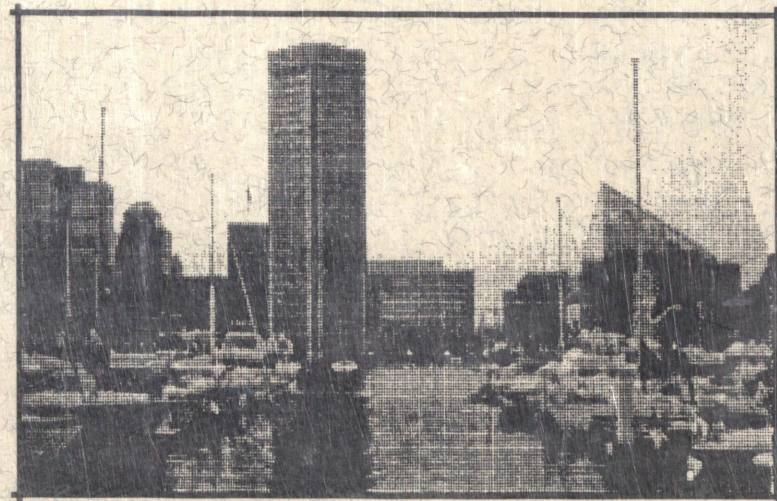


" Wherever in the world, as an incident of the highways and wharves along its riverbanks, a city has provided opportunity for people to walk and sit under pleasant conditions where they can watch the water and life upon it, where they can enjoy the breadth of outlook and the sight of the open sky and the opposite banks and the reflections in the stream, the result has added to the comeliness of the city itself, the health and the happiness of the people and their loyalty and local pride."

- Frederick Law Olmstead -
1910



HARBORVIEW MARITIME MUSEUM

P378
.B291

MONTANA STATE UNIVERSITY
LIBRARY

WA
2540
0291
P378
B291

Acknowledgements

*To my family, Jaafar Baisah, Rob Burda, Paul Siderius,
Ali, Lynn, Gene, Keith Ballantyne, and friends who made
it all possible.....Thanks.....*

Zainal A. Basen

Thesis! Wow, it sounds really exciting. Do you see the light at the end of the tunnel? To tell the truth no. It doesn't get any easier from this point out. Trust me. Now comes the question, what have you learned for four years in architectural school? I would be lying if I said nothing. But would that be enough preparation to ensure success in a complex reality? How do you know you have progressed since day one in school? As Arthur Erickson wrote, "The course of any successful career is an adventure of directions explored and ideas pursued. However, unlike an artist or businessman, an architect cannot easily refer to a gallery of work or some badge of wealth as evidence of his progress. It is the lot of the architect to envision much and realize little. Yet the numerous stillborn projects and lost competitions are key to explaining an architect's path; how he developed from one project to another, why he designed one thing one way, and something else another."

Does the 'real world' really need another architect? Or are there enough 'wild and crazy' architects to gleam the globe with various built architecture?

In the past four years I have been exposed to various architects, styles, and architectural periods, now this thesis project to me is a measure of my ability to handle a project and apply what I have learned. It is not my intention to define any path that I will take in the future, in terms of architectural style, but a mere experimentation of the current interest or trend of today's architectural world. It is more like a stepping stone in choosing the "right" path. Hopefully, this project will be one of the adventure of the journey along the unforeseen path-way.....' a fancy - fancy little thing.'

Keep in mind "no matter how hard you work, no matter how right you are, ...sometimes the dragon wins."

Zainal A. Baseri

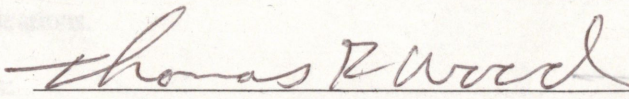
A Professional Paper Submitted in Partial Fulfillment of the Degree;

Bachelor of Architecture

Approved:

Advisor.

Thesis Coordinator.

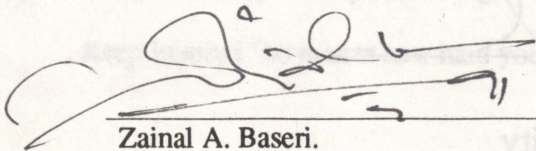


Director School of Architecture.

Montana State University
Bozeman, MT.
December 16th, 1991

In presenting this paper for the partial fulfillment of the requirements of the degree Bachelor of Architecture at Montana State University, I agree that the library shall make it freely available for inspection. I further agree that permission for extensive copying of this paper for scholarly purposes may be granted by my advisor or in his absence, by the Director of the School of Architecture.

It is understood that any copying or publication of this paper for financial gain shall not be permitted without my written consent.



Zainal A. Baseri.

1. Introduction.
2. Project Description
3. Educational Goals.
4. Site Analysis:
 - Vehicular, Pedestrian Pattern.
 - Boat Traffic.
 - View.
 - Noise.
 - Wind.
 - Implications.
5. Climate Analysis:
 - Temperature.
 - Relative Humidity.
 - Sky Cover.

Sun Angles.

Wind.

Implications.

6. Zoning Codes.

7. Precedent.

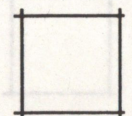
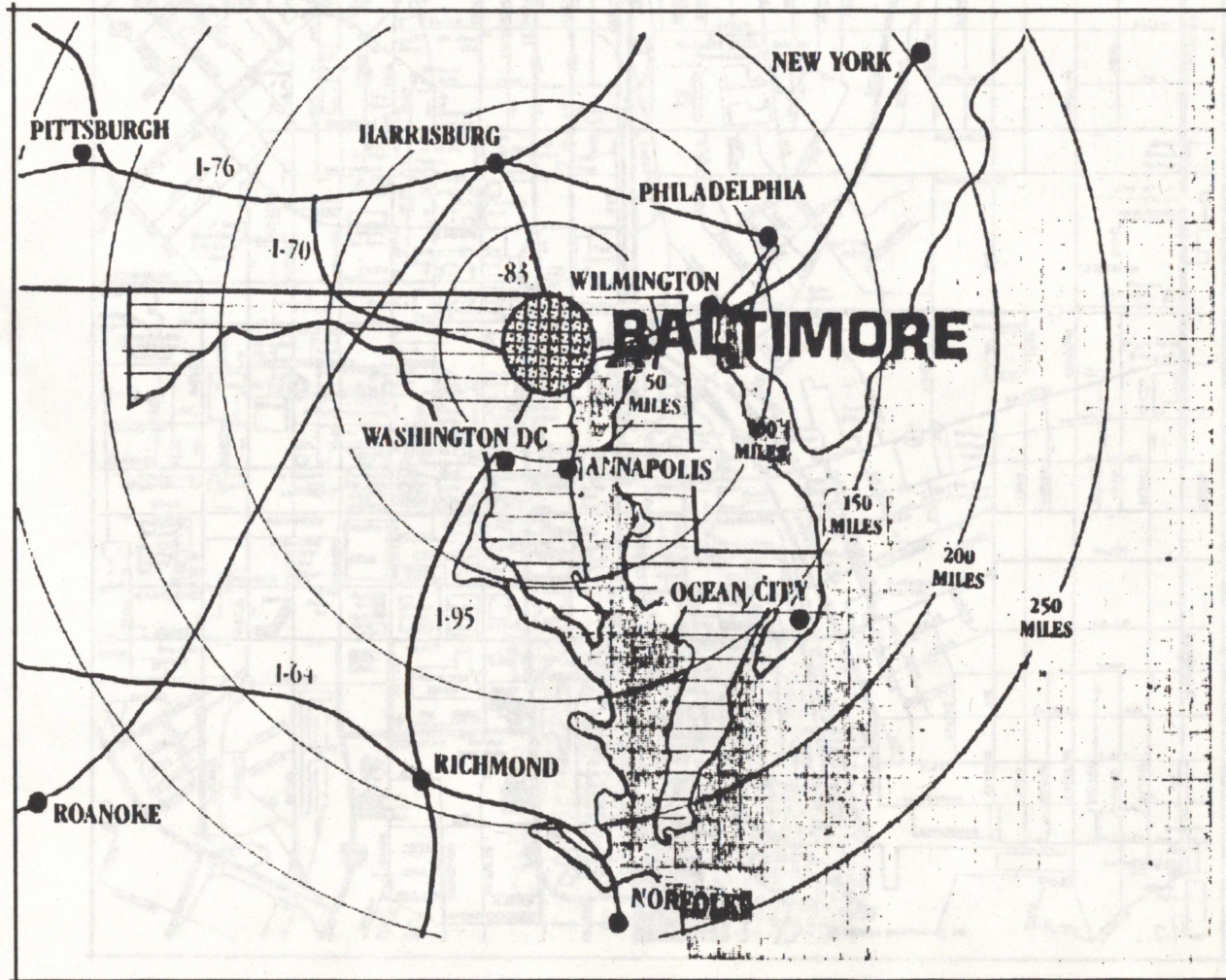
8. Users.

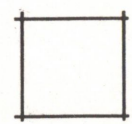
9. Space Programming.

10. Footnotes.

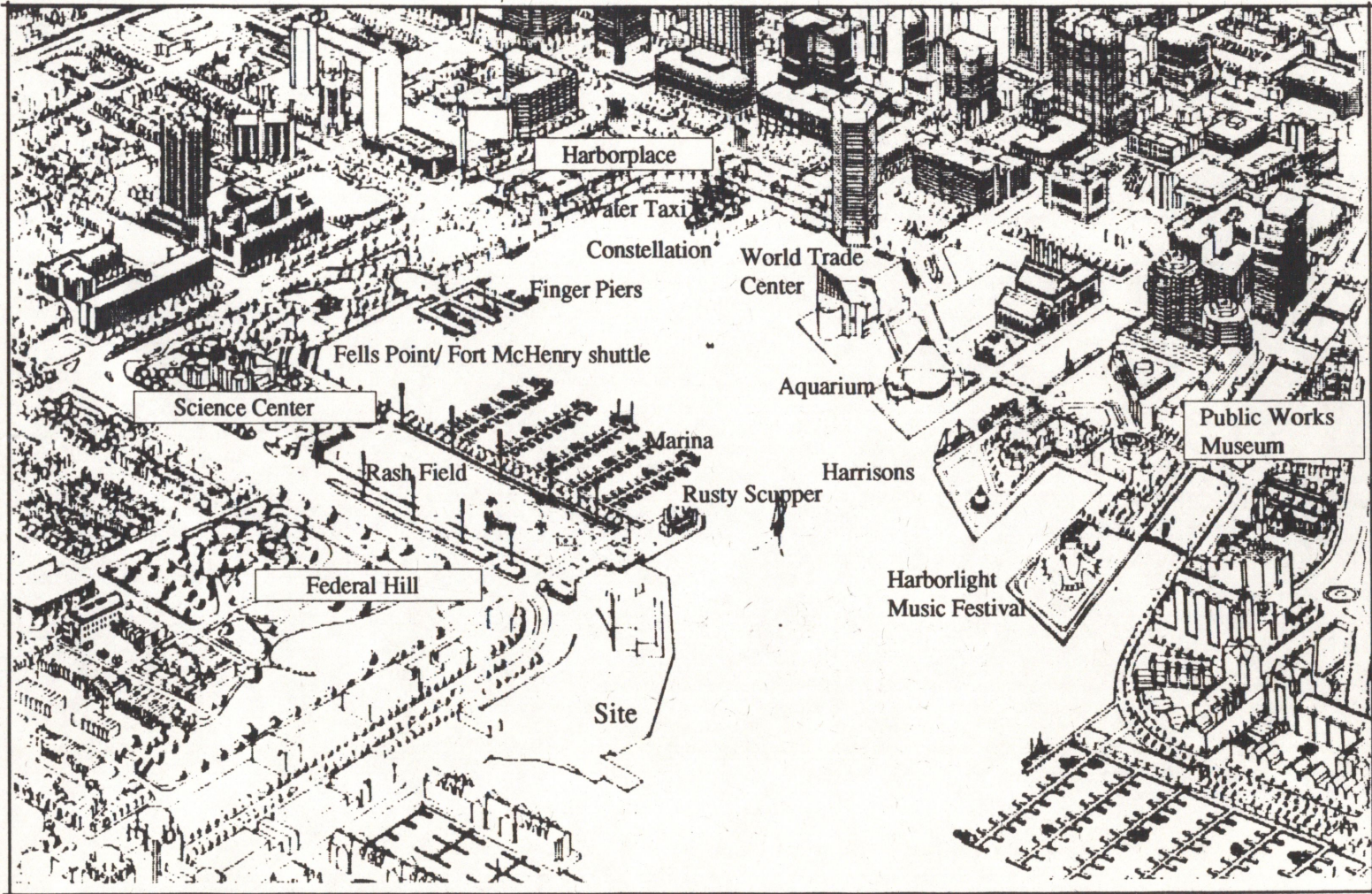


Regional Map.





Inner Harbor- Baltimore.



1

Introduction

"Baltimore derives its name from a town on the eastern shore of St. George Channel, County Cork, in Ireland. The original Irish-Beal-Ti-Mor means great place, or circle of Baal, the Sun God, erected on that site in Pagan times. *George Calvert*, a Yorkshireman, was created Baron of Baltimore by James I of England in 1625. His son *Cecilius*, second lord of Baltimore was made lord of Proprietary of England's first province, Maryland in 1632".^{1a} "Baltimore stands at the mouth of the Patapsco River, a narrow finger of the Chesapeake Bay pushed 200 miles to the Maryland shore by millennia of battering from the stormy Atlantic. The long stretch of salt separating Baltimore from the open sea is the country's longest stretch of natural inner harbor."²

Baltimore became an important port from the days when boats were powered exclusively with sail, to steamboat, connecting the Mid-West to the Atlantic and the rest of the Eastern shore. "Baltimore was a commercial gateway to America South, financing her economy, exporting her cotton and bringing in goods from the North and abroad."^{1b} Within that period, the port as well as the city grown from its original all purpose piers to include 42 miles of industrial shoreline with specialized facilities.

"After the fire of 1904 and the World-War I, Baltimore's downtown financial district and the wholesaling and dock areas were rebuilt. Though little change had taken place, a few major streets were widened and the docks were rearranged,

the Inner Harbor became dormant. However as it was a pathway from the sea leading to the doorstep of the downtown area of the city, it was considered a priceless asset.”⁴

“In recent decades, the image of a fouled Patapsco was matched by the image of Baltimore itself undergoing decay and decline, as it faced economic threats common to many northern frostbelt cities.”^{1b} “At that time the Inner Harbor consisted of rundown wharves, wholesale produce market, warehouse, railroad yard, and polluted water. This view coupled with the negative image of the downtown area presented an unattractive sight. The physical barriers that existed between the city and the water were roadways which caused a problem that could be easily reduced. The proximity and tight shape along the three sides of shoreline made the Inner Harbor area ideally suited for a new identity and sense of activity.”⁴ But the fact that “her economic is not based on any one local product or company has proved to be a blessing in hard times. The city also draws strength and vitality from its proud citizenry...And as ever it has for 300 years, the economic invigoration of Baltimore has its roots on the waterfront.”^{1b}

A redevelopment program proposed in 1963 to include the decline 250 acres Inner Harbor area bordering the Old Harbor basin, helped the city to grow and revive its image. Abel Wolman, a prominent local water resources engineer, who just returned from Europe with glowing tales of Stockholm’s Harbor, urged Mayor Theodore R. McKeldin to develop a

similar plan for Baltimore. He enlisted Philadelphia designer David A. Wallace who then credited his partner Thomas A. Todd for the resultant masterplan. Both Todd and Wallace prepared the plan in 1964 with the basic intention "to return the shoreline to the people", by providing land on the water's edge for recreational, educational, and cultural facilities.

Progressive Architecture in its April 1965 issue wrote; "Inner Harbor...emerges as a candidate for the best use of water and open land in post-war U.S. urban renewal. Instead of cutting the water off from the city, as almost all our cities do, Baltimore-if this plan is followed- will thrust the living, 24-hour-a-day city into intimate and vivacious contact with the harbor whence it sprang." Hiromichi Sagi in Process Architecture November 1984 issue wrote,"with the redevelopment of Baltimore Harbor, the water has become visually speaking a center and is thus a classical example of a development where the people have been brought into closer contact with the water."

Four basic goals were outlined in the redevelopment program.

- a. A reconstruction of the Municipal Center which called for new and rehabilitated government building to line a stately mall 150 feet wide linking city hall with the Inner Harbor. The center was expected to stimulate private investment in other uses called by the plan.
- b. Offices to be built as an extension of Charles Center southward to the Inner Harbor.

c. Residential development with a broad spectrum of costs in high-rise and low-rise buildings bracketing the harbor to the east and west.

d. A regional 'playground' comprised of recreation, cultural, and entertainment facilities centering on the piers and around the shoreline of the basin itself.

Even though the success of the redevelopment program did not come overnight, the city managed to focus the Inner Harbor into the eyes of tourist through several built attractions. "The first construction was of waterside promenades and dock for the frigate Constellation, which makes its home in the Inner Harbor."² "The 176-foot U.S.F. Constellation was built in Baltimore by David Stodder in 1797 and returned to the city as a museum in 1955 after a story book naval career. She is said to be the oldest ship in the world continuously afloat. She defeated the French ship L'Insurgate and La Vengeance in her first five years of service, engaged pirates off the Barbary Coast in 1802, fought the British in the war 1812, opened U.S. trade with China in 1840's, helped break up the slave trade, and among other things was commissioned by President Roosevelt as flagship of the Atlantic Fleet in World War II."^{1c}

"Next in the early to mid 1970's, came the first of a series of intentionally self effacing office building that the plan placed in a row north of the water as a buffer between the harbor and Charles Center. The first major public presence on the

harbor was established in 1977 with the completion of the 28-story World Trade Center office tower by I.M. Pei & Partners.⁷² The World Trade Center is the home for the Maryland Port Administration and many ship lines and agencies. Besides that it offers a stunning view of where you are going, and where have you been in Baltimore from the observation deck on the 28th floor. The center also features exhibits and gift shop.

At about the same time, the Science Center, marina, and "ceremonial landing" were built on the south side of harbor at the foot of Federal Hill. "The Maryland Science Center was built as the first public attraction in the Inner Harbor area. Exhibit include slide shows, a hands-on 'science arcade' and live demonstrations of scientific phenomena. The Davis Planetarium offers daily shows on astronomy."⁷³

"The next major event on the water's edge came on July 4, 1981 with the festive opening of the Harborplace, fraternally twin two-story pavilions containing some 250,000 square feet of shops, restaurants, stands, and other assorted delights."⁷⁴ "Under the 1978 agreement, Rouse Co., who developed the Harborplace, pays the city an annual basic rent of \$ 100,000, plus 25 percent of cash remaining after deducting a 10 percent operating profit, 10 percent on equity investment and other expenses. Individual entrepreneurs reportedly pay, depending on location, anywhere from \$ 48 to \$ 96 a square foot annual rent, plus utilities, to operate in this prime commercial space."⁷⁵ But Harborplace brought Inner Harbor gloriously

to life. "Harborplace is now the Saturday afternoon outing for kids, the place to stop and eat on the way home from a weekend in New York, the location to meet for a drink after work. It is Baltimore's dinner and lunch and breakfast and late supper and all day snack-shop," wrote Washington Post restaurant critics Phylis C. Richman in May 1981.²

Another major contributor of bringing people closer to the water is the National Aquarium of Baltimore. "Marine Biologist and engineers control the environment of over one million gallons of water to care for and display some 5000 creatures in natural-looking settings. Highlights include an outdoor sea pool, a whale tank, a 335,000 gallon Atlantic coral reef, a 220,000 gallon shark tank, a tropical rain forest, and display showing the range of aquatic life from mountain to seashore."^{1c} The Aquarium was opened in August 1981, and the extension of the Aquarium was completed in 1989. The Aquarium has brought more than 600,000 visitors annually to the Inner Harbor area.

Besides the attractions that were mentioned above, there are few other places that are located along the Inner Harbor area within walking distances or could be reached by shuttle boats.

Public Works Museum/ Sewage Pumping Station, a 1911 building, was opened to the public in 1982, features a \$ 500,000 "streetscape", demonstrating the below ground marvel at a typical street intersection.

Harborlight Music Festival offers an imaginative tentlike outdoor concert pavilion. It opened in 1981, with varied

quality fare as Ella Fitzgerald, Yehudi Menuhin, Robert Merrill, and the Preservation Hall Jazz Band. Seat range from \$ 12.50 to \$3 to nothing at all for those who come by boats or sit on the seawall across from Jones Fall.

Harrison's at pier 5 provide visitors rooms and a homestyle Chesapeake Bay restaurant. The vintage seven foot Knoll lighthouse south of the restaurant marked the shipping industry in Baltimore.

Baltimore Museum of Industry offers demonstrations including a belt-driven machine shop, loft garment shop, a working print shop, and a representation of the port. Behind the museum is the S.S. Baltimore, a turn of the century steam tugboat which was once used by the Maryland Port Administration for public tour of the harbor.

The Inner Harbor Marina provides hospitality for 158 boats including water, electricity, and showers. Rusty Scupper's restaurant located close by offers splendid views of the harbor from every table.

The daily shuttle take passengers to Fort McHenry and Fells Point, the two most historic places in Baltimore, and back to the Inner Harbor area. And for those who like to see Baltimore from a different view, they can go aboard the 136-foot Lady Baltimore, specialized in luncheon and dinner cruises, which operates day excursions in the tradition of the old Baltimore sidewheelers. It features a trip to Annapolis, St. Michael, and C & D Canal. The Patriot boats also serve visitors with 1 1/2 hour narrated tour of Baltimore, past Fort McHenry to Fort Carrol and the Key Bridge and back.

Visitors who want to satisfy the urge to get out on the water can rent a fleet of paddleboats which are run by Harbor Boating Inc. The company also operates the "water taxi" service which connects the various piers. For those without leg muscles, Trident Electric Boats Ltd. operates a fleet of 26 battery-powered boats from a dock just east of the World Trade Center.

The Inner Harbor as it is today is a major tourism industry area in the state of Maryland. "The Inner Harbor is Baltimore's enchantress, the magical shoreline that has won national attention."¹⁶ and became the most attractive public gathering places on the East Coast. "No stranger can go to Baltimore to day without catching something of this resolute city's spirit," Gilbert Grosvenor wrote in National Geographic magazine. He thus captured the eternal secret of Baltimore in the February issue in 1927.^{1c}

Recently, an Urban Renewal Project I plan, adopting the Renewal Plan of 1986, was proposed to develop areas around the Harbor. This plan as determined by the Mayor, and the City Council of Baltimore, acting by and through the Neighborhood Progress Administration/Department of Housing and Community, and the Commissioner, offers objectives as follows;

- 1- To eliminate blighting influences within the area.

- 2- To provide a plan for new uses that are compatible with the existing neighboring environment and the city's redevelopment objectives in the project area and to establish a plan review process to ensure orderly and harmonious development therein.
- 3- To provide for new development which respects the adjacent community and provides a transition to the existing neighborhood.
- 4- To promote economic development on the South Baltimore Peninsular, provide job opportunities for city residents, and preserve viable industrial area.
- 5- To provide for the completion of the public shoreline uses around the Inner Harbor and to provide for a transition between the Inner Harbor and adjacent development.
- 6- To provide public pedestrian access to the waterfront by means of open space and pedestrian walkways along the waterfront and through private development areas.
- 7- To protect and enhance views of the Harbor from South Baltimore east-west street, Federal Hill Park and Key Highway.
- 8- To improve the environmental quality of the harbor as a result of redevelopment, which is consistent with the

Critical Areas Commission Criteria.

9- To allow opportunities for recreational boating consistent with the operation of a commercial port.

10- To establish a positive image for the Project area so as to provide opportunities for new downtown waterfront development, increase the tax base of the City, improve job opportunities and generally increase the economic vitality.

The proposed Urban Renewal Project I does follow the same guidelines as the redevelopment program of 1964, to bring the City back to its Golden years. Hopefully for the years to come, these objectives will be followed closely to ensure its success, and be followed for other waterfront development across the nation.

2

Project Description.

As were mentioned above, the basic outline of the redevelopment program of Inner Harbor was to return the waterfront to the public by providing recreational, educational, and cultural facilities. The site that I have chosen for my thesis project is located at the entrance to the Inner Harbor, known as the Propeller Yard. This particular site is to be developed within the same intention and guidelines of the redevelopment program dated back to 1964, and the Urban Renewal Project I adopted from the plan that was proposed in 1986.

The City of Baltimore recognizes the site as very prominent, unique and valuable. "The Propeller Yard will become the new terminus of the Inner Harbor. Today, the Rusty Scupper restaurant and the Rash Field garden are the last waterfront destinations on the southern leg of the Inner Harbor promenade. Once developed, the Propeller Yard will be the point where a pedestrian walking along the waterfront leaves the predominantly public/tourist area of the Inner Harbor and enters the more private sphere of the new waterfront residential community."¹⁰

Besides that the Propeller Yard forms a gateway to the Inner Harbor area from the water since Baltimore's maritime golden day era, as well as from the Key Highway. Recognizing the significance of the site and its relationship with maritime industry, the client, the City of Baltimore, choose this site to house maritime experiences, called The Harborview Maritime Museum. (For the purpose of this thesis project,) The museum will be funded by the City of Baltimore, a non-

profit, and self-supporting entity in the interest of Baltimore's proud citizen.

The Harborview Maritime Museum will host permanent exhibits that attribute to local historic maritime activity as well as temporary exhibit that contribute to the significance of maritime industry in the world. This facilities will also serve to educate the public about maritime life and activity. Besides that, the facilities will also serve as a public recreational and cultural activity place by providing exterior and interior plaza for that purposes.

Moreover, instead of totally eliminating the existing Maritime Museum, which is aboard the submarine Torsk and the Chesapeake lightship, this facilities will integrate both as part of a full scale exhibit. Docking facilities for the Tall Ships that visit Baltimore during the summer will also be provided.

The balance in terms of masses, height against the background, The Federal Hill, and the rest of the existing building have to be considered. Moreover, the continuation of the harborwalk, and the way of bringing visitors to the site; those who arrived by busses, walk, or by boats will be incorporate into the design.

It is within the perimeter that were mentioned above that the development of this particular site, will bring more visitors to the Inner Harbor area and that the development would be a stepping stone and mediate further expansion along the waterfront....., and bring a happy and assertive contrast to the harbor.

3

Educational Goals.

- 1- To learn to organize and follow a schedule effectively.
- 2- To learn to manage and execute the entire project thoroughly.
- 3- To respond and be sensitive about site issues and incorporate the issues in the design.
- 4- To learn to deal with constructive criticism and design a piece of architecture that belongs to the site.

4

Site Analysis.

The project site is bounded by the water from northwest to the southeast of the site, by the Key Highway on the southwest and by the Harborview Lot 2 on the south. At the moment, the site "is predominantly vacant with several structures remaining from the land's previous use as part of the Bethlehem Steel shipyard. The most prominent building is a large brick warehouse on the northern portion of the site. This building which is mostly empty, is used for trolley storage. The height of the brick warehouse is approximately elevation 68 with a small mechanical enclosure reaching elevation 80. None of the structures on the site are considered worth preserving as part of land's redevelopment."¹⁰ The property is relatively flat with a small two-story parking garages on its west side.

The main vehicular entry to the site is from the Key Highway, and the main pedestrian entrance is through the Harborwalk. Besides that, there are boats that visitors can aboard, that go in and out of the Harbor on an hourly basis. The water taxi for example, serve those who want to go from one point of interest to another, but would like to experience going through the water and see the Harbor from a different perspective.

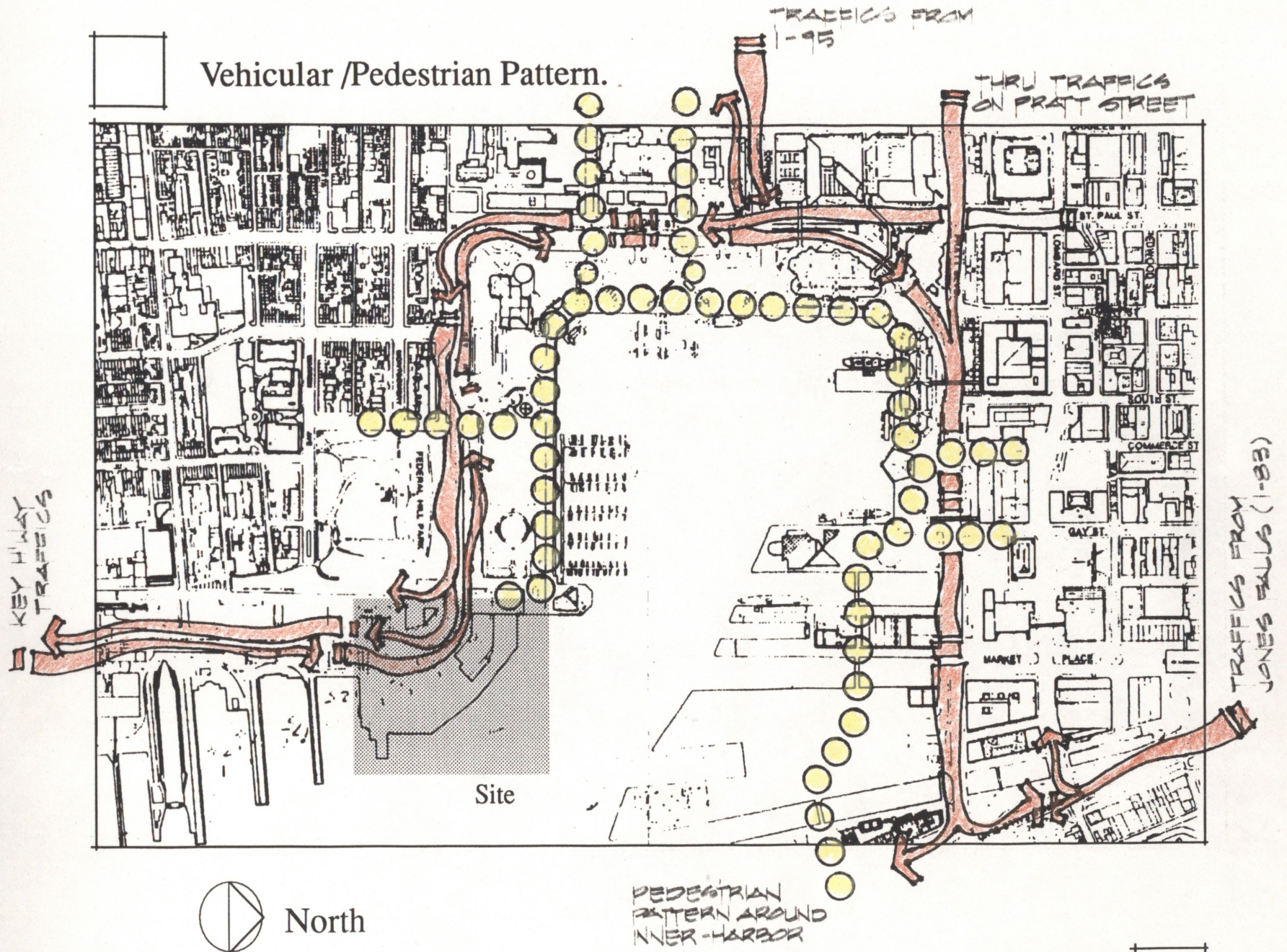
The site has a pleasant open view of the Inner Harbor from the west leading to its southeast. On the southwest side is the green hillside of the Federal Hill, an essential City landmark, which serve as backdrop for the Inner Harbor and "historically identified the beginning of the Inner Harbor to ships entering the channel."¹⁰ Toward the south and southeast of the site

is an open view of undeveloped industrial area which will eventually be transformed into residential/community business district under the Urban Renewal Project I program.

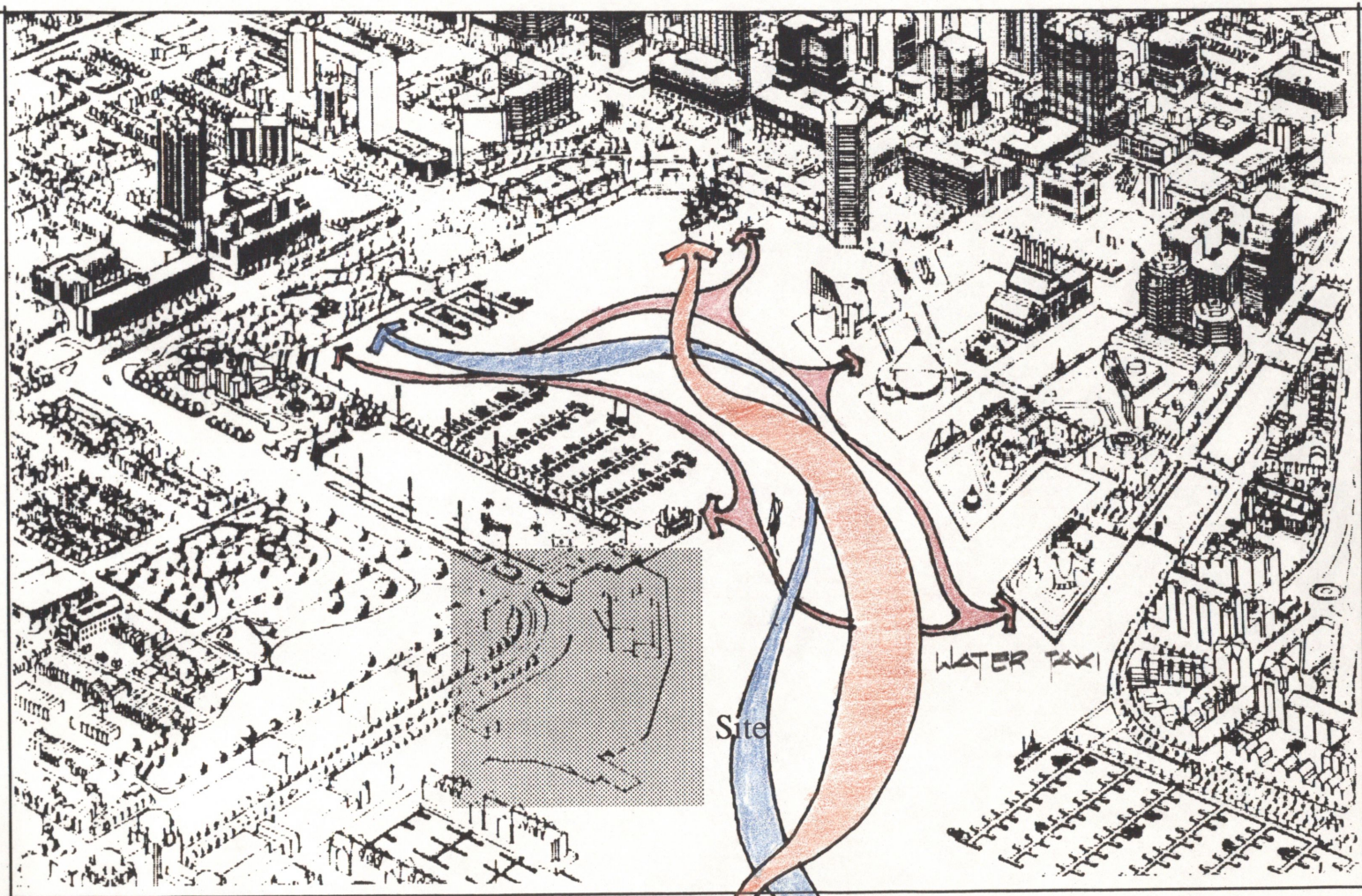
The prevailing wind of the winter comes from the northeast and the prevailing wind of the summer comes from southwest of the site.

"Most of the noise that affects the site is from the traffics that pass through on the Key Highway. The more desirable effect of noise is the sound of boats, and ships arriving and departing the harbor on the hour everyday."

Vehicular /Pedestrian Pattern.



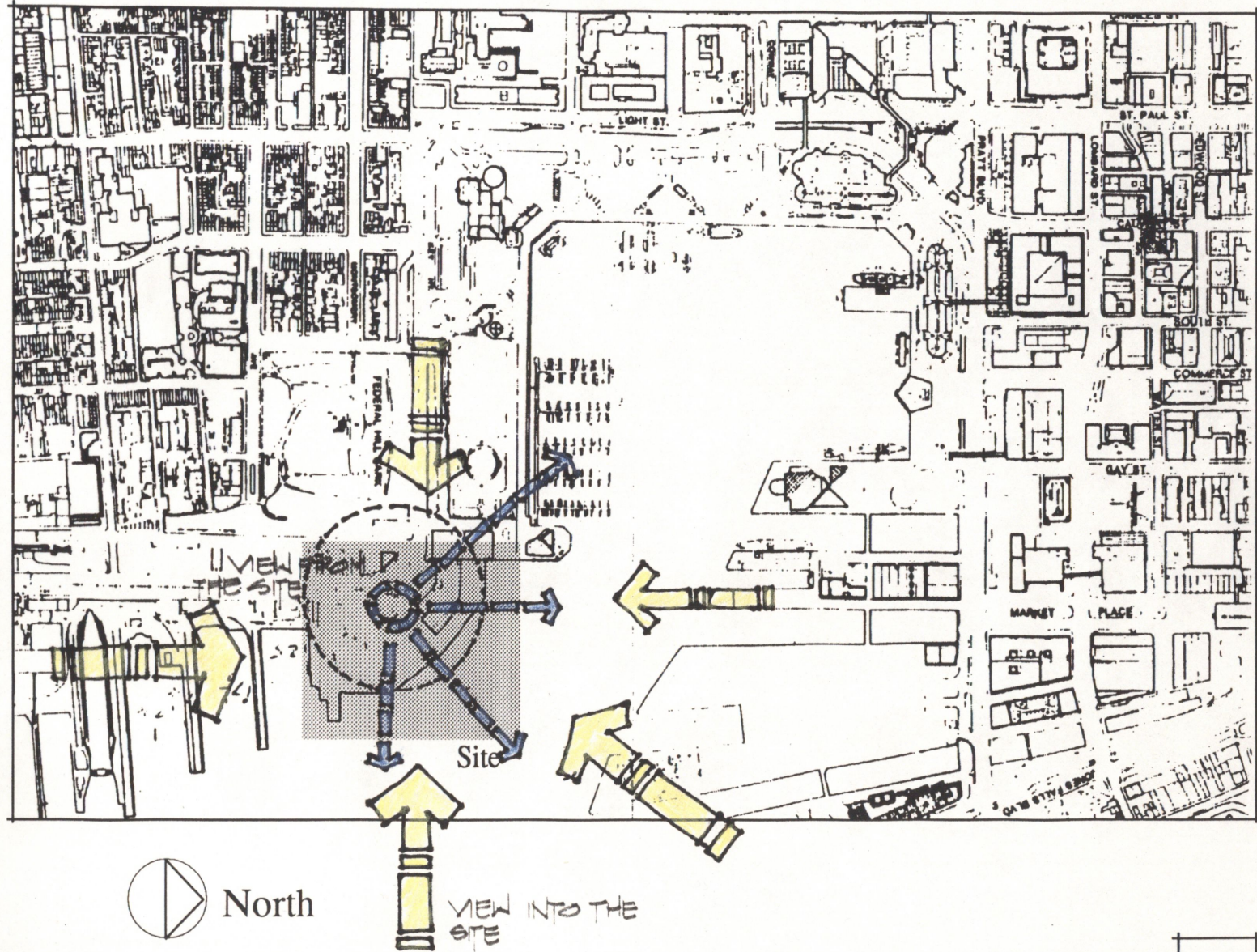
Boat Traffic

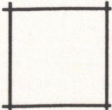


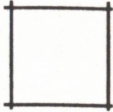
HARBOR TOUR TO
FELS POINT & FORT
MCHENRY

SHUTTLE BOATS TO
FELS POINT, FORT
MCHENRY & CANTON

Views

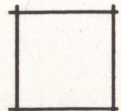






Site Analysis: Implication.

- 1- Multiple Entry for users from various direction.
- 2- Vehicular access from the Key Highway and pedestrian access through the continuation of the Harborwalk.
- 3- Consider the pleasant open views along the north side of site, and filter views to the southeast and along Key Highway but recognize the possibility of future development of that area.
- 4- Diffuse the prevailing winter wind.
- 5- Buffered noise from traffic on Key Highway.
- 6- Recognize the significant of the site location as the entrance into the Inner Harbor.
- 7- Recognize the possibility of interaction with the water;
 - bringing people from water taxi, tour boat etc.
 - exhibit that interact with water....
 - the significance of the maritime industry in Baltimore.
- 8- Create balance between the existing condition that surround the site and the design.



5

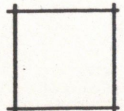
Climate Analysis

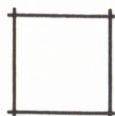
Baltimore's climate, like any other four season climate, varies from one season to another. The average temperature fluctuate from 48 F to 64 F with the extreme of -7 F at one end and 107 F at the other. The coldest months are in January and last throughout February with an average temperature in the 30's. Summer in Baltimore tends to be hot and humid but with comfortable evenings. The warmest month are from July to August with an average temperature in the mid-80's.

Relative humidity is a factor that contribute to the warmness or the coolness day in Baltimore. The lowest relative humidity occurs during the winter which is about 60% and gets up to 75% average during summer and early autumn.

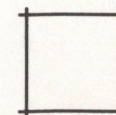
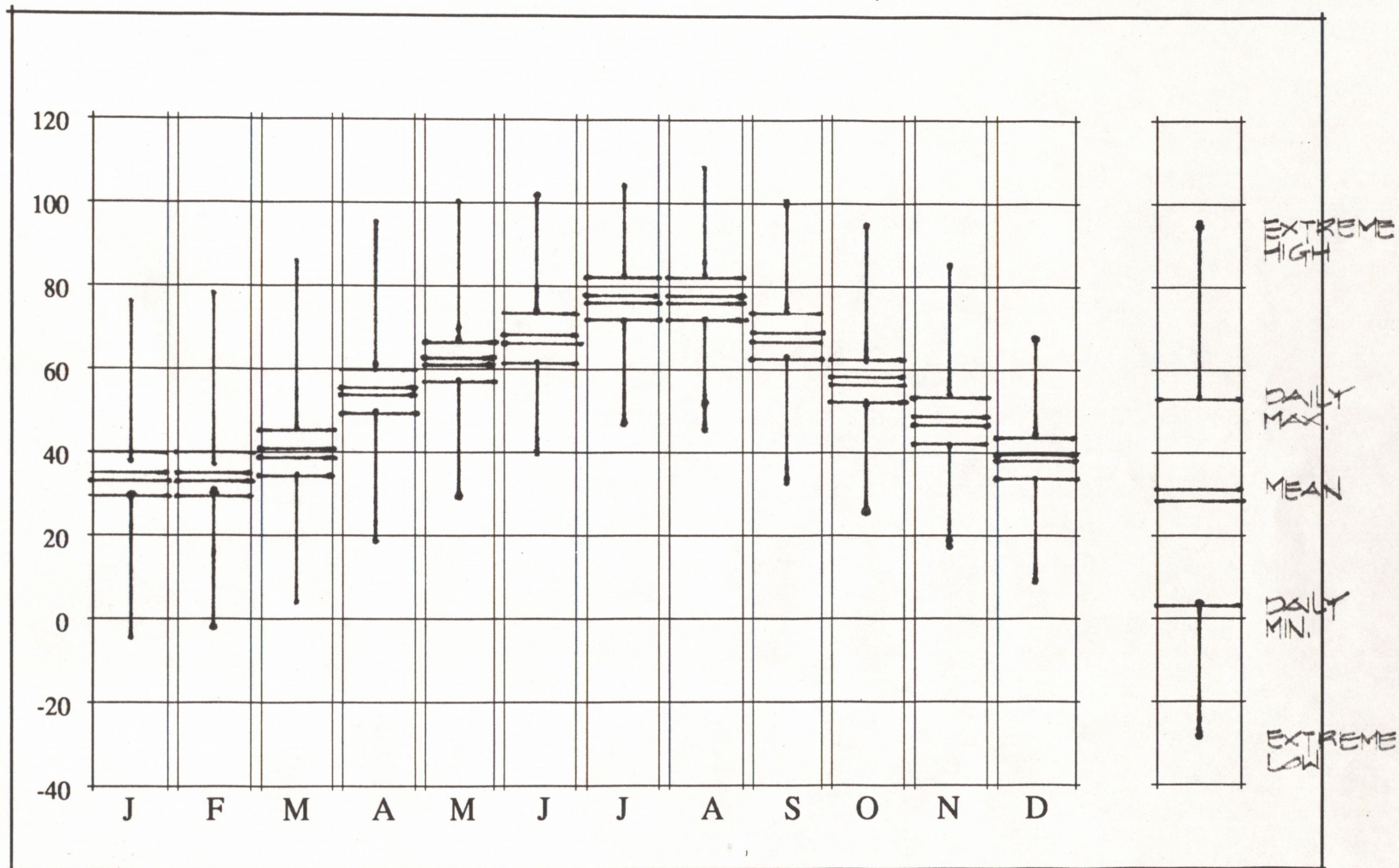
The sky condition in Baltimore downtown area, split three-ways almost evenly, with 1/3 of clear skies, 1/3 partly cloudy, and 1/3 of overcast sky. The peak clear sky occurs in the Autumn.

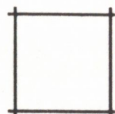
The prevailing wind also plays important role in every day Baltimore's climate. The average wind speed vary from 7 - 9 miles per hour in the summer and fall from the southwest, to 9 - 11 miles per hour in the winter and early spring from the northeast.



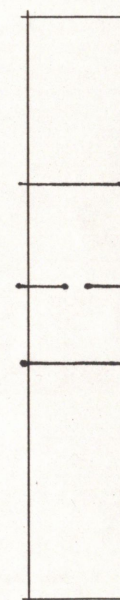
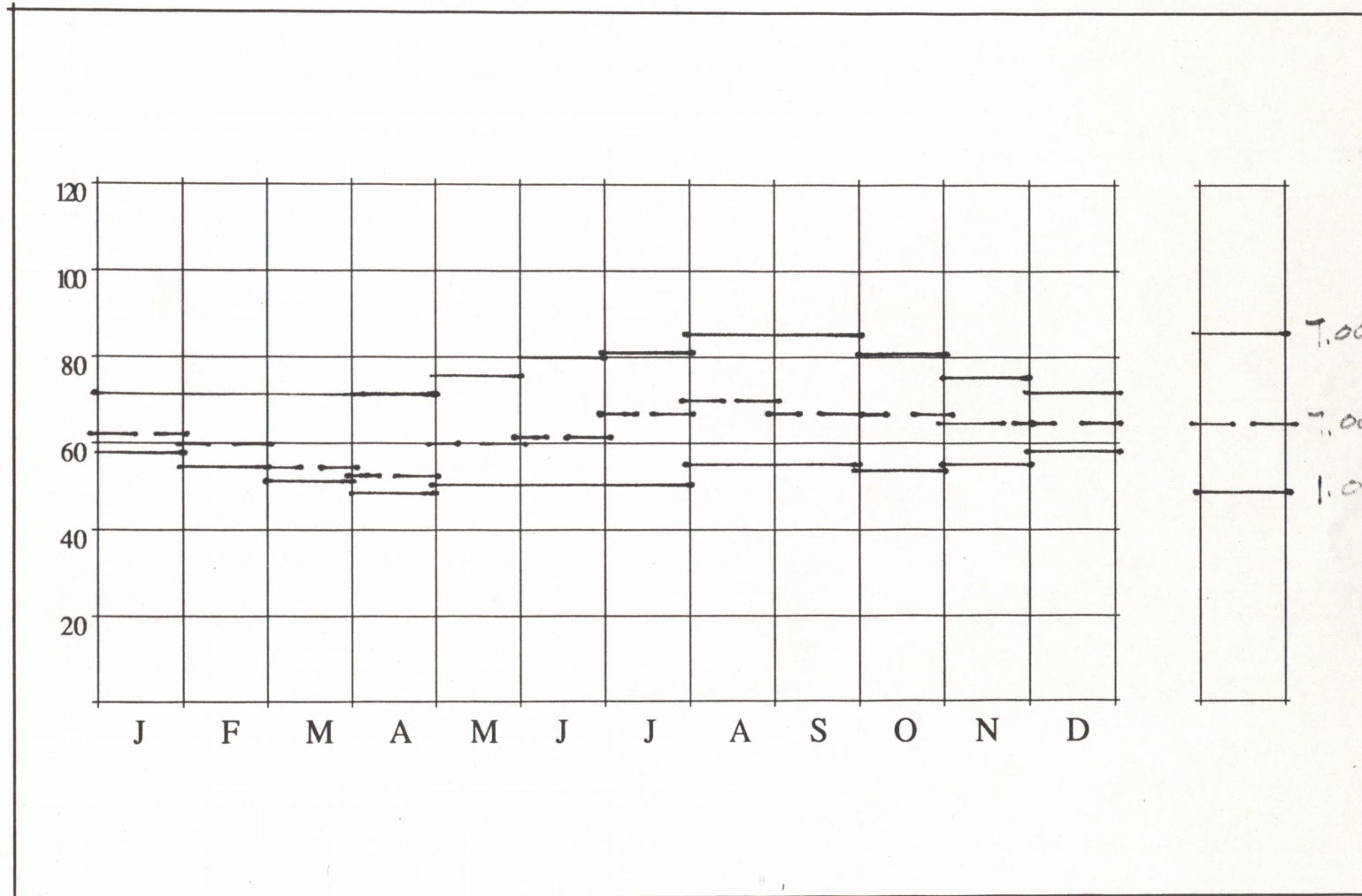


Temperature; Deg. F





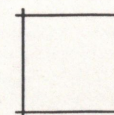
Relative Humidity %

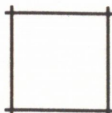


7.00 AM

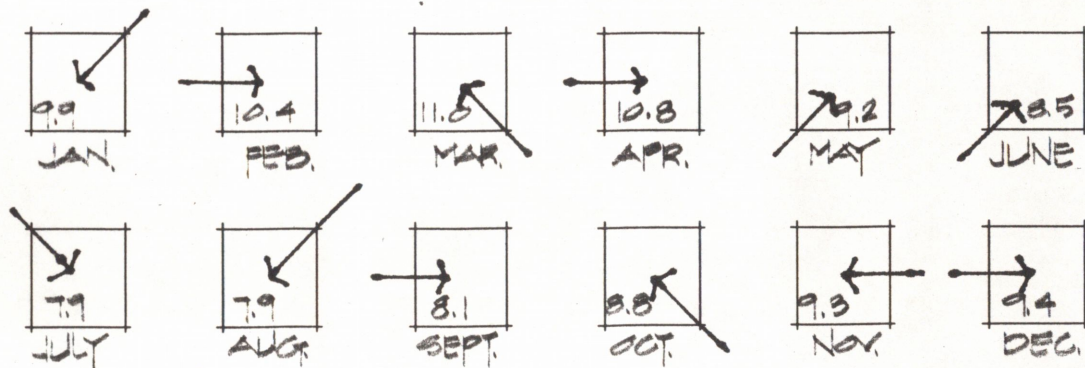
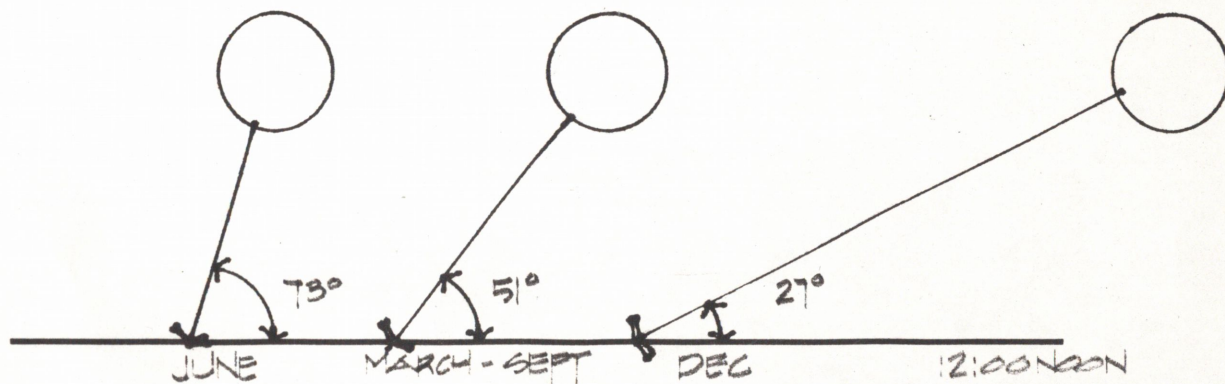
7.00 PM

1.00 AM

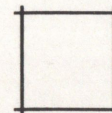


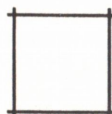


Sun Angles/ Wind

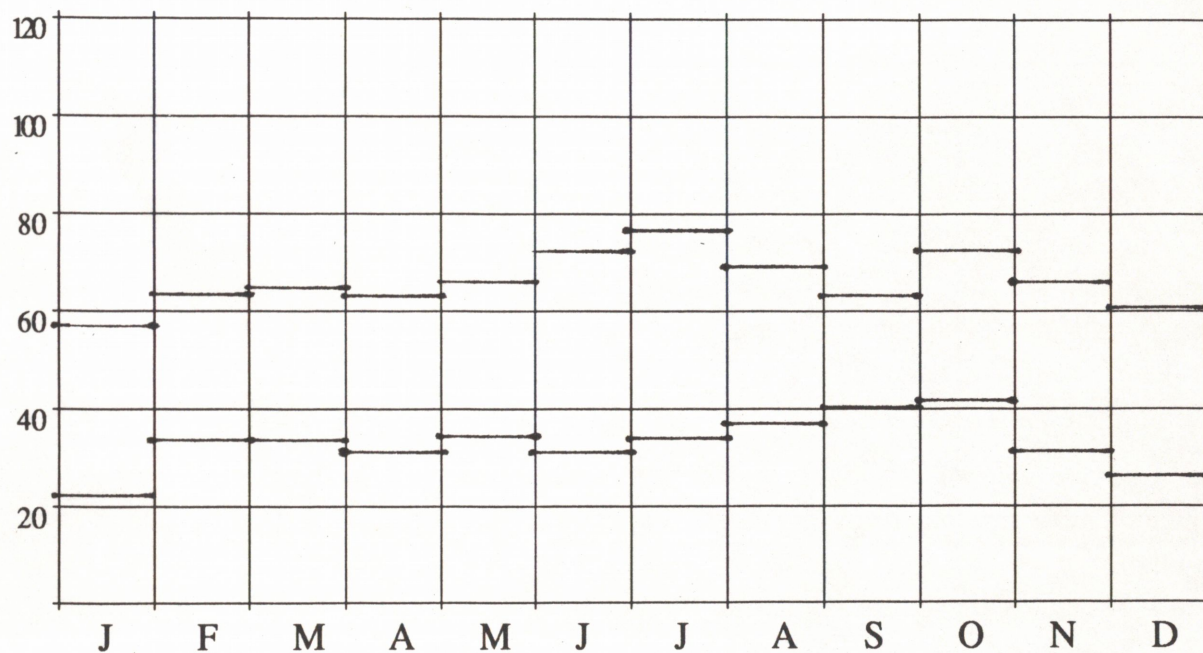


MEAN SPEED
M.P.H.





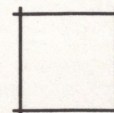
Sky Cover %

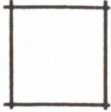


OVERCAST
SKY CONDITION

PARTLY
CLOUDY SKY
CONDITION

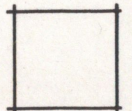
CLEAR SKY
CONDITION





Implication

- 1- Maintain comfort zone to avoid extreme temperature during both summer and winter.
- 2- Protect exhibits that are sensitive the changing daily weather.
- 3- Low profile building to allow the sun in the outdoor public space.
- 4- Recognize the advantage of the northern light toward the water.



The site, the Propeller Yard, is currently controlled by the owners of the Harborview project. The total area of the site is about 5.6 acres or 7.5 acres if the parking garages are included. The land is now zoned for general industry (M-2-2) and for heavy industry (M-3). However, under the Urban Renewal Plan, the City Planning Board developed policies that "require any development project on the Propeller Yard to match the sites prominence, uniqueness, and values in which the redevelopment of the site probably will require a change from the site's current industrial zoning."¹⁰ The study of the renewal plan proposed; "in order to implement this Renewal Plan, the changes to the Zoning Classification of certain development areas from M-2-2 and M-3 to B-2-4 or M-1-3 which allows high density community business and residential development are required."¹⁰

For the purpose of this project, since the site is part of the Inner Harbor (Map 1), I propose the zoning for B-5-1 which is Central Business District Commercial which would require a public review and approval of the project due to the zoning changes conducted by the City of Baltimore Planning Board.

Furthermore, the study of the Urban Renewal Project I which was done by RTKL Associates proposed "regulation which established four maximum height level for structures on the site. The regulations also control the percent of the site which can be covered by structures reaching each of the four levels. The site is divided into four Development Control Areas

(Map 2). Each area has a different set of maximum height and lot coverage limits. The recommended maximum height limits allows no building to be taller than the height of the top of Federal Hill which is elevation 81 feet.

These regulations are to protect views and to limit the amount of development to an appropriate level. The regulations allow flexibility for development and design in that they do not set the exact locations of structures within the Development Areas.”¹⁰

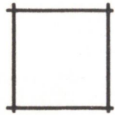
Note;

The following regulations, controls, and restrictions are based on a proposal of the Urban Renewal Plan by RTKL.

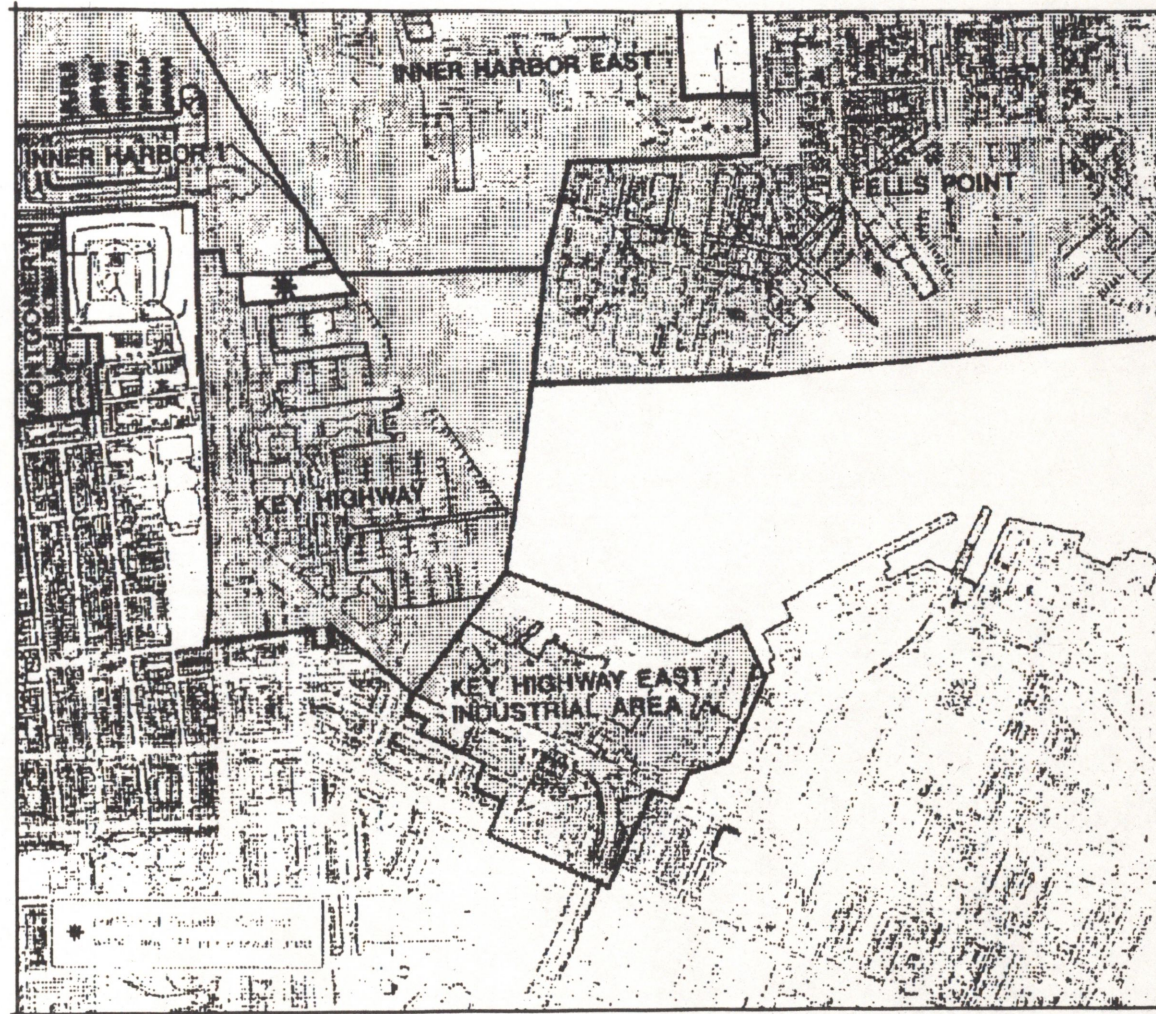
REGULATIONS, CONTROLS, AND RESTRICTIONS.

A. Applicability.

The following controls shall apply to all new construction and where appropriate, to the rehabilitation of existing structures, within the project area. Substantial compliance herewith shall be a condition precedent to the issuance of a building permit.

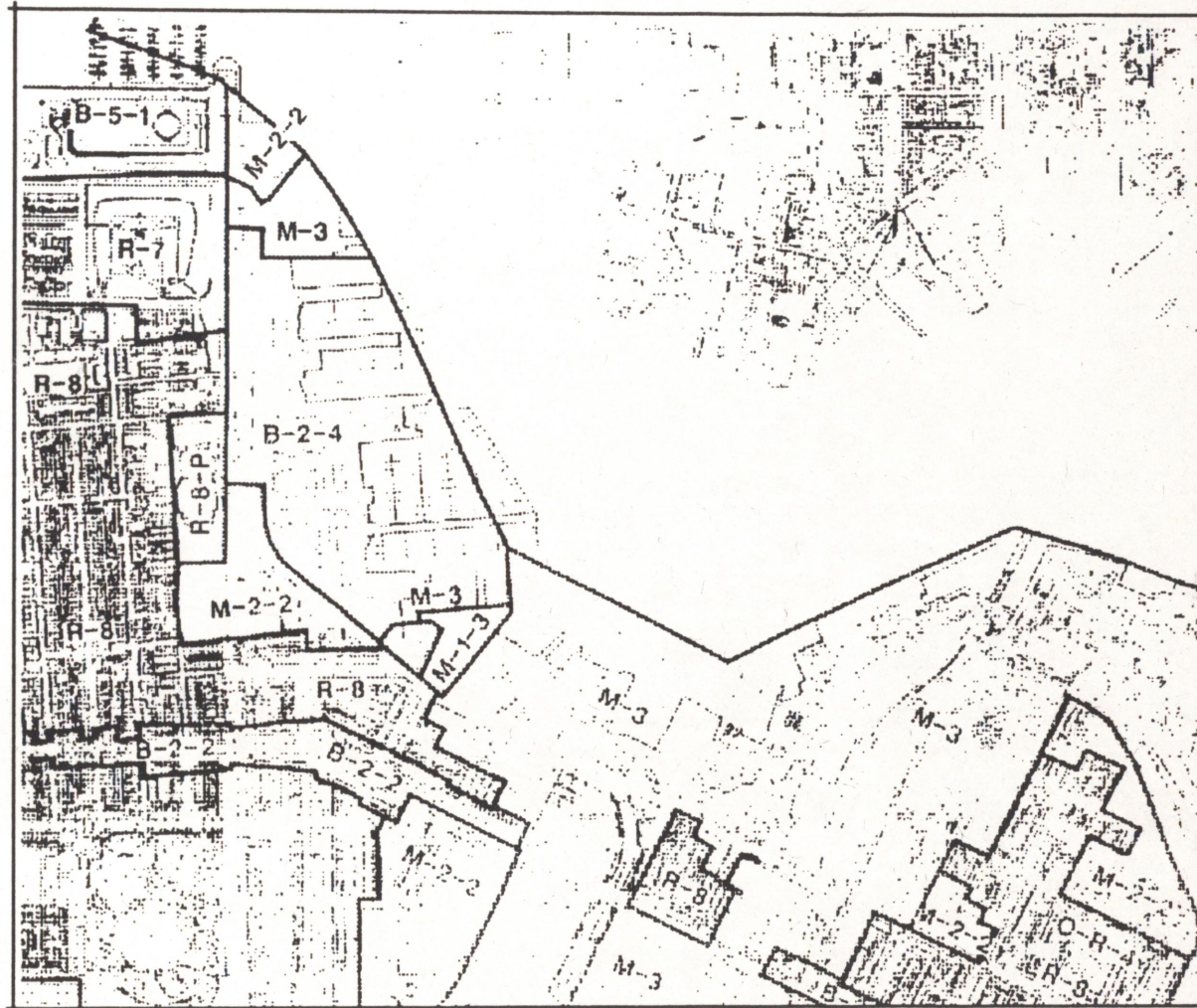


Map 1: Districts.





Map 1a: Zoning.



B. General Control.

1-Servicing: All servicing for new structures shall be off-street, and shall be within structures and roofed so as to be in accordance with the Building code of Baltimore City. Open air storage of equipment, merchandise and materials is prohibited.

2-Waste Disposal: Facilities will be provided and maintained within structures for the storage and collection of refuse. No waste or refuse shall be permitted to remain outside of structures.

3-Parking: Parking shall be provided and maintained in accordance with the following minimum standards (provided that provision may be made for multiple use of spaces for one or more land uses.)

Office Space; 2.5 spaces per 1000 sq. ft. of floor area, including ground level or lobby retail space in office building.

Retail Space; 4.0 spaces per 1000 sq. ft. of occupied floor area.

Marina; 1.0 spaces for each three slips or as required by the Zoning Ordinance of Baltimore City.

In addition, off street parking lots shall be visually screened from the water and adjacent streets and properties.

Screening shall consist of either a masonry wall or durable fence (except chain link fences which are prohibited) or combinations thereof, not less than 4 feet in height, or a compact evergreen hedge of not less than 4 feet in height at

the time of planting.

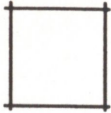
No parking which is visible at grade will be permitted fronting Key Highway or any other public pedestrian way or promenade.

4- Minimum Elevation for New Development: No habitable building area and no building area containing mechanical, electrical, or other equipment or property not easily or quickly removable, shall be permitted below elevation 10 feet above Mean Low Tide, unless such area is waterproofed or protected against hydrostatic pressure to elevation 10 feet above Mean Low Tide.

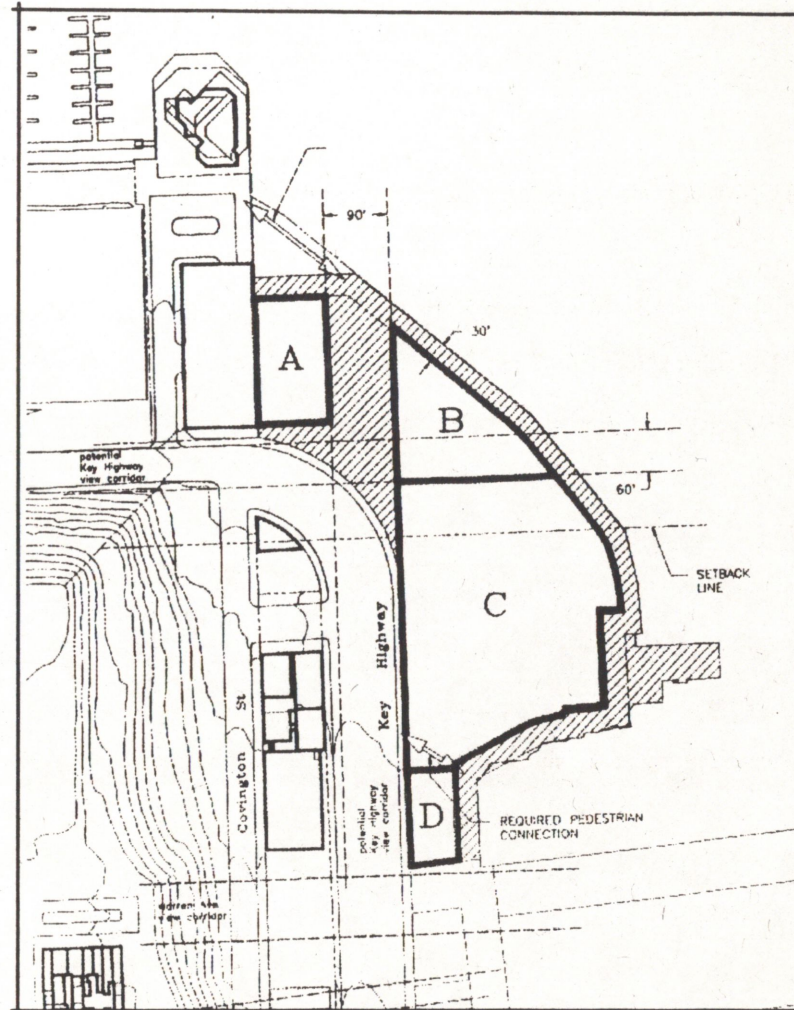
5-Landscaping: All land not covered by structures, paved parking, loading, or related service areas, paved areas for pedestrian circulation, or decorative surface treatment shall be provided with landscape treatment.

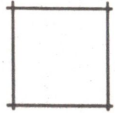
Landscape treatment encompasses the planting of any, all or a combination of the following; ground cover grass, flowers, trees, shrubs. The amount of landscape treatment should be determined by the nature of development and should serve to improve the utility of the site, soften and relieve the effects of structure and pavement, and provide visual harmony.

6-Pedestrian Access: Public pedestrian access shall be provided from Key Highway to the water's edge. In addition

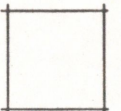
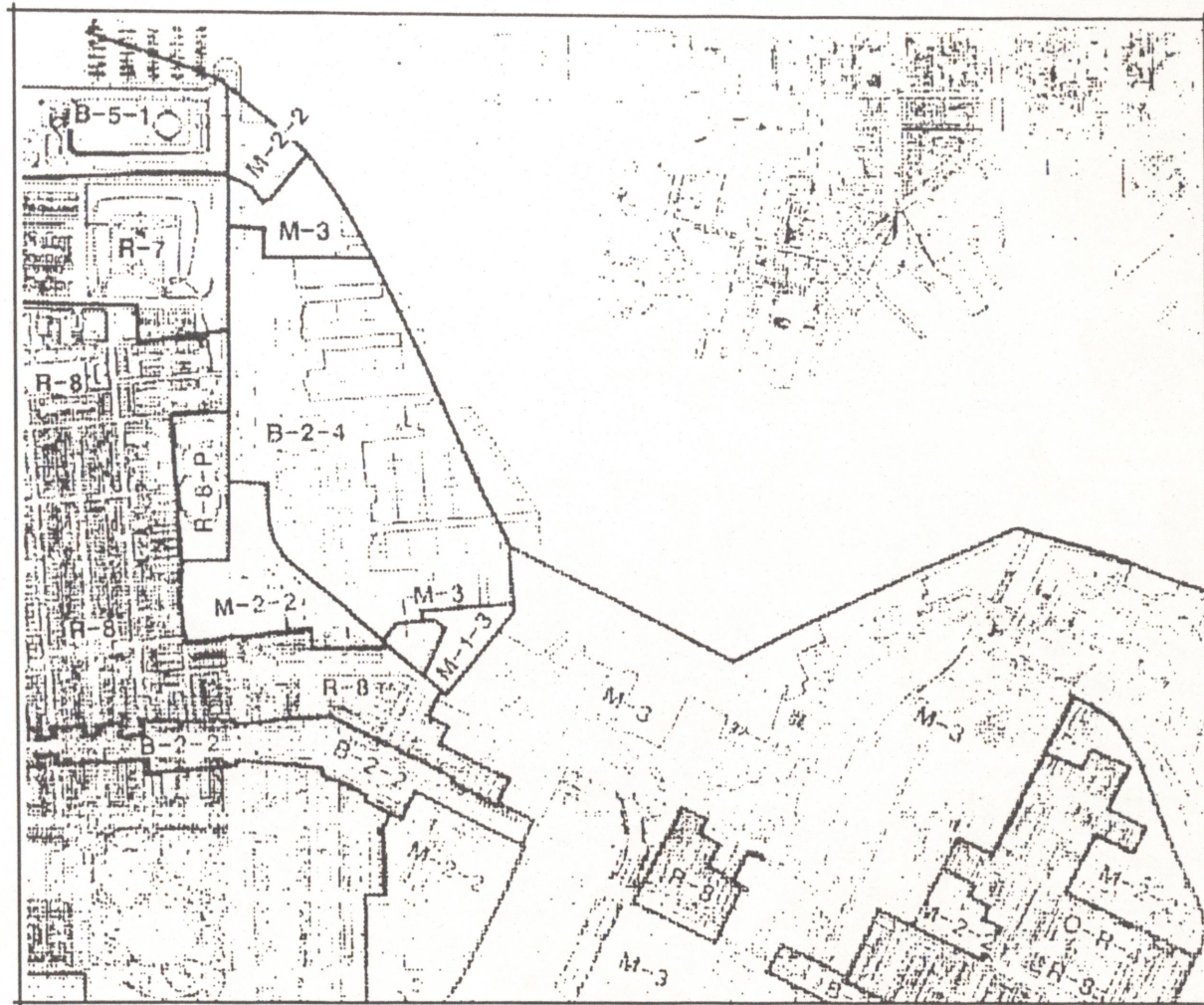


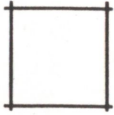
Map 2: Site Zoning Division (Proposed by RTKL)



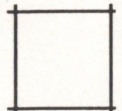
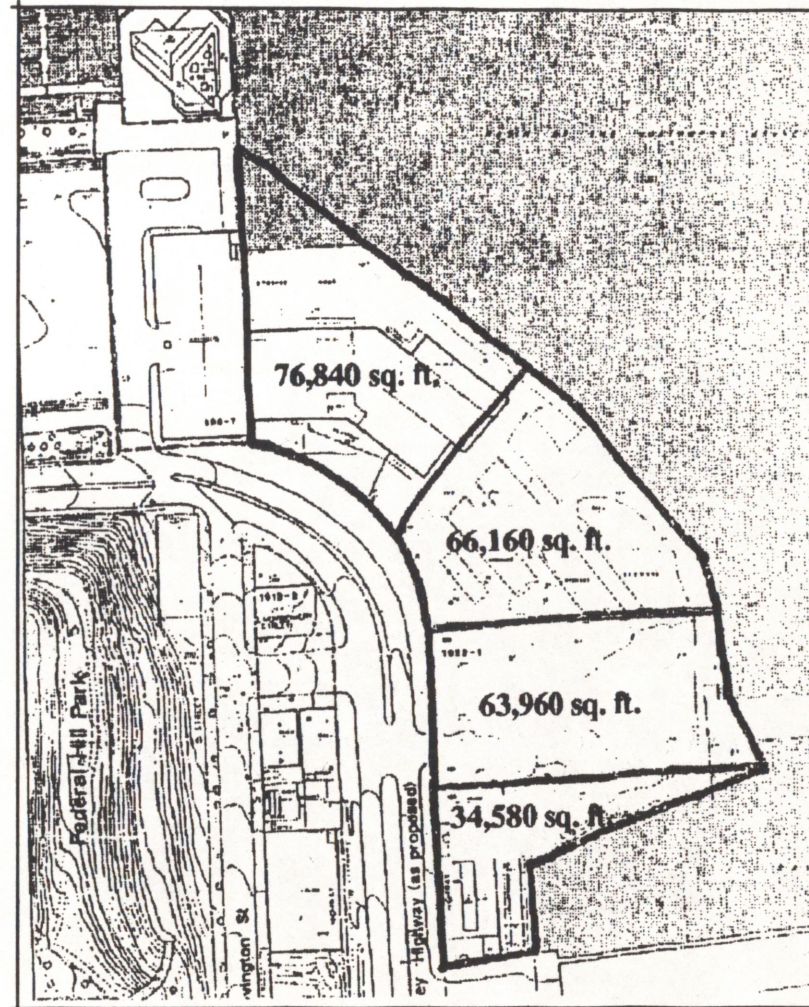


Map 3: Zoning.





Map 4: Total Area of The Site.



a public promenade of no less than 30 feet in width shall be provided continuously along the water's edge throughout the site. An easement or other legally enforceable mechanism for public pedestrian circulation shall be established for the required promenade. In limited areas, where it can be demonstrated that it is functionally and economically justified, the Commissioner may allow a promenade of lesser width, or a reasonable setback from the edge.

7-View Corridors: The preservation of views generally from west to east is a major objective plan. Particularly important is to protect and enhance the views of the outer harbor from a substantial portion of the eastern face of the Federal Hill from the northern edge of Warren Avenue to the northern edge of the park.

OTHER REQUIREMENTS.

The standards, guidelines, height limitations, etc., contained in this Renewal Plan are over and above codes and the ordinances of the City of Baltimore.

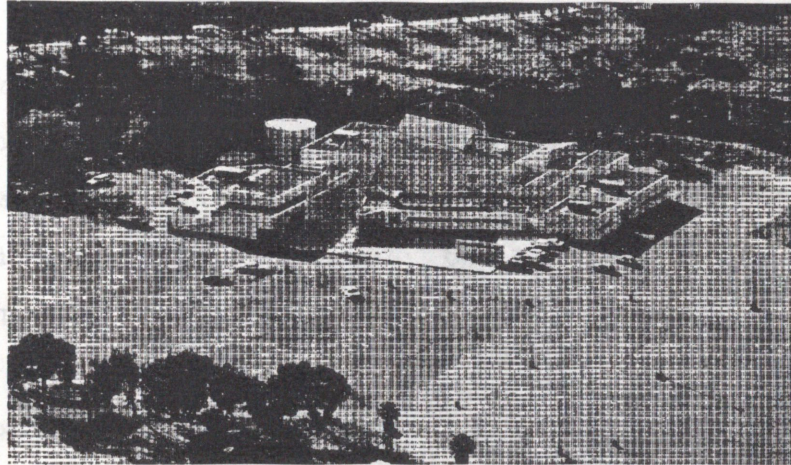
NOTES;

"Most of the Propeller Yard is within the Inner Harbor Project I Urban Renewal Area. There are no development controls on properties other than the limits imposed by zoning."¹⁰

For the purpose of the thesis project, I am using the study for the Urban Renewal Plan proposed by RTKL in combination with the Zoning Ordinance for the basic guidelines of the Harborview Maritime Museum design, and the site development.

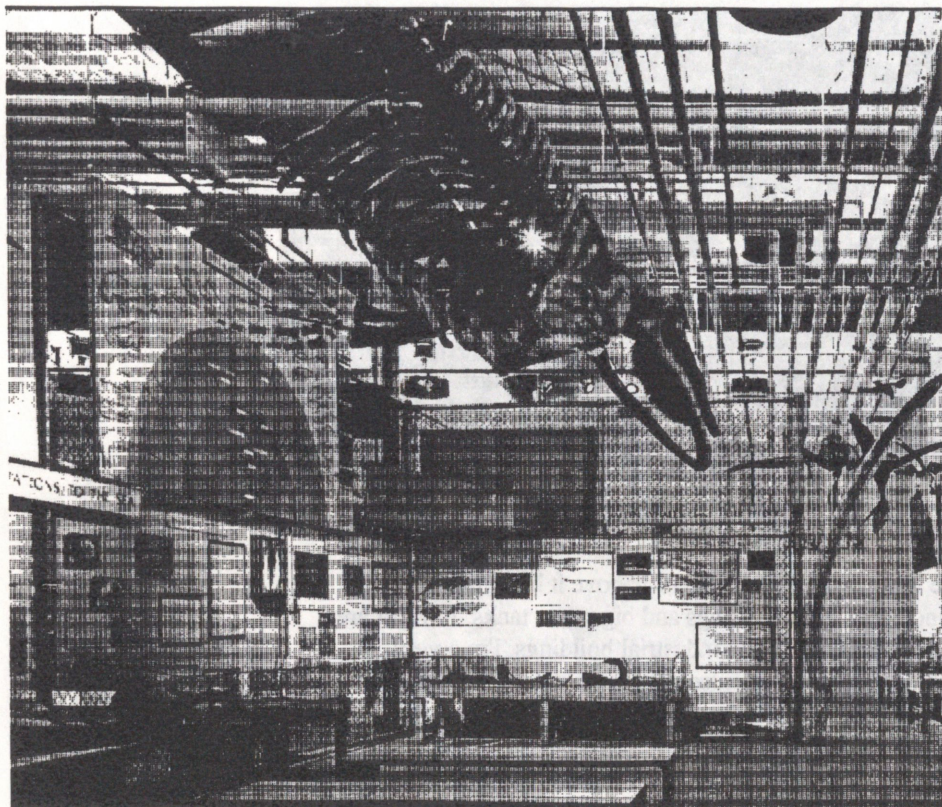
7

Precedent: Case Study 1, Cabrillo Maritime Museum.



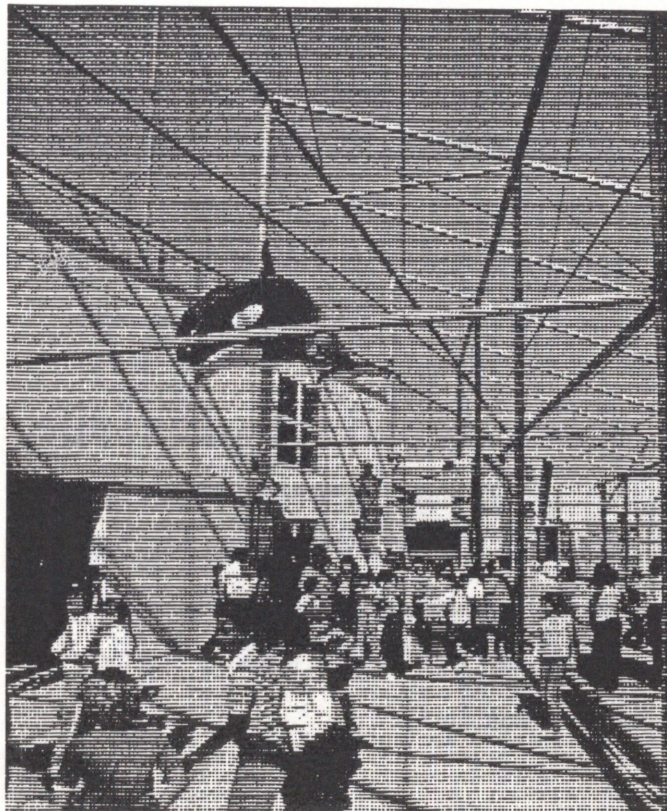
"The site was a parking lot. The fort above it has chain-links fences, industrial type buildings and big water tanks. In front are lots of large ships and many industrial buildings. I'm a very traditional architect in the sense that I'm interested in context."

-Frank O. Gehry. 1981-



The 20,000 square foot Cabrillo Maritime Museum, is designed to house both exhibit and research facilities for the marine life along California Coast and the surrounding ocean.

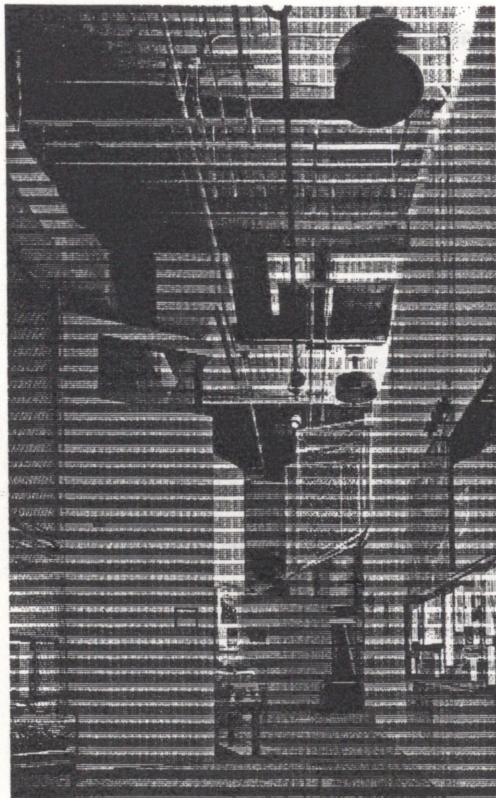
"The project is also designed to take advantage of a temperate climate by putting all major circulation area outdoors. A series of pavilions housing auditorium, exhibit, research, classroom, service, and administrative functions are grouped



around a steel mesh 'shadow' structure which can be used for outdoor exhibit and gatherings."⁵

"The exhibit is designed to provide two distinctive viewing circumstances. First there is a low lighting level tunnel through the exhibit with windows into the aquaria for close viewing of the fish. The aquaria also project outside the tunnel where all of the piping and the apparatus necessary to maintain the aquaria are displayed as well as graphic explaining the exhibit. Throughout the exhibit there are interconnection between the two circulation routes."

"Adjoining the exhibit building are the labs into which one can look from the court-part of the didactic strategy of the museum to familiarize visitors with the processes



involved in the work displayed. The administration building, mirror-clad on one side, defines two courtyard areas, and direct visitors from the entrance toward the exhibition building. The 287-seat auditorium, the loading dock at the rear can be used as a stage for outdoor performance....The workings of the aquaria, laboratories, even the pipes for the sea water, are bound into architecture and its invitation to explore."⁴

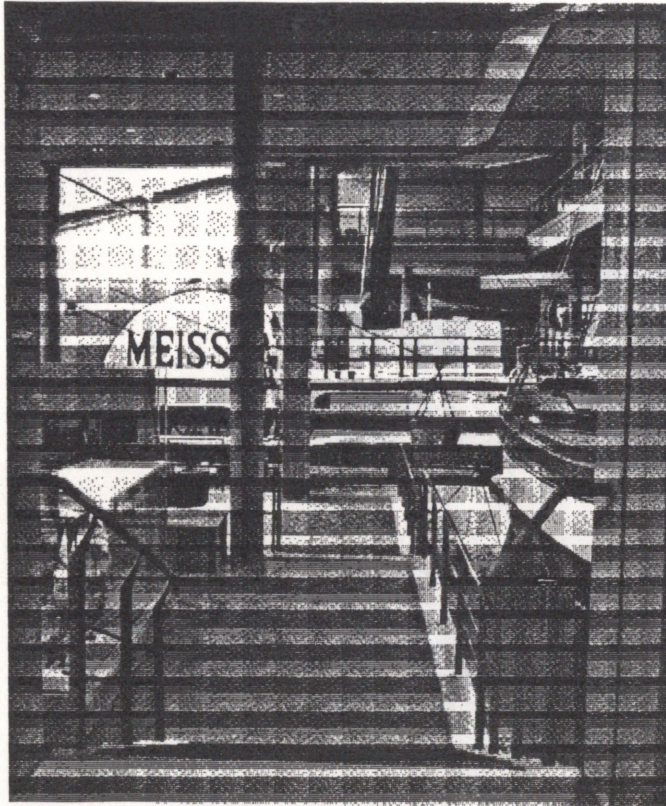
The Cabrillo Maritime Museum responds to the relationship of the design to climatic and site issues. But I am not certain that using chain-link fences is the appropriate respond to represent industrial issues on the surrounding site. The museum does, however, help me determining the spaces, and exhibit, except for the aquaria, that are needed for a similar type of project in Baltimore.

Precedent: Case Study 2, Deutsches Schiffahrtsmuseum.



"If the Maritime Museum is not Sharoun's greatest building, it is perhaps his most subtle. "

-Peter Blundell Jones-



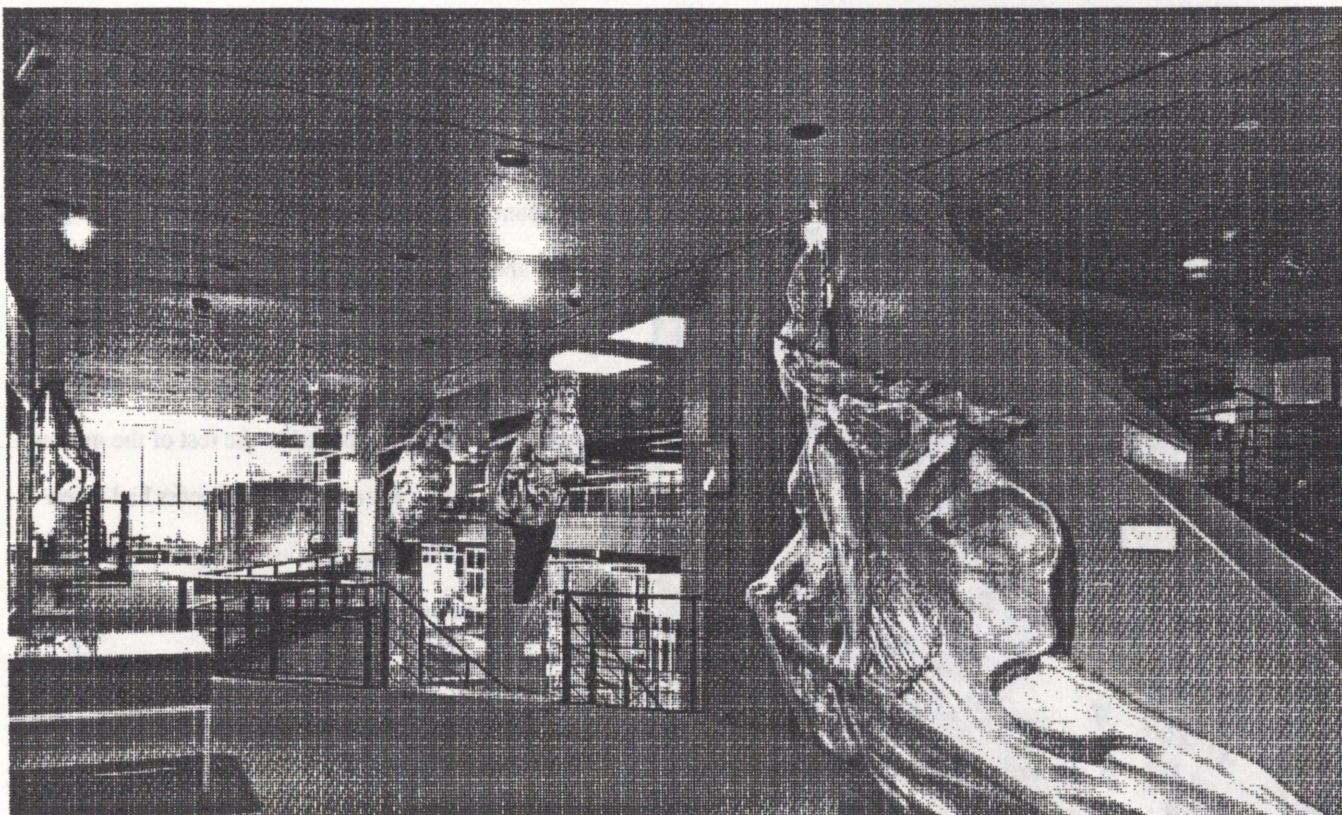
The Deutsches Shffahrtsmuseum was designed by Hans Scharoun in late 1960's and was constructed between 1969 to 1975. "The museum occupies a narrow piece of land between the Wesser Estuary and the old harbor; moored boats and water are its natural neighbours. The design creates a building which is not so much like the four square constructions we associates with ports-warehouses, quay piers- but much more like the fluid forms of ships made for movement. It is of course a formal vocabulary which is strongly associated with Scharoun and which is also found in his two major buildings. In all those instances, in fact the flow of the people became a strong determinants of the building form; in the case of a museum a highly important and



appropriate consideration, in the case of a library perhaps less so.....”⁷

The most specific and major space of the Museum contains The Bremen Cog, a ship dating from about 1380 which was dredged from the harbor in 1962. The ship was treated and kept damp for about 20 years before being dried out. The Gallery around the ship was opened to the rest of the museum and to the public after the whole process had taken place, to make one continuous group of related but individual and identifiable spaces.

The Museum has been described as one of Scharoun’s successfull buildings. Micheal Brawne wrote, “The Museum’s success is probably due to

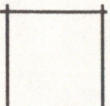




the happy coincidence of Scharoun's liking for an architecture of incident within non-rectilinear geometry and the nature of ships and harbor which have very much the same characteristics. The building, its setting and the exhibit come naturally together."

This particular case study provides ideas on how to integrate full scale exhibits with the architecture. But I am not really familiar with the architect to agree with the author that this piece of architecture is the architect's greatest building. There are however, an open air exhibition of ships in the old harbor area, which could have been interesting if they were integrated with the architecture. But visitors who approach the building from the town center would be able to see the view of the ships and building completely enmeshed.

Views of the interior seems to be an important consideration in Scharoun's architecture. From the galleries, the views are not only of real boats but also nautical elements in the building such as windows in the form of portholes. Large windows reveals the exhibition of ships in the harbor from the galleries. Moreover, from the paddle steamer, with the reception space on the left and exhibition galleries above; the view is like the decks of a ship seen from the bridge.

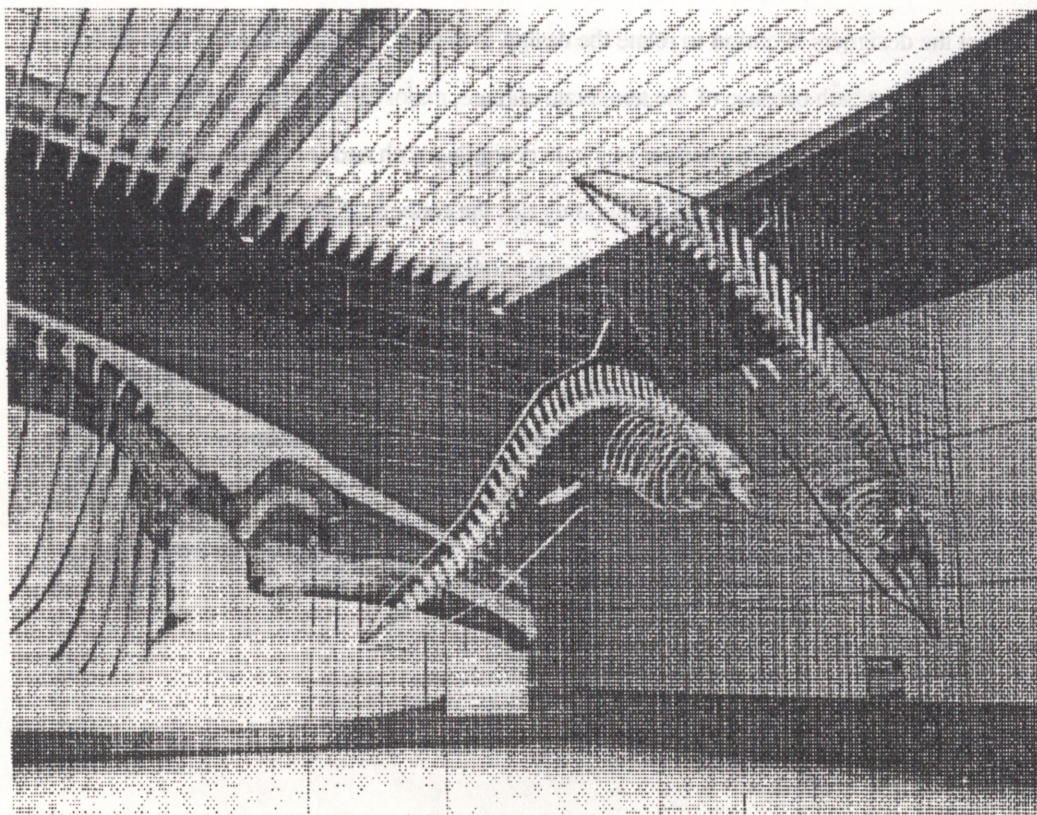


Summary.

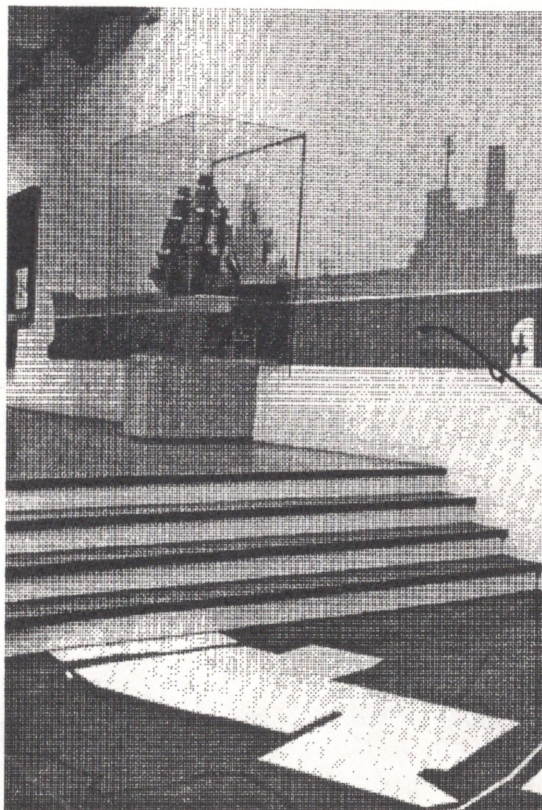
Both case studies represent the designers intention to relate the design to the site. In Frank Gehry's case he was using climate issues as the starting point in which because of the temperate climate, major circulations was put outside of the building. But we cannot deny that circulation is the most important issue in designing both and (even all) Museums. Anyway, in the case of Scharoun's museum, views inside and outside of the building ties the concept of his design; from a point of standing to a point of interest, the exhibit and the architecture seems to be tied together.

In the case of Harborview Maritime Museum, climate uncertainty during winter and summer could be a factor that discourage visitors from the facilities, if all major circulations were put on the exterior. Views as in the case of a Museum designed by Scharoun cannot be determined at this point although it could be used as a design guidelines.

Above all, both case study are influential and will be a guideline in designing the Harborview Maritime Museum. Photographs on the next few pages are from few other Maritime Museum which is worth glancing into for exhibit set up purposes.



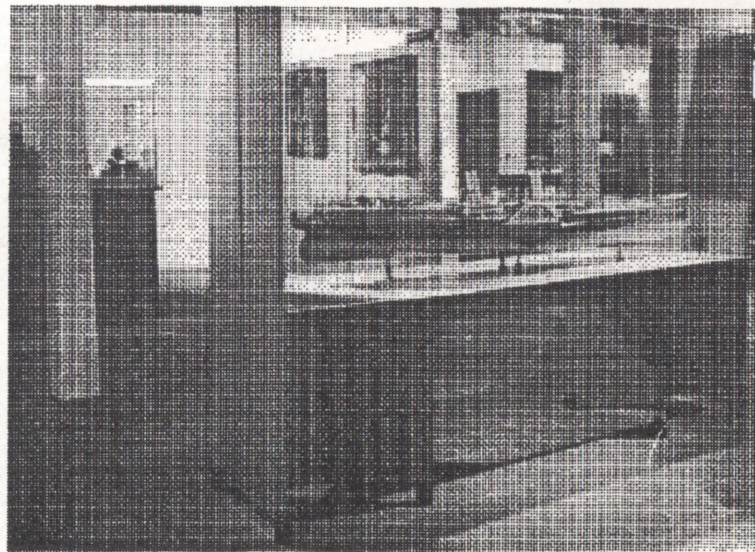
< **Suspended Exhibit:**
A section of the
exhibit on marine
mammals.
(Senckenburg
Museum, Frankfurt
am Main, Germany)
Photograph by Bob
Peacock.



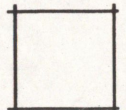
< Model exhibit: (Amsterdam Historisch Museum, Amsterdam.)
Photograph by Bob Peacock.

Freestanding Case System: (The Dutch PTT Museum, The Hague,
Netherland.) Architect; Peter Vermuluen. Photograph by Bob
Peacock.

v



The Inner Harbor, under the guidelines of the redevelopment program has become a tourist attraction place. A survey that was done in mid-1980's after the completion of the first phase of the National Aquarium estimates more than 600,000 visitors come to the Harbor area annually. Therefore, most of the facilities that will be provided, is to be used for tourist attraction purposes. Besides tourist, its educational facilities is to be used to educate the local, school children, and even university's scholars about the maritime industry, and researches, in the state of Maryland, but specifically in Baltimore greater coastal area.



Spaces	Total Sq. Ft.
Lobby:	5,806 sq. ft.
Reception & Enquiry Services.	5,000 sq. ft.
Waiting Area.	576 sq. ft.
Leaflet Distribution Area.	100 sq. ft.
Signage/ Location Map.	
Lounge.	130 sq. ft.
Theatre (Audio Visual):	7,084 sq.ft.
Projection & Sound Booth.	200 sq. ft.
Office.	300 sq. ft.
Queuing Space.	
Theatre (Lecture):	2,800 sq. ft.
Backstage.	
Projection Booth.	100 sq. ft.
Exhibit Areas:	75,000 sq. ft.
Temporary Exhibit.	40 %
Permanent Exhibit.	60 %
Reserve Collection.	2,000 sq. ft.
Controlled Access Storage.	2,000 sq. ft.
Study Space.	
Orientation	1,600 sq. ft.

Storage (General).

15,000 sq. ft.

Workshop.

1,950 sq. ft.

Machine Tool Room

200 sq. ft.

Material Storage

150 sq. ft.

Maintenance.

443 sq. ft.

Research Area.

200 sq. ft.

Loading Area.

310 sq. ft.

Administration:

1,010 sq. ft.

Offices.

250 sq. ft.

Meeting Room.

560 sq. ft.

Lounge.

200 sq. ft.

Security:

120 sq. ft.

Retail/ Sales:

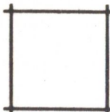
700 sq. ft.

Restaurant:

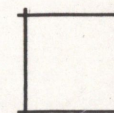
3,000 sq. ft.

Educational Facilities:

11,591 sq. ft.



Offices.	1,000 sq. ft.	
Word Processor.	54 sq. ft.	
Files.	430 sq. ft.	
Group Room.	200 sq. ft.	
Activity Space.	750 sq. ft.	
Lab/ Workshop.	2,250 sq. ft.	
Study Collection.	800 sq. ft.	
Meeting Room.	1,200 sq. ft.	
Library.	2,200 sq. ft.	
Research.	200 sq. ft.	
PMT.	86 sq. ft.	
Print Room.	431 sq. ft.	
Photographic Reproduction.	540 sq. ft.	
Lounge.	500 sq. ft.	
Restroom:		960 sq. ft.
Public.	480 sq. ft.	
Staff.	480 sq. ft.	
Mechanical:		12,000 sq. ft.
Circulation:		15,000 sq. ft.
Total Square Feet		154,574 Square Feet



1a - *Beal-Ti-Mor*.

1b - *Queen Of The Bay*.

1c - *The Inner-Harbor*.

Keith, Robert C., *Baltimore Harbor; A Picture History*. Ocean World Publishing Co. Inc. Baltimore. 1988.

2 - Cauty, Donald, *Baltimore's Lively Downtown Lagoon*. AIA Journal. June 1981.

3 - Baisah, Jaafar, *The Inner Harbor Marketplace*. Thesis 11. Winter 1989.

4 - Mason, Andrew, *Frank Gehry; Buildings and Projects*. Rizzoli International Publication Inc. 1985.

5 - Frank Gehry, *Cabrillo Maritime Museum*. GA Documents. No. 5 A.D.A. Edita Tokyo. 1982.

6 - Coleman, Lawrence Vail, *Museum Buildings; A Planning Study, Vol. 1*. The American Association of Museum. Washinton D.C. 1950.

7 - Brawne, Micheal, *The Museum Interior; Temporary and Permanent Display Techniques*. Architectural Book Publishing Co. Inc. 1982.

8 - Mathews, Geoff, *Design and Development Guides; Museums and Art Galleries*. Butterworth Architecture. 1991.

9 - *Baltimore City Zoning Ordinance*, The City of Baltimore Planning Board.

10-*The Study of The Urban Renewal Project 1*. RTKL Associates Inc. Baltimore. 1991.



MONTANA STATE UNIVERSITY LIBRARIES



3 1762 10168711 7

" It is the lure of the water, its reflection, its endless movement and change that both captures man's imagination and provides a variety of opportunities from business to recreation, from active to passive activities... the water's edge is where life is most diverse and unique."

- L. Azeo Torre -

