperatively run, by the consumers, the beach users with input from the businesses. Or the establishment could guarantee turnover, so as to incubate new businesses, and to make the spaces available to all.

THE DESIGN

The following chapter discusses one design for Revere Beach, incorporating the perspectives discussed earlier.

Scale of the Project

For this project, the site was developed at a much larger scale than Revere can currently contemplate, and this opportunity allowed for more options than that town's planning agency can currently entertain. For example, while expensive condominiums are not likely in small numbers currently at Revere, with an extensive development rehabilitating the entire shore might make the idea more attractive. It is hard to plan in the context of a void, so with the rest of Revere Beach remaining so undeveloped, it is difficult to project small designs optimistically - they are born into too uncertain an environment.

The development designed for this thesis is large enough to generate a new context in which things which are inconceivable today for Revere Beach could occur. It was important that the new development have a strong character so that it relates to the beach as a whole. Private areas and a variety of building types and uses were integrated within a larger continuity.

With enough consistency generated, parts of the development could be spread out along the beach but still feel a part of the whole, although non-built spaces, other developments and neighborhoods are interspersed among these pieces. This was begun within the bounds of the project's site, but the use of this principle could be extended along the length of the peninsula and into the water at the southern boundary of the site. Claiming the ends of the curve as well as places along its span will help to generate the feeling that the public realm stretches the entire length of the curve. There should be a clear

destination, perhaps a hotel, library, or gallery - a piece of development - at the northernmost end, the tip of the Point of Pines. Bike paths and pedestrian promenades can continue the length of the peninsula, along with pavillions and tent structures for changing in the open air and sun. Parts of the development do, at some distance, blend into the dunes and salt marshes behind in color and in having little height variation, but this could be carried even further, north of the site, so that "the chief beauty of the reservation, namely the long unbroken sweep of the curving beach" (Charles Eliot) can be seen.

Atlantic City, New Jersey

Retained from the Existing Site

Originally, the site chosen for this project was the strip bounded by the MBTA tracks and the ocean, from Eliot Circle a mile and a half north to Oak Island Boulevard. As the work ensued, the scope broadened to include the whole Revere Beach peninsula, but the primary focus still was on the original area. Of the buildings in this area, almost none were worth retaining in a design of this scale. The only buildings saved, then, from the existing site were two six-story apartment buildings near the southern end of the site and a nursing home at the northern border, across Oak Island Boulevard from Kelly's.
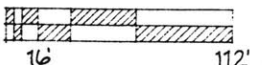
While underdeveloped, Revere has not been left alone; besides the few buildings, most of the rest of the area is paved. There are houses, yet the residential neighborhoods seem out of place, too small within an open and empty environment. Still, no natural dunes remain. A recent renovation of the Metropolitan Distric Commission property (Eliot Circle to Revere Street) involved planting grass in the beachside park. Because it seems out of place this part of the redesign will not be retained, although a restoration of historic pavillions and police station will kept.

This site was initially chosen for its barrenness, so clearing out the few remaining buildings was always the intent. The surrounding context, though, was considered important and was left as is. It consists of primarily residential communities to the north and south and commercial areas along Shirley Street (and, to a much smaller degree, on the other feeder streets from the town of Revere), and Wonderland Dog track to the west. Parking lots which cover hundreds of acres just west of the site were retained, but modified. The existing street pattern within the site was ignored, and most of Revere's other roads were kept; some of of the connections between the site and its surroundings were changed.

SITE PLAN

500'

1ST LEVEL
2ND LEVEL } BOARDWALK

CONCRETE PROMENADE
BICYCLE ROUTE

40
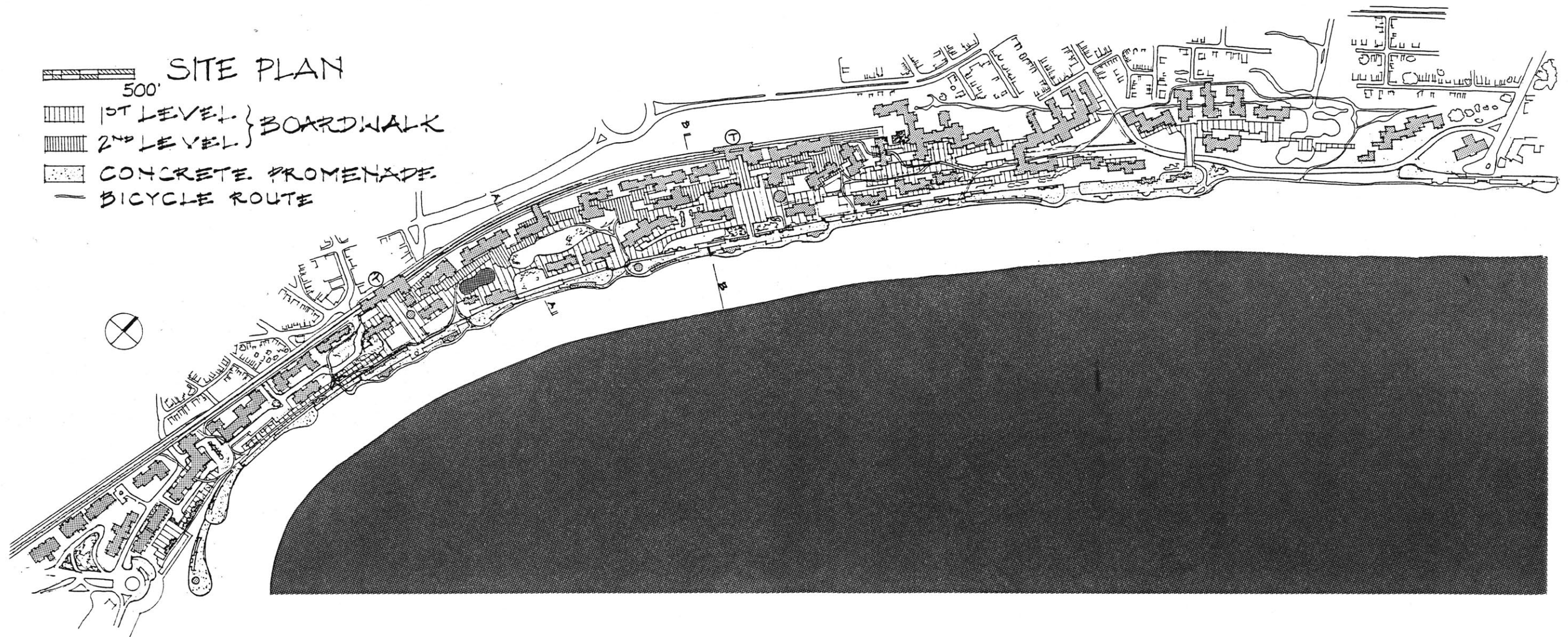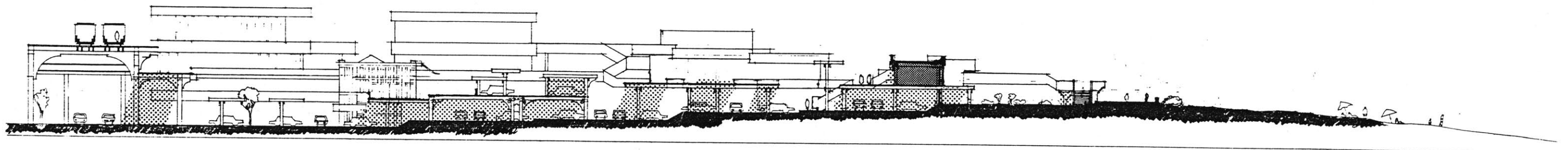
SECTION A-A

16'   112'

SECTION B-3

16' 112'

42
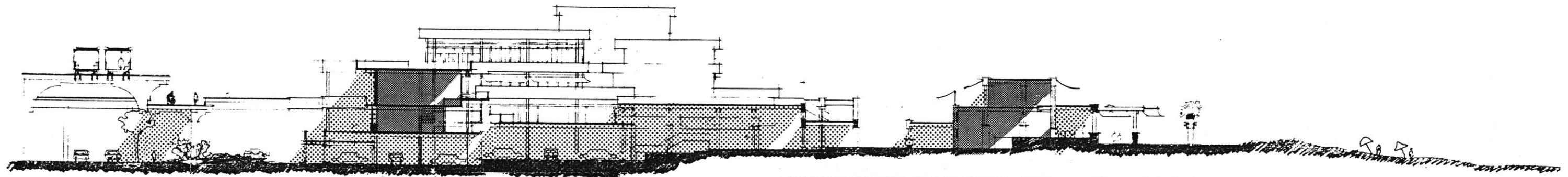
Site Program

The planned new development, from Eliot Circle to Oak Island Boulevard, has the following program:
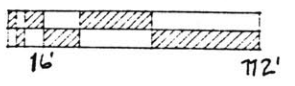
- Residential development south of Revere Beach MBTA station, ending with a small hotel just below the Shirley Street bridge from Revere. Some small commercial areas within the housing.

- Much more intense commercial development at Shirley Street and north to Revere Street, most concentrated between the two MBTA stations, along the beach and the inner pathway. It consists of groupings of shops and restaurants, and night time entertainment - bars and clubs, perhaps with movie theaters - with enclaves of offices in their midst. Above some are penthouse residences; above others, restaurants. The latter are located along lateral public promenades, related to the length of the beach. Residences are accessed less continuously and publicly, from the rear and along paths perpendicular to the beach.

SITE PLAN

500'
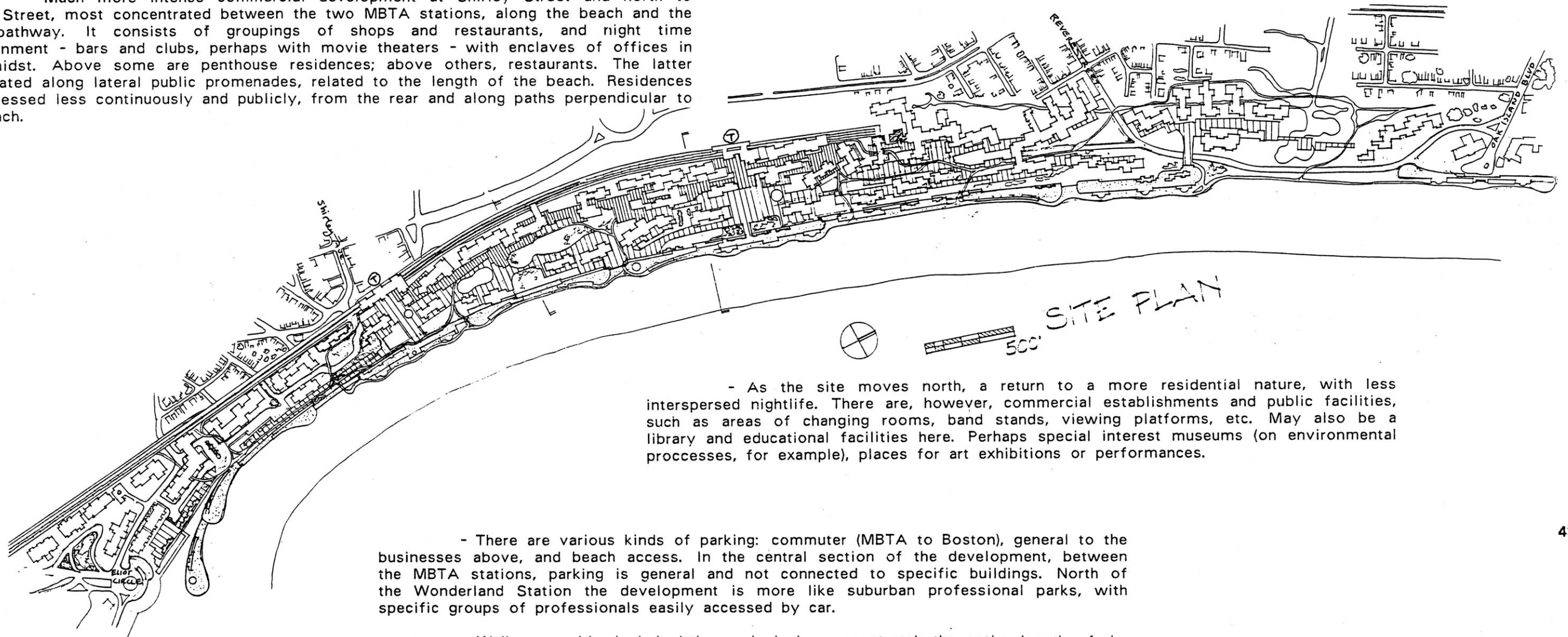
- As the site moves north, a return to a more residential nature, with less interspersed nightlife. There are, however, commercial establishments and public facilities, such as areas of changing rooms, band stands, viewing platforms, etc. May also be a library and educational facilities here. Perhaps special interest museums (on environmental proccesses, for example), places for art exhibitions or performances.

- There are various kinds of parking: commuter (MBTA to Boston), general to the businesses above, and beach access. In the central section of the development, between the MBTA stations, parking is general and not connected to specific buildings. North of the Wonderland Station the development is more like suburban professional parks, with specific groups of professionals easily accessed by car.

- Walkways with shaded sitting and picnic areas stretch the entire length of the beach.

The Site as Promenade

The development incorporated aspects of Boston's various promenades. Other than those already described, the inland part of the site was to be organized around various paths which wind through the buildings and open space, able to look into user communities of various sorts. Portions of the development can be grouped according to use. Health, for example, could be one category, parts of which would benefit by exposure to the public. It can physically gather together health clinics - doctors, dentists, birth control centers, community education centers, chiropractors with gyms, spas, and herb garden centers. In a way, such a health center could be the amusement park of today. Other collections may group designers, artists and craftspeople around various exhibition spaces and theaters. The path is designed to take advantage of these possibilities and to help create such occurrances.

The public, though usually welcomed can also be excluded at times. Like the wind, it can be funnelled through a specific route, or barricaded with huge shutters or a drawbridge as in ancient fortresses or castles.

Because workplaces need to relate to each other differently from the way they meet the public, their organization is separate from the path. Often, workspaces surround a court, in view of the pedestrians. At other times, the courts are more private, or viewed only by faster moving, less invasive traffic. In most cases, those who pass through the development on their way to beaches or rooftop restaurants should be exposed to what actually goes on inside businesses. By seeing directly into laboratories, kitchens, law libraries and computer rooms, rather than just lobbies, formerly disconnected members of our culture can gain new understandings about the workings of business. Children, especially, who pass through day after day to the beach, will have an unusual chance to see more of their actual options.

Building Image: Architectural Elements and Form

   The site changes character radically as one moves
from south to north. The new design echoes this progression
in form and materials and express a continuity which unifies
the beachfront and reflects its large scale.

   The site is developed to expose its nature as a
barrier island form, or a barrier peninsula. Moving north from
Eliot Circle, connections between it at the mainland undergo a
progression from bridges to causeway. One crosses under
these bridges when arriving by MBTA, rising up gradually to
the boardwalk height for the station. The pattern of the
train's emergence from a denser urban fabric to openness
and height is meant to share some of the qualities of the
Red Line route from Park Station to Charles Street and the
Longfellow Bridge, and is echoed in turn by the re-emergence
of the under-the-boardwalk road at this new development
just north of the end of the MBTA tracks themselves.

   Like the MBTA there, the buildings at the southern
end of the site are more closely tied to the street pattern
more contained and more urban. In the less developed areas,
the buildings themselves are the most built part of their
environments.

   Different sections of the beach were designed to
reflect their locations, relative to the urban context, the
curve of the beach and the rest of the development. Two
which have not been discussed already are the central and
bottom sections of the curve.
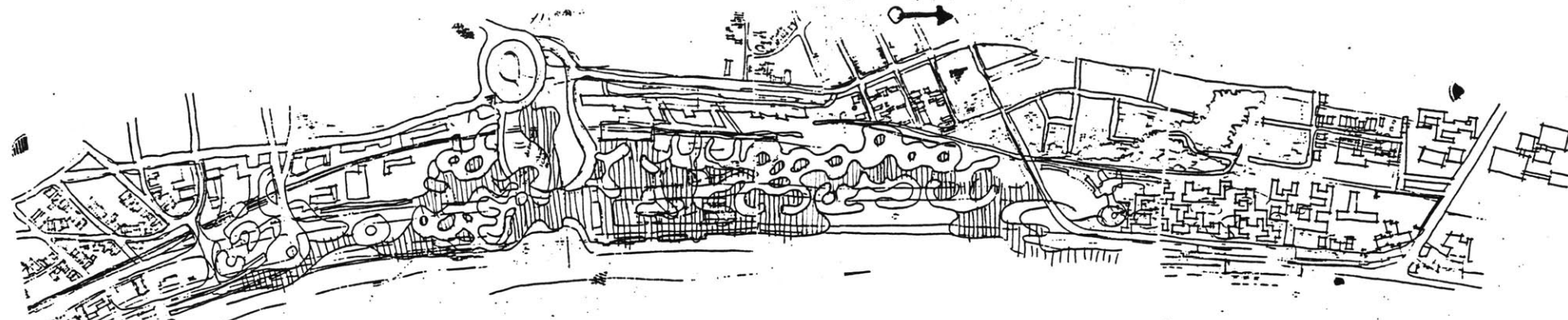
Early site plan, with curvilinear midsection and rectilinear buildings further north. While their form varied, other aspects - materials, color, scale - were meant to be similar, so that they would, together, appear continuous.
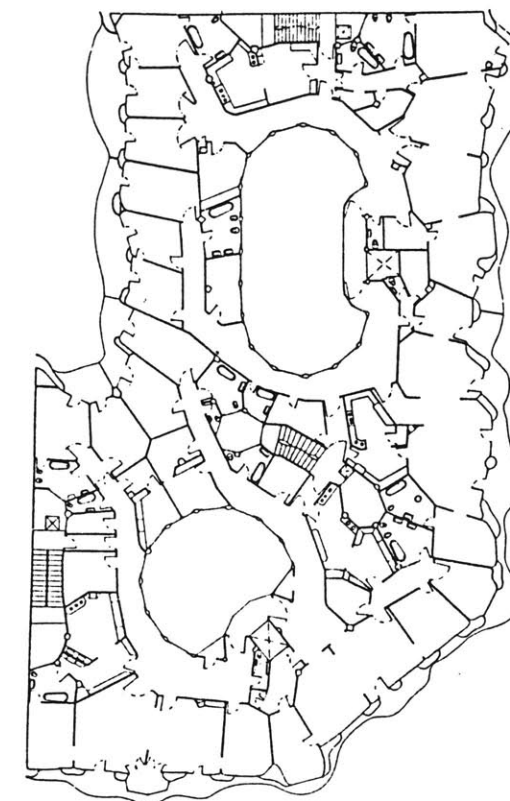
Plan of Antonio Gaudi's Casa Mila, Barcelona, 1906-10

Central Section of the Beach

Many curvilinear designs were sketched for the central section of the beach which drew on precedents and various other factors. Their origins highlight aspects of later designs and include the following:

- Repeating the patterns of beach sand shaped by water and wind. Sometimes these patterns are expressed in different colors of sand, naturally separated by their different physical properties.

- Posing an alternative to the orthogonality of forms constrained by an urban grid, such as the section of the development near Shirley Street, while also reflecting the absence of streets and the original lowland character in the surrounding context.

- Drawing on other less visible natural forms from this environment, including shell and coral forms, and the huddling shape necessary for wind and storm protection.

- Recalling historical precedents, including curvilinear seaside resorts, fairs, amusement park buildings, as well as elements of buildings and pavillions already on the site.

- Serving as a way to simultaneously enclose and allow the widest vistas out (concave and convex at once, depending on the focus in question).

- Appearing as objects floating on the sand, clearly different from it, so that the sand remains the most obvious and powerful element.

- Echoing of the elements of the "Crescent Beach" expressed earlier.

Eventually, the use of the curve in a new design was modified, although it continued to be expressed. In the final plan, space within the development, usually shielded from the ocean behind one row of buildings, recalls the gentle curve of the beach. Other elements do so as well, especially the more plastic concrete forms of the beach promenade. The east-west progression from exposed to enclosed spaces also reflects the need to echo the natural shelter-seeking form of the curve.

Intensification at
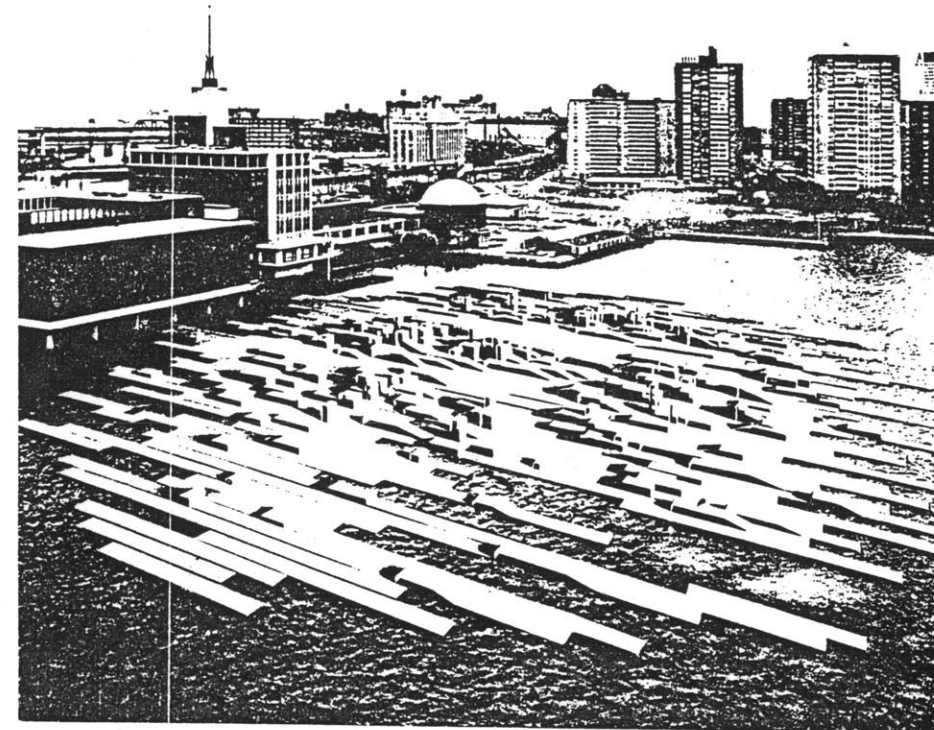southern end of the site.

Sketch of pier echoing cove

The Bottom of the Site

The southern end of the curved beach (or its beginning), is where the curve is tightest. At this section of coast, for some reason, the ocean currents and forces have not straightened the edge out. So, it is a containment of sorts, the place where pebbles and sand are gathered. Currently, it is the calmest and most civilized part of the beach. In this design, it became the site for many kinds of similarly quiet, contemplative activities.

Possibilities included transforming the experience of watching the tide rise and fall into an event by designing something against which the water's change in height would be dramatized. A rainbow scultpture, for example, could expose more of its colors as the tide falls. It could be reversed as well, with more colors showing the more the tide rises.

Michio Ihara design for the
Charles River.

Optic or holographic sculptures could also be used, as could something like this sculpture by Michio Ihara, planned for the Charles River Basin. Ihara's plan defines the water in the same increments as the built structure, focusing on the "pieces of water" as well as the "pieces of the sculpture". Indeed, it is a sculpture of water.

This example of reciprocity, making what was background primary, and vice versa, was a model for the rest of the site, whether the "background" material was sand, land, marsh, or water.

East - West Progression

Buildings express their positions on the site also in terms of their distance from the sea or the salt marsh. The photographs on this page trace a progression from solid, horizontal and sand-related forms to that of the other side of the island, to the vertical, stick-like reedy marshes. The building forms of the new development echo this transition. Concrete, because it is made from sand, is the material closest to the sand beach. Wood, like reeds and the thin birch trees that grow back from the beach, belongs primarily to that back world.
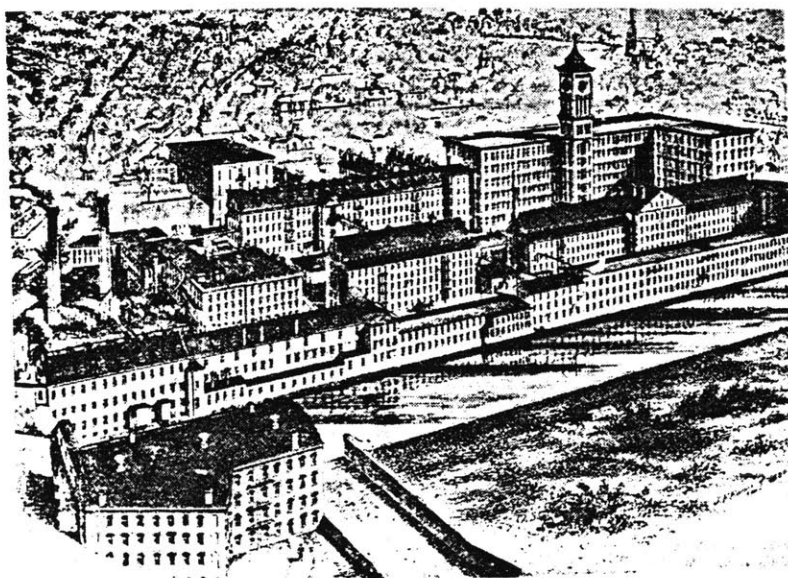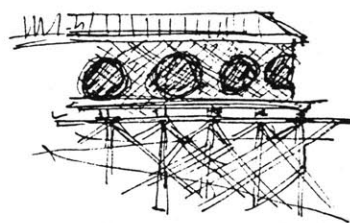
Progression: from sand to continuous surface solidity, to continuous screens to the vertical of weeds, reeds and piers of the back marsh.
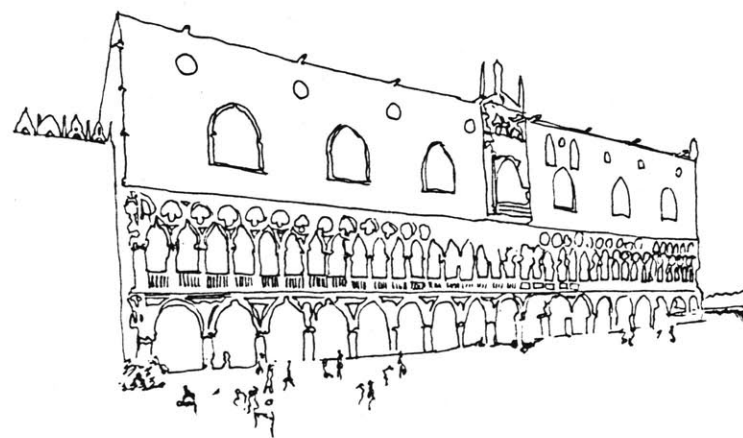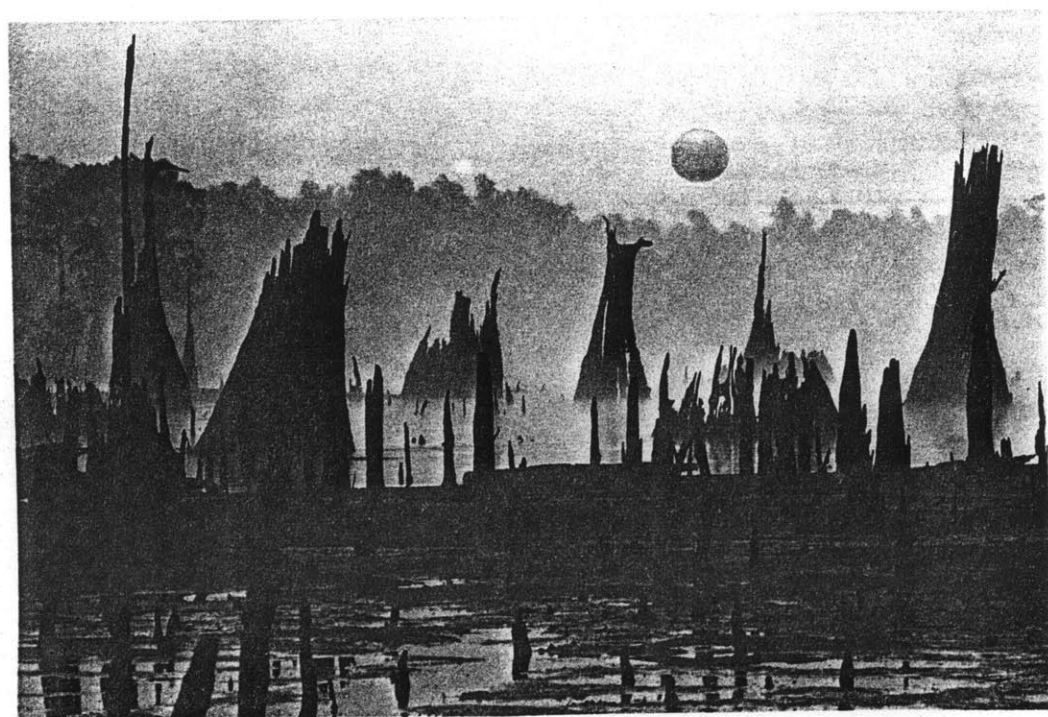
More on Form and Materials

Rather than piles and piers at the beach edge, concrete lines the sand.

"Piling is objectionably ugly, and it is hardly a safe mode of construction in so exposed a situation. Pile wharves, or even sea walls, extending any considerable distance seaward from the top of the beach, would also greatly mar the appearance of the beach as a whole and as seen from the driveway, depending as this does on the grand simplicity of the long and continuous concave curve. Accordingly, we have rejected entirely the idea of piling and the idea of protruding any seawalls further than 60 feet seaward from the proposed edge of the promenade." Charles Eliot, 1896

Concrete, though disparaged by many, can be a very pleasant material if it is understood and used well. Like stone, it can represent permanence and public use. In this design it is also used to terrace the ground and to establish the largest scale elements that, with time, can be filled in, added to, chiseled out. The forms the concrete takes suggest that; it is not uniform. Its multiple levels and a dimensions suggest ways to add to and reinterpret it. The concrete dimensions are large enough for intricate patterns of wood and tile to be contained within it, rugs laid upon or into it. At times, the concrete itself becomes like a rug, a material laid down just for people to walk upon.

The horizontal also comes from the beach. Accordingly, in the new design, horizonal expanses and concrete represent the public realm. When concrete winds its way through the development, it will recall the public promenade.

At the beach's edge, the current concrete promenade, as overrun by cars and unpleasantly high above the sand as it is, is lowered onto the sand and returned to pedestrian use. It runs the length of the beach development. Sometimes it borders the sand only on one side, with parking or platforms on the other. But in a few places, notably at its termination in the southern end of the site, the concrete route lies in the sand, almost completely surrounded by the beach.

Wooden boardwalk connects sandy beach with parking area on other side of salt marsh. **North shore scene.**

Materials in the development undergo a progression as their distance from the ocean increases. Further west, piers, made either from wood or concrete in wood form, start the association with the reeds and weeds of the back side of a barrier beach. These pile structures are always in contrast to the concrete and lateral elements meeting the ocean world of sand and smooth expanse of the sea.

The move away from the beach is also to an increasingly protective world, where people and buildings are clustered together in communities. In these coves and enclaves, the pedestrian winds between businesses which also look in upon one another. Above them, in key areas (near the beach, close to and between the subway stations and at automobile entrances) there is a return of the public promenade, a rooftop string of restaurants and evening entertainment. Together, they once again capture the expanse of the sea, sunset views of Boston, and the feeling of being above the protective dunes following the beach.
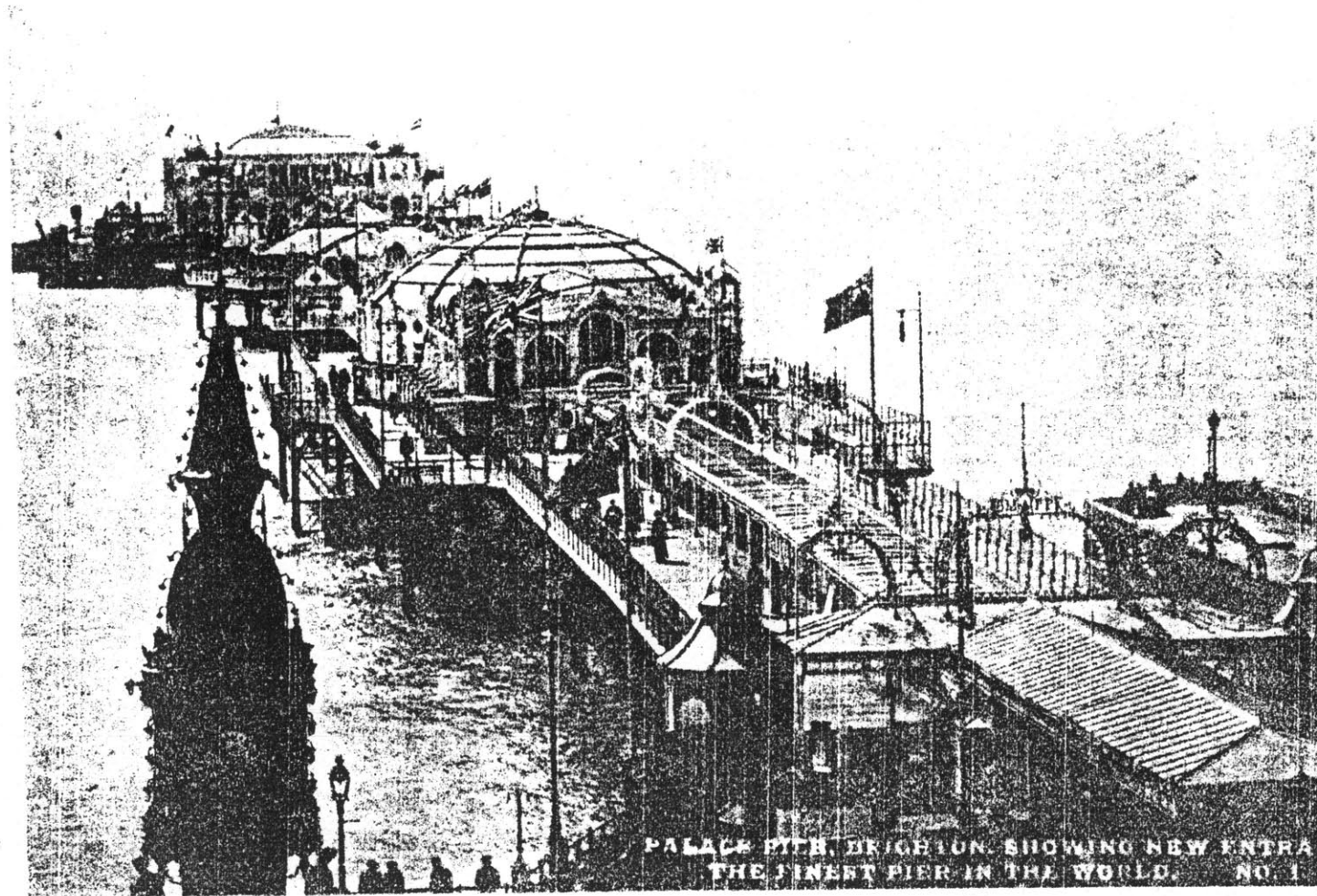
Brighton, England

The piers of Brighton, England and Atlantic City were references for the wooden structures of this design. Revere Beach's new pier, however, rises from the sand, not the sea. Rather than run perpendicular to it, the structure's main direction parallels the beach.

Just as piers are related to floats, and floats to islands, Revere Beach's new platforms - some with buildings upon them, others with only walkways - are imagined as merely resting upon the sand, or making islands within it. They are dense in the main section of the development, between Revere Beach station and the northern re-emergence of the automobile road. Platforms become more independent at either end of the site. To the south, the concrete promenade makes virtual islands in the sand. To the north, the platforms float in the reeds. Ths experience could be made more dramatic if a pier, followed by islands or floats, continued Revere Beach's curve into the water.
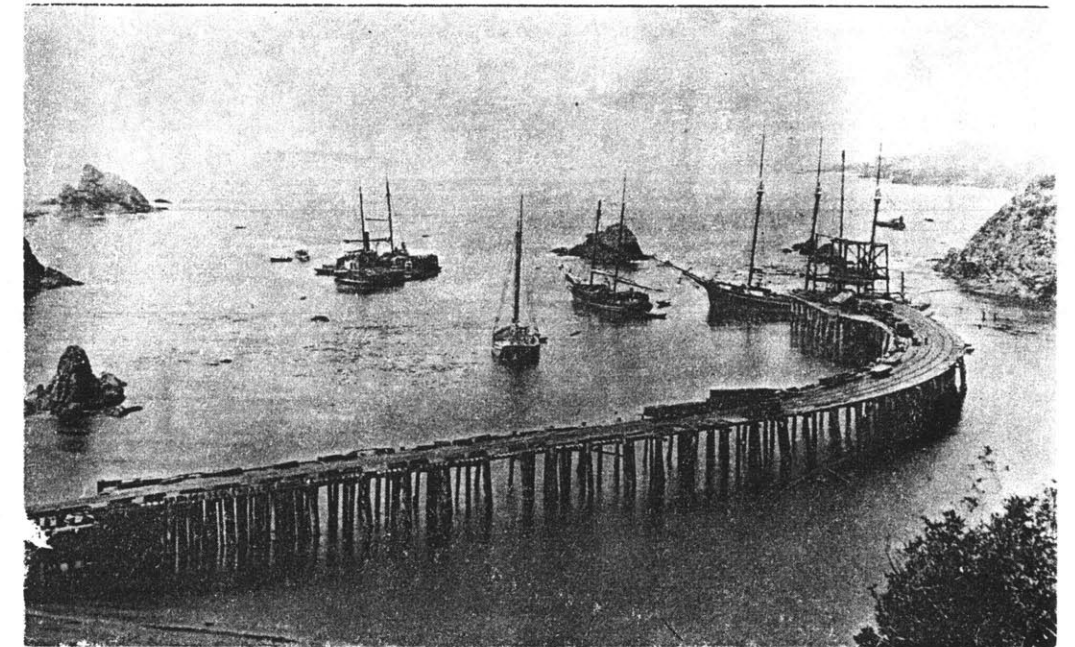
Mendocino, California

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Coexistence of Potentially Conflicting Routes

The development is a promenade of many sorts, with views of workplaces, the beach and open spaces wtihin the new community. Automobile routes are separate from those for pedestrians, bicyclists, and the MBTA, although they often share some distances or structures for part of their routes. The ways in which these paths intersect and relate to one other are based on the different speeds of their user's movement. Unlike the way suburban sidewalks are perpetually attached to the automobile's roads, if these different routes do come into contact, it is for a short distance, whenone is simply crossing another, or a level difference separates them. For example, the MBTA, which is elevated, cuts a major route across the land. Riding on its figurative coat tails is an adjoining path for bicycles and pedestrians (see site sections). The latter path is lower, like a curb or a gutter, along a continuous aquaduct-like structure.

Bicycle paths share this same relationship with the new concrete promenade which runs along the beach. Beginning a few hundred feet north of Eliot Circle, the path crosses the mile-and-a-half pedestrian route and runs along the outside of this overlook, just a step above the sand.

When the bicycle path moves through the boardwalk, within the development, it is a step lower than the pedestrians, as though it is in a trough. This depression may be at the edge of a walkway, or splitting two pieces of a platform. At sharp turns, the path can rise to platform level to allow for the handicapped to easily cross, but generally the bicycle path will go down below to allow for crossings above.

There are no same-level intersections of automobile roads, and pedestrian and bicycle paths. While they may be coordinated at times, or parallel, they are separated by at least a small level chage. When a perpendicular crossing is necessary, they are on different levels, so there is still no conflict. But the level differences are not only to avoid another means of transportation; they result from different intrinsic needs and rhythms, not only the need to cross another line of movement. They are in contrast to pedestrian bridges built over highways, for example, where the person on foot certainly loses, having to climb all the way up, then all the way down, simply to cross the road. In this development there is always a more positive and substantial reason to a remain on each level, or even on the bridge itself.
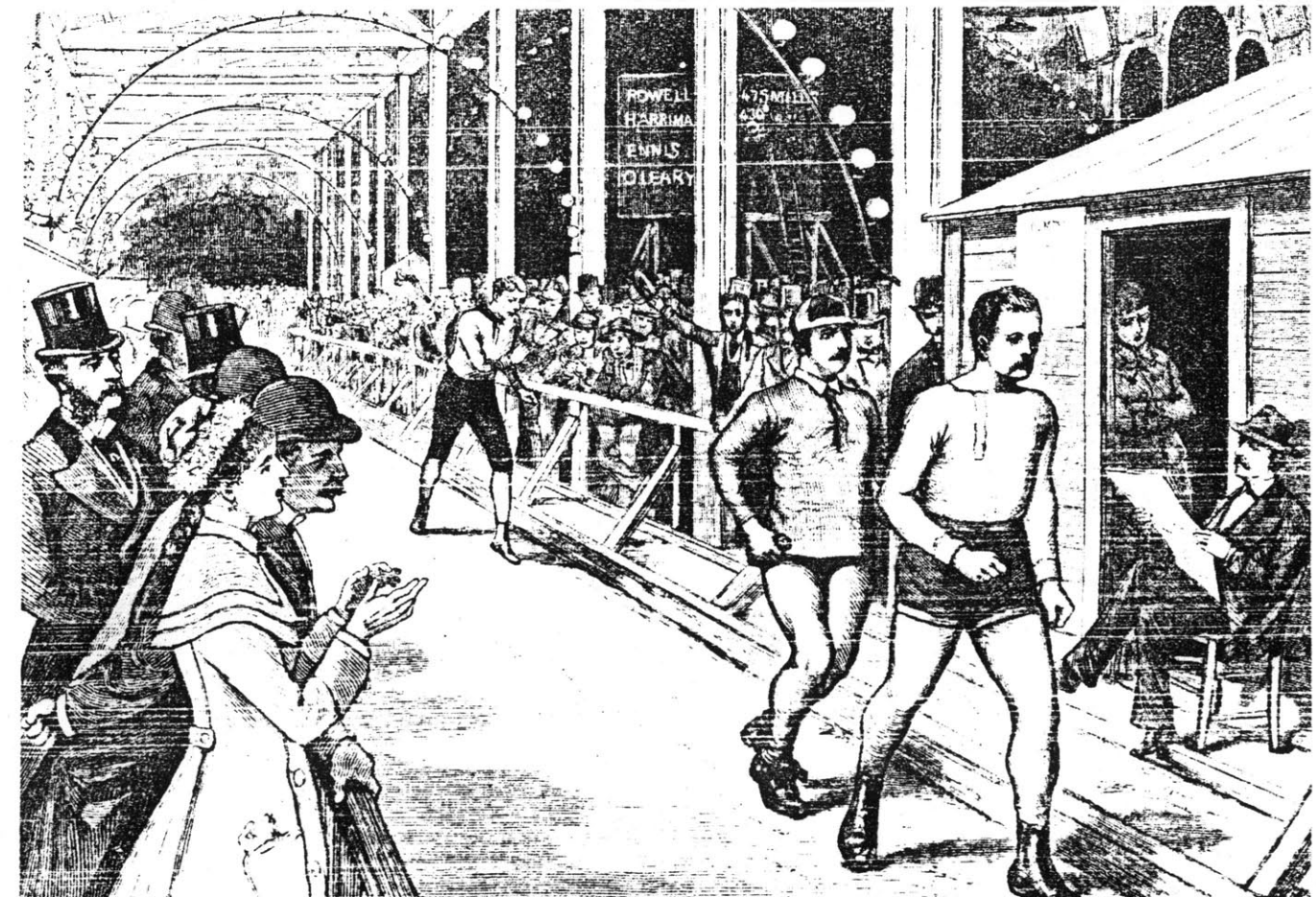
Automobiles

Automobiles and roads raised a recurring question: compromise or integrate? How could cars be kept on the site without being objectionable? Could stretches of road remain within the site for speeding with the beach, others with oceanside parking places for stationary private views from the front seat of one's own car? Some of the implicit goals of these questions were relatively easy to reach.

There are three or four kinds of automobile and road behavior on this site. To the south, between Eliot Circle and the Revere Beach MBTA station, the street pattern is quite regular. Roads are above-ground, bordered by apartment houses. The design merely increases the current density of these buildings and reshapes the roads. These streets are in one-block lengths, with parallel parking. After this distance, the road doglegs, giving views toward the beach. There are major beach drop-offs and parking areas at either end of each section. The parking is shaded and grouped, either facing the beach or along short boulevards running perpendicular to the beach.

The MBTA tracks begin their incline south of the site, so that roads approaching the beach pass under it. Between the subway stations and in the more built up parts of the site the cars should be relegated to a service role, primarily. Here, the road is no longer visible in great lengths, for it runs beneath a series of platforms, walkways and buildings, a multi-level environment above. The road is often open to above, but it has become a minor entity relative to the world above. Essentially, it provides access to parking and beach drop-off points, but has little scenic connection here to the ocean.

However, at the northern end of the site, the platform development peters out, into the marshes to the rear of the site, sand or dunes to the front, and residences beyond. Where the development turns its immediate focus somewhat, from the ocean to the back, to the world of milkweeds and salt marshes, the automobile can momentarily emerge and take a place close to the sea edge. Here the concrete promenade along the sand becomes much thinner, and the beachfront bicycle path echoes the movement of the car route. Separated here from the concrete pedestrian path, to which it had been joined further south, it runs through the dunes and the sand, north to the remaining pieces of development.

Passing marsh-oriented parts of the development on its left, the speedway nature of the automobile route is ended when its turns onto Oak Ocean Boulevard, at the northern end of the site. There is another perpendicular drop-off place at this beach road's last entrance/exit to/from the ocean scene.

There are other ways automobiles were made less objectionable. In places not specifically designed for them, autos are less overwhelming. So, the surrounding site, currently vast areas of parking lots, could be easily improved and used for overflow parking. Simply removing strips of asphalt from between rows of cars, and providing pleasant shaded and perhaps raised walks from the beachside development to the parking areas would transform these lots. Rather than being a sea of pavement, cars will be afloat on platforms in the salt marshes, resting in them without destroying them.

Rather than surrounding the development as in suburban shopping centers, the parking areas, themselves, are surrounded by commerce. This same principle was responsible for designing some two-level parking in the main part of the development.

Some aspects of the current Revere Beach use of cars were retained, but slightly transformed. The private viewing afforded by ones own car in a beachfront parking spot were kept in some places, and the notion also was applied to other elements in the new design. For example, there were groupings of lockers along the beach, placed like those parked cars, outlooks for people from spots of temporary ownership, owning by occupying. Also, the architecture itself, being so continuous and vast, was meant to suggest a large infrastructure, one accessible in time and turnover, to all. Just like today's Revere Beach parking spaces, it has anarchistic elements.

Beach Stabilization

Jetties do not prevent beach erosion. They merely keep sand from drifting on to neighboring sites. Breakwaters are slightly more effective, and are the principle behind constructing new barrier islands.

Revere would like to stabilize its beach, for its annual sand loss is expensive. This design incorporated a few methods to try to overcome the problem. However, because barrier islands are migratory by nature, little can be done to keep the beach where land development would like it to be.

A partial solution calls for a new "barrier island" of man-made or discarded materials. MDC engineer Henry Higgett suggests building it from rubber tires. The idea is appealing, for it lets people, land and activities inhabit the water, but it has drawbacks as well. First, there are practical problems with mitigating the tides. And constructing something so determined to challenge the ocean's power and balance also threatens the wild character of the sea edge. However, if the way it is done highlights this tension, it could both respect and show humility toward nature.

The new development at Revere also positions buildings and promenades much further back (75 - 100 feet) from the sea edge than the current sea wall to create a sand beach wide enough to support natural protective mechanisms including dune grasses and bushes. Finally, it accepts the U. S. Army Corps of Engineers recommendation that, if the beach is to be maintained for the good of the public, it must be artificially maintained. Building stronger seawalls is less effective than dulling the power of the waves before they reach the beach by keeping the off-shore waters relatively shallow with imported sand.

Eroded sand beach at Coney Island exposes wooden boardwalk to the waves.
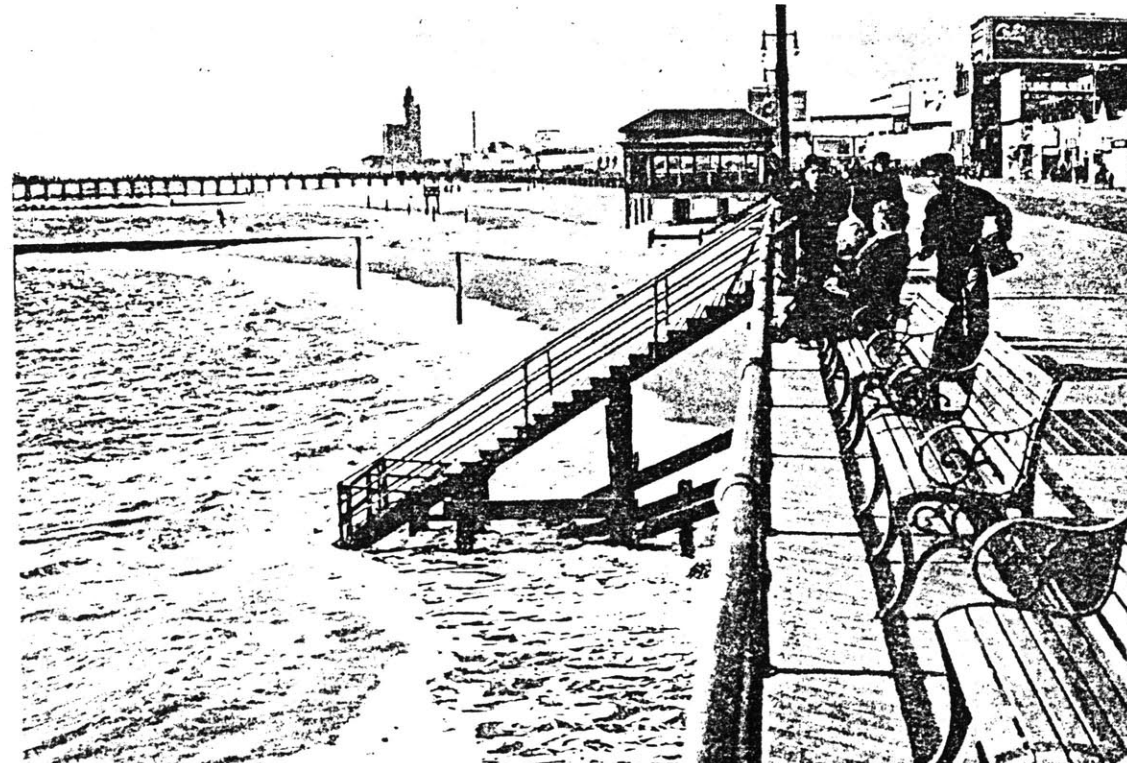
Two Ends of a Spectrum

These diagrams illustrate two directions that future development at Revere Beach might follow. One develops the entire area, and makes canals of the existing waterways "behind" the site, defining their edges and building densely within them. It could be considered the "Venetian Plan." The other treats the end of the transit system as a true terminus, and returns the site to "nature."

Either of these approaches would have been valid, but this design addressed a situation between these extremes. A natural site within such an urban context is undoubtedly a positive future for the area, but it is a more implausible change in the foreseeable future. It also does not raise as many architectural or urban design issues. A completely built environment, on the other hand, presumes the existence elsewhere of undeveloped land. To the extent that the ocean represents this factor, the site can be built intensively. But its potential to retain significant non-built areas is insurance for the future. Revere and its environs may not be prime real estate today, but they will become valuable soon and it will be increasingly difficult to retain much open space.

Potential New Connections

Boat service connects Bostonians not only to Nantasket but also to the "Harbor Islands" a decentralized state park comprised of 12 islands, each slightly different from the others. They are reached by ferries which leave from Aquarium MBTA station wharves.

Revere could also be linked to this system, connected by water to Boston, the Harbor Islands, and even to Nantasket. Because the MBTA serves Revere much more directly from Boston then would a boat, a Boston-Revere ferry would fill a more recreational than functional role. It is not clear that the passenger volume would economically justify operating the line. This same problem might also apply to a Harbor Islands-Revere line. Bostonians headed for the Harbor Islands would leave from downtown and north shore inhabitants would more easily depart from Marblehead.
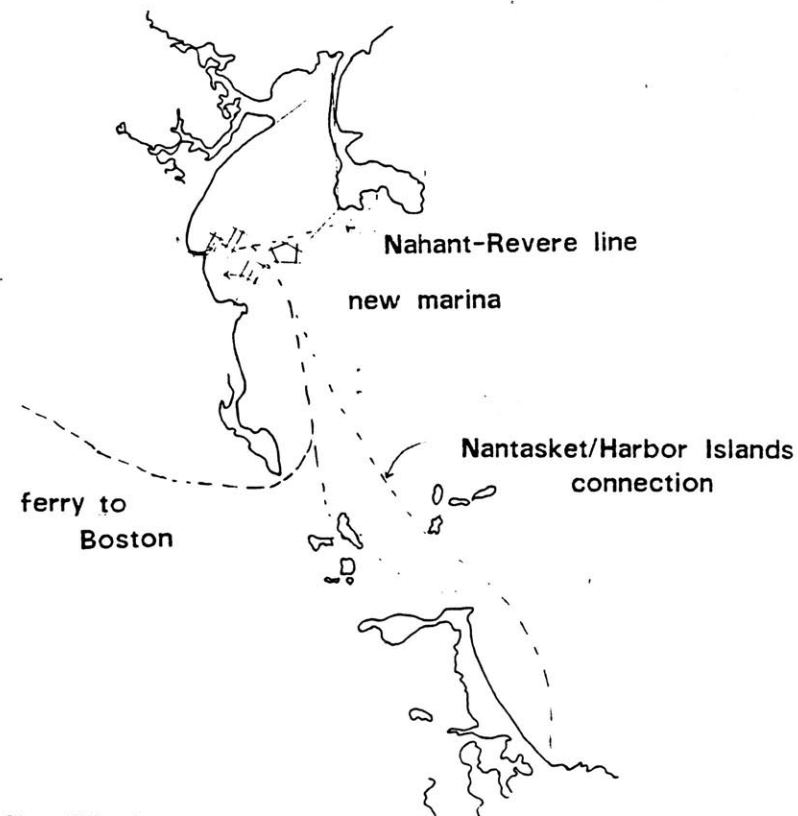
Possible boat routes from Revere to Nahant, Nantasket, Boston, and the Harbor Islands.
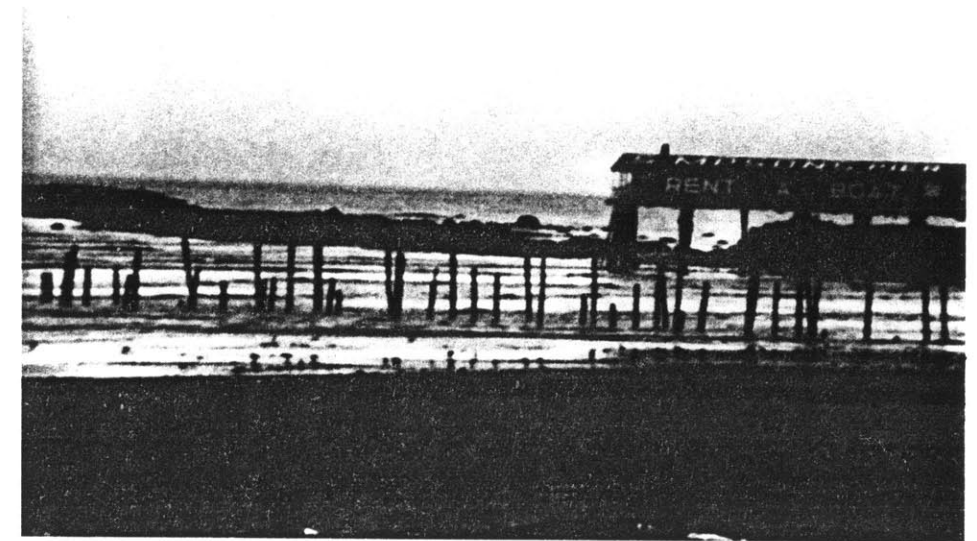
The pier, then and now.

There is also a possible connection with Nahant, a primarily residential community which lies across Broad Sound from Revere Beach, and is much closer by water than by land. Nahant residents could then commute by boat to work in Revere, but the demand for the near future would probably be small. Taking a commuter ferry first, with further travel by MBTA to Boston is also an option, but, again, it is hard to foresee a demand great enough to warrant the boat service. And the change from boat to T, with a probable subsequent transfer to another subway line threatens to make this route very inefficient for commuters.

Revere Beach, without a harbor, does have a potential ferry landing just beyond the southern end of the beach. The remains of a former marina and pier mark the location. Because there is not already such a service it is difficult to know if a a recreational ferry route would certainly become popular, but it could. Rather than competing with Nantasket and the Harbor Islands, Revere could share day-long visitors with them and the outings could be made completely wtihout automobiles.

For instance, consider a Brookline family, coming to the beach by MBTA. On arrival, they deposit their extra sweaters and evening clothes in a special locker and go for a swim. Some members of the family then leave by ferry. Half get off at a Harbor Island and the rest continue to Nantasket for the amusements. Those remaining at Revere Beach split their time between the beach and sightseeing along the boardwalk. If there is enough time, they may rent bicycles to ride out to the hotel on the point and have tea.

In the evening, those who left would return to Revere by boat to meet the others for an elegant dinner in a rooftop restaurant along the boardwalk's promenade. Later, they would return to Brookline on the MBTA.

Revere was developed in this project as an alternative to other destinations, but with possible future connections in mind.

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