

ABSTRACT

Title of Thesis:

FROM HILL TO HARBOR: SERVING WATER
AND PEOPLE ON BALTIMORE'S CIVIC
WATERFRONT

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Master of Architecture 2016

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People and cities alike derive their life from water. Water is consequently influenced by the actions of people and cities. This crucial relationship deserves to be commemorated, and also analyzed as further human development, sea level rise, and ecological remediation efforts influence its form. This thesis seeks to remember the past condition, recognize the current, and positively influence the future of this relationship in Baltimore's Inner Harbor through a waterfront park and harbor history museum. How can a building and a site work together to improve the health of local hydrology while still effectively serving its human community? This thesis weaves these opportunities together to create a responsible redesign of Rash Field and Federal Hill on the south side of the Inner Harbor in Baltimore.

FROM HILL TO HARBOR:
SERVING WATER AND PEOPLE ON BALTIMORE'S CIVIC WATERFRONT

by

Sean Michael Konig

Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
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Preface

Many urban waterfronts put a hard edge on the water, separating people from it.

They do not have to be this way.

Many urban bodies of water are polluted dumping grounds that lay neglected.

They do not have to be this way.

Building our cities around cars, we cut scars in the pedestrian fabric.

It does not have to be this way.

Architecture allows us to craft our environment in new, better ways. Moves both great and small can change the habits into which we've fallen. This thesis does not attempt to save the world, but simply improve a prominent piece of a single city.

Acknowledgements

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Chapter 1: From Cole's Harbor to Mr. Trash Wheel: The City Meets the Water

Cole's Harbor and Baltimore's Foundation

Colonization

People and cities alike derive their life from water. Water, consequently, reacts to the actions of people and cities. They form a network of interdependency that can guide civilizations and ecosystems to prosperity, or to ruin. As Europeans brought their strategies of settlement to the new world, they formed relationships with bodies of water largely untouched by human development.

The Chesapeake Bay seems a natural place for settlement: the various rivers allow for easy navigation, and the Delmarva Peninsula protects the Bay from the actions of the Atlantic Ocean. Around these rivers, towns sprung up, sponsored by the governments of the Lords Baltimore, on land put at their disposal by King James I of England. In tribute particularly to the first Lord Baltimore, George Calvert, many of these settlements were named "Baltimore:" one by the Elk River, one by the Bush River, and another somewhere on the Eastern Shore.¹ It was in 1729 that the site we now know as Baltimore was selected for settlement, along the Northwest branch of the Patapsco River near a swamp. The surveyor Philip Jones delineated a 60-acre tract, north of what was then called the Basin, but is now the location of the Inner

¹ Beirne, Francis F. *The Amiable Baltimoreans*. Hatboro, PA: Tradition Press, 1968. Page 17.

Harbor.² This tract contained separated houses and small farms, depicted in Figure 1 below. The north shore of the Basin reached where Water Street sits today. Only a handful of streets were laid out, ending where topography or marshland discouraged settlement. Calvert Street and St. Paul Street were designed to drain into the Basin.³

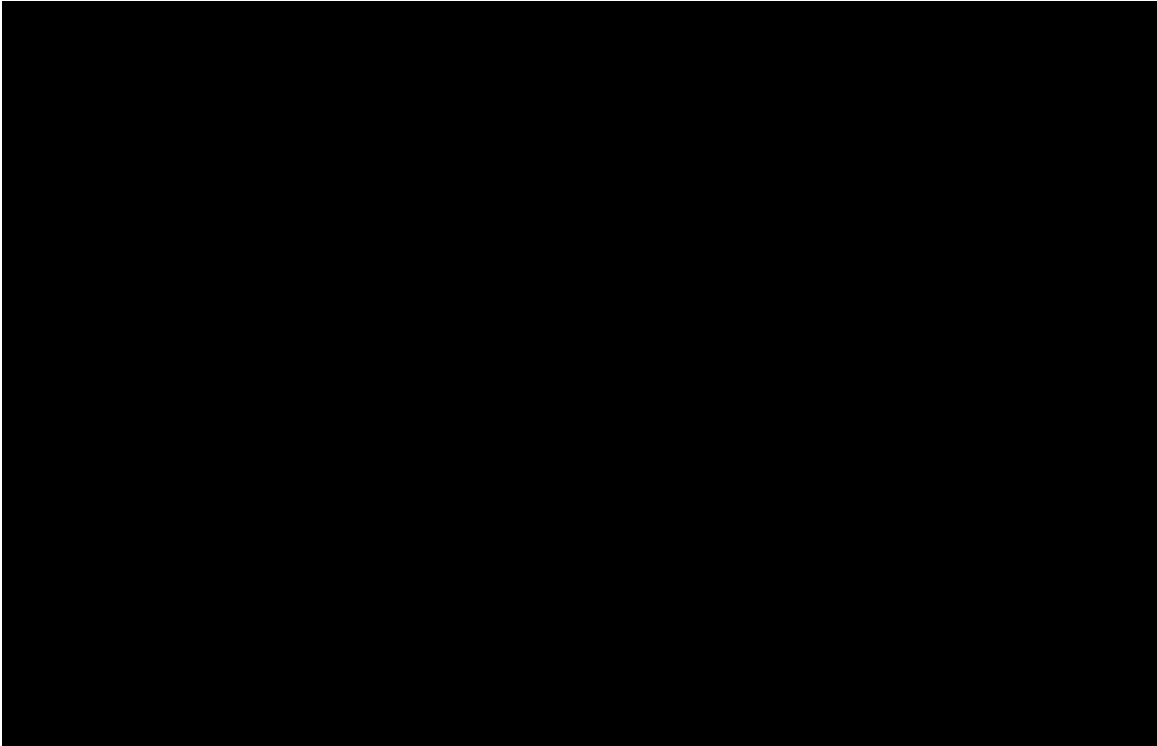


Figure 1 - View of Baltimore from John Moale's property, 1752.

It initially served as a place of export for tobacco grown on farms surrounding the town. It languished in comparison to its competitors on the bay, including Elkridge Landing, which was also situated on the Patapsco. As roads to York, Frederick, and Reisterstown were developed, Baltimore was combined with Jones Town to the east, so that the Jones Falls were now within the town. A public wharf

² Baltimore City Department of Planning. *The Baltimore Harbor*. Baltimore: Dept. of Planning, 1985. Page 1.

³ Olson, Sherry L. *Baltimore: The Building of an American City*. Baltimore: Johns Hopkins University, 1997. Page 8.

was built at the end of Calvert Street, west of the location of today's Pier One. Regulations passed by the Maryland State Legislature allowed property owners in Baltimore to create land for themselves by dredging and filling along the harbor.⁴ This would prove instrumental in the future formation of the edges of the harbor.

Trade and Growth

Baltimore grew into a city of 30,000 by the end of the eighteenth century, largely as a result of wars. The French and Indian War and the Revolution, as well as the French Revolution, caused shortages of wheat through the interruption of shipping lanes. Baltimore had turned primarily into an exporter of wheat rather than tobacco after the decline of tobacco prices in the 1730s, so it was well positioned to benefit from these shortages. Baltimore also benefitted from further land annexes, including Fell's Point, which provided it with deeper water for ships to anchor. Mills built along the Jones Falls and Gwynn Falls also drew workers, many of them new immigrants from Scotland, Ireland, and Germany, by way of Pennsylvania.⁵ Figure 2 offers a view of what Baltimore looked like at the close of the American Revolution – the Jones Falls curved into the city fabric. Also of note is the development of the Basin's edge; four wharfs project into the body of water, but the rest of the edge remains primarily based on the original condition.

⁴ Olson, 9.

⁵ Olson, 10-15.

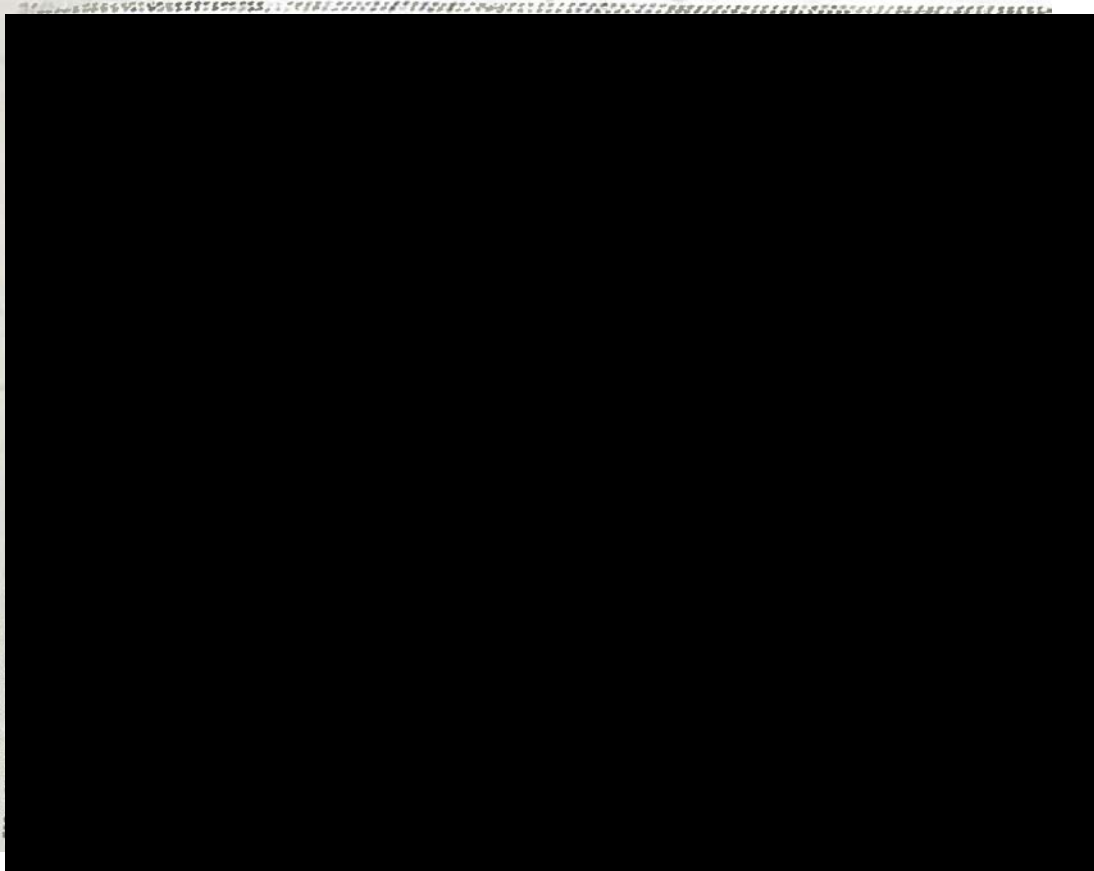


Figure 2 – Plan of Baltimore, circa 1785. Source: Olson, Sherry – Baltimore.

Following the Revolution, many streets were widened in order to accommodate the increase in population and traffic. It was in 1789 that the Jones Falls was redirected through a channel, and its westward bend was filled in. This allowed the extension of Calvert Street.⁶ By 1792, the city had truly begun to expand its edges into the harbor, and make those edges firm. Figure 3 shows a plan of Baltimore in 1792, including the development of docks and building along Charles Street on the Basin's western edge, and longer docks on the north side of the Basin, west of the terminus of Jones Falls.

⁶ Olson, 20.

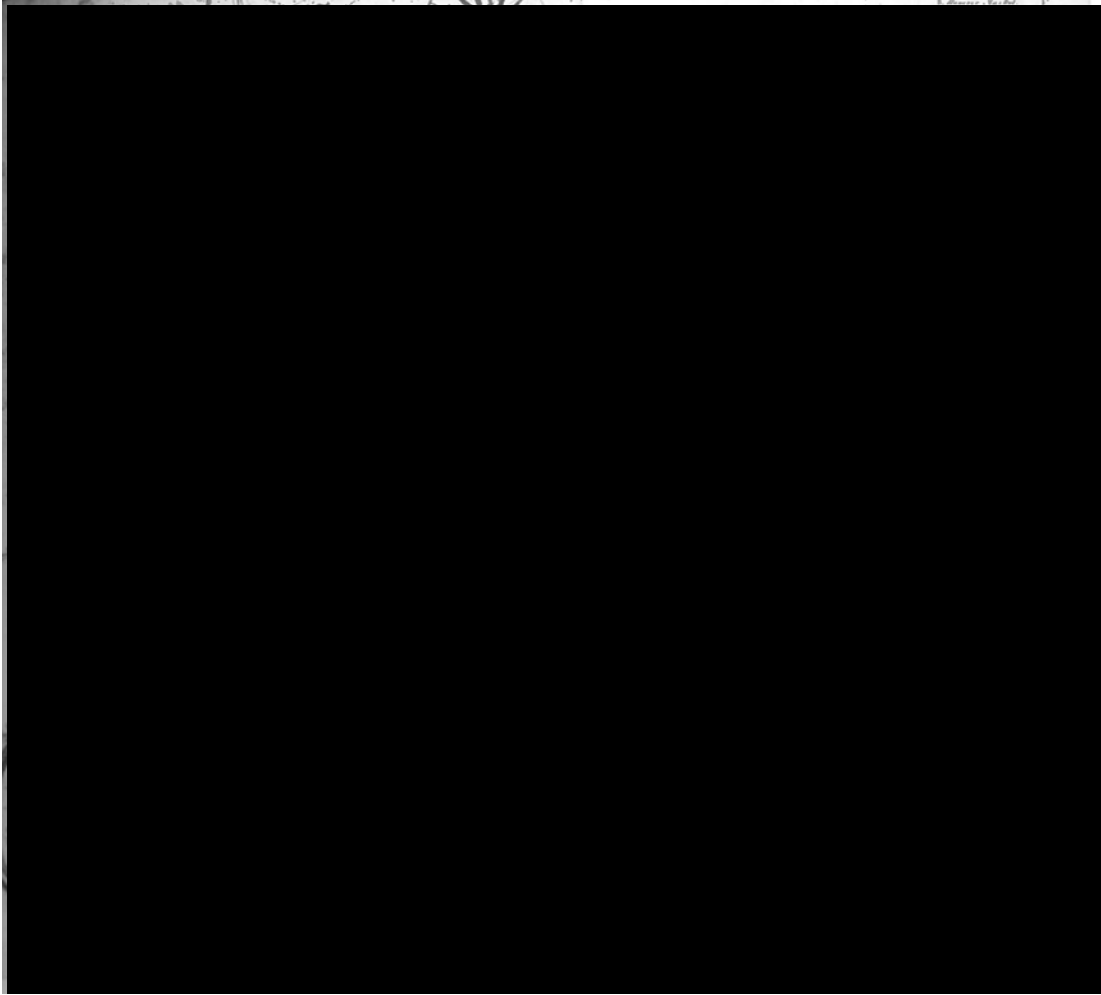


Figure 3 – Plan of Baltimore and neighboring settlements, 1792. Source: Olson.

Fingers of water, one can note, extend as far north as Water Street, but the docks extend as far south as to be parallel with Conway Street. Also of interest is the shape of Fell's Point – where now sit many buildings and streets was only water. The south edge of the basin seems to follow an organic shape that hews closer to the foot of Federal Hill than the current land there.

The Industrial Revolution

Further Infill and Docks

By 1818, Light Street had been extended through the Basin, and several new blocks of buildings (primarily warehouses) had been built where previously there had only been water. Figure 4 comes from the process of linking the two sides of Pratt Street across the old docks that reached to Water Street.

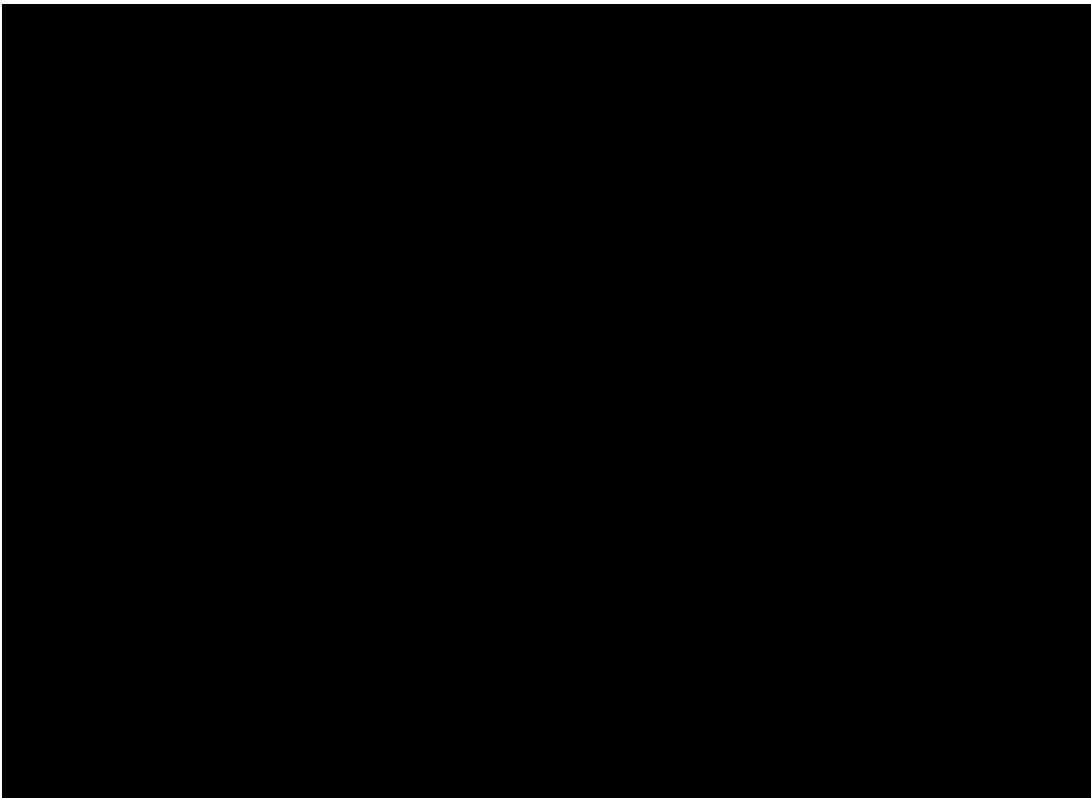


Figure 4 - Study of the Basin, in preparation for the extension of Pratt Street. Source: Olson.

This would come to pass by 1823, as would the further extension of piers into the Basin (see Figure 5), even further than the present-day piers. By this time, the infill of Fell's Point had largely occurred, and the edge of Fell's Point was littered with docks. This development, in addition to the growth of the city northward depicted by Figure 5, is a testament to the city's growing power in international trade and industry.

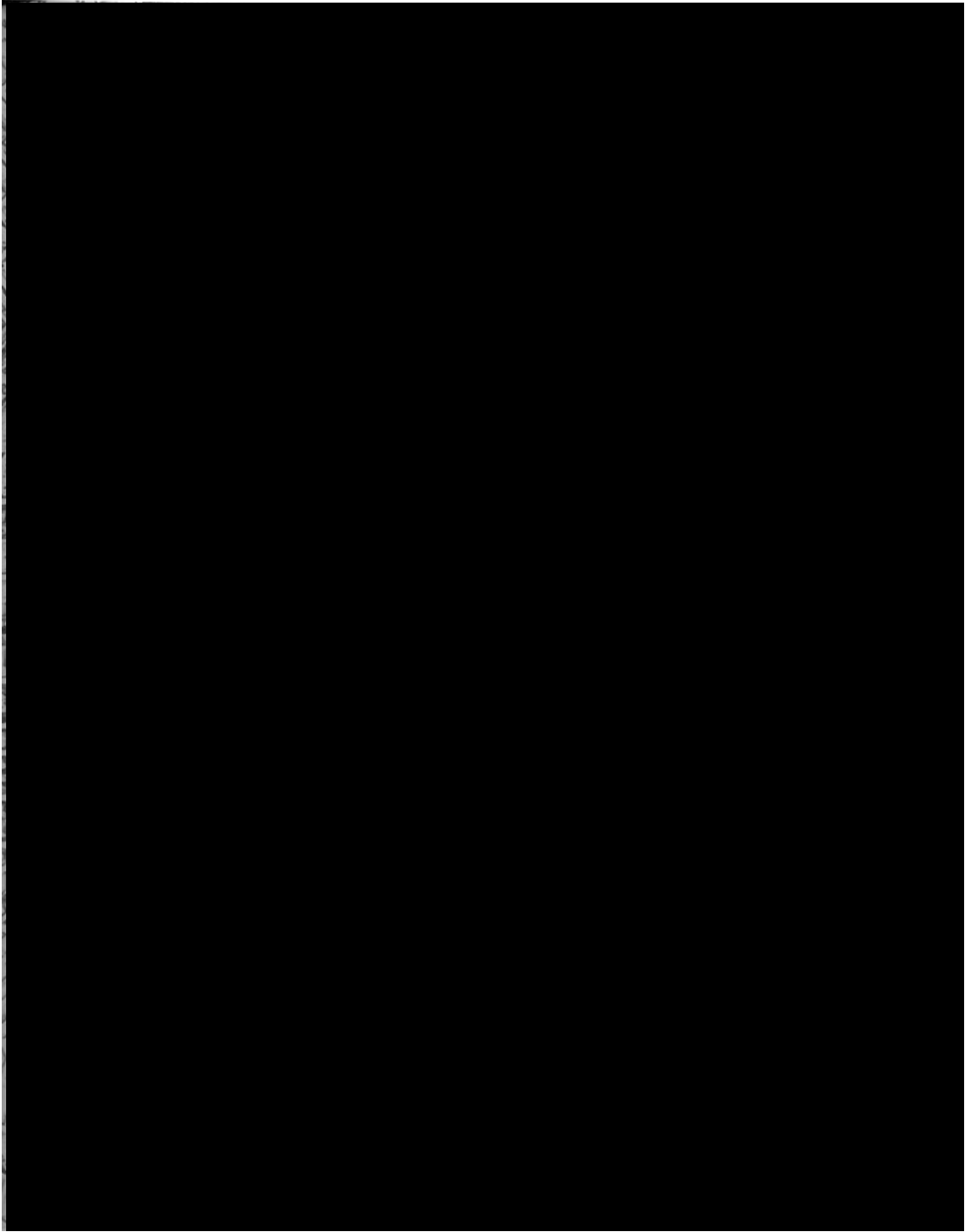


Figure 5– Baltimore, circa 1823. Source: Olson.

The power of Baltimore drew thousand of immigrants to the city; the population of the entire city doubled between 1790 and 1800, and again doubled

between 1800 and 1810.⁷ The diversity in race and class of these immigrants led to widespread poverty and violence that hampered the city's growth, but it remained an industrial powerhouse. Baltimore grew even more influential at the inception of the Baltimore and Ohio Railroad, which allowed for the transporting of goods to the port. It stood as one of the most important railroads in the country for decades.⁸

Pollution

The 1850s saw city officials finally notice the pollution in the Jones Falls, caused by lack of regulation on dumping practices. Mud and worse had accumulated on the bottom of the stream, several feet deep. To solve this issue and others facing the harbor, the city created an engineering committee to propose solutions. The committee first recommended banning the emptying of water closets into the harbor and the Falls (there were near 20,000 illegal connections to the water bodies at the time). The committee also proposed an organized series of storm drains and sewers to deal with flooding and pollution, though the implementation of these strategies would not come for years.⁹

It merits mention that the waterfront property at this time was exclusively private: warehouses and offices fronted the harbor, since they served the commerce based there. The extensive development along Light and Pratt streets, as well as at Fell's Point, was limited from growing any further by recommendation of the city planning department. They recommended pursuing further dock and wharf building

⁷ Olson, 41.

⁸ Olson, 105.

⁹ Olson, 138.

on the south side of the Basin and in Canton instead.¹⁰ Figure 6 shows the condition of the harbor in 1869, shortly after the planning department's recommendations were released.



Figure 6 – A segment of E. Sachse & Co.'s 1869 aerial map of Baltimore. Source: Library of Congress, <http://www.loc.gov/resource/g3844b.pm002540/>

Due to infrastructure deficiencies, frequent flooding plagued Jones Falls and the surrounding neighborhoods. A flood in 1868 washed out all of the bridges crossing the Falls, and flooded 2000 basements. On top of those issues, the harbor was still polluted. The only solution that the city government implemented was the raising of the walls of the Jones Falls. This was only a temporary solution to larger problems, but the city's money was going toward building new, sturdier bridges.¹¹

¹⁰ Olson, 157.

¹¹ Olson, 163.

Business

The docks along the harbor came to be divided so: passenger ocean liners (powered by steam) docked along Light Street (see Figure 7) while the ships around the Pratt Street Piers mostly brought goods (See Figure 8). The ships further south mostly served the nearby industry.

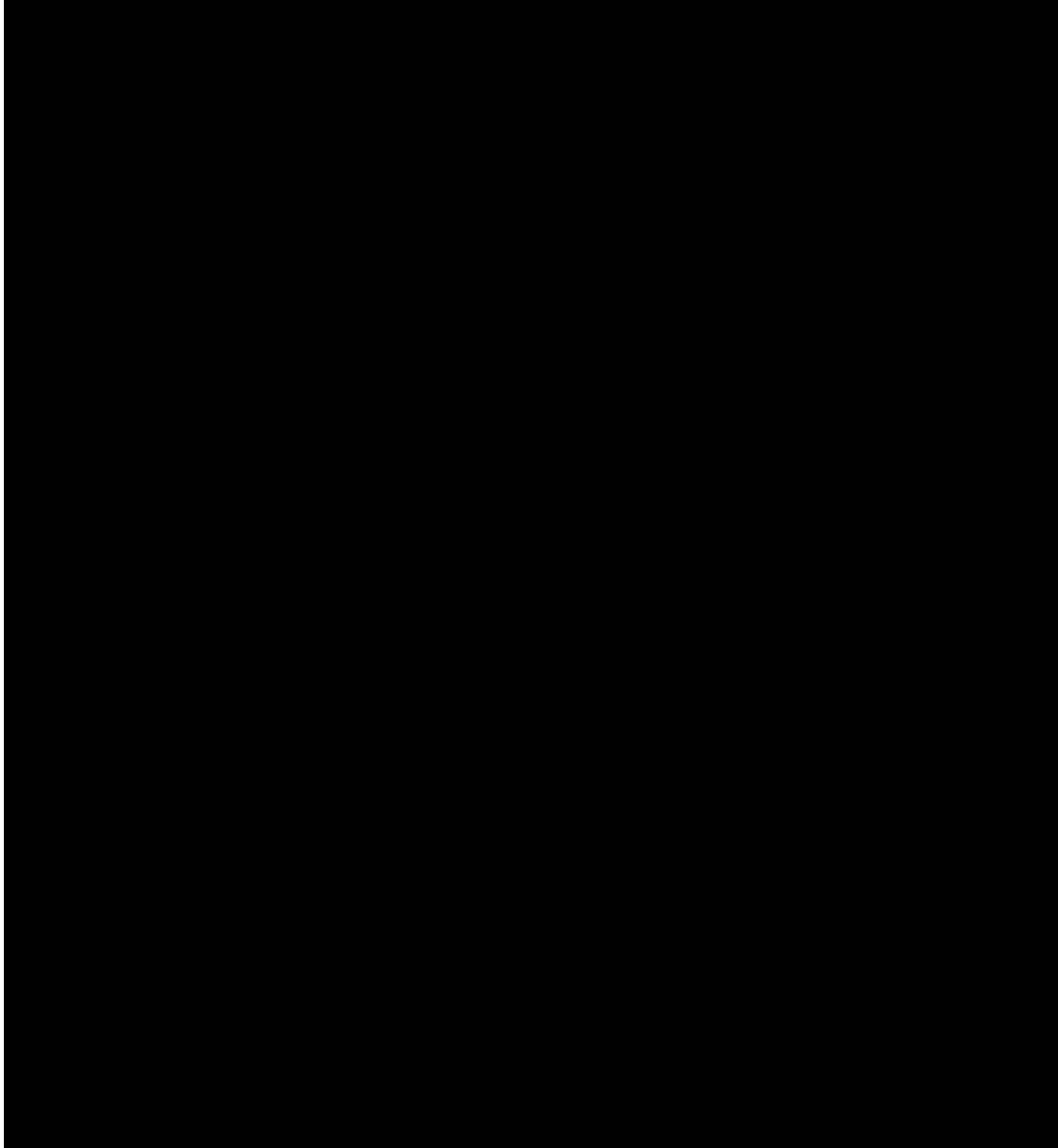


Figure 7– Light Street wharf in 1910. Source: Olson.

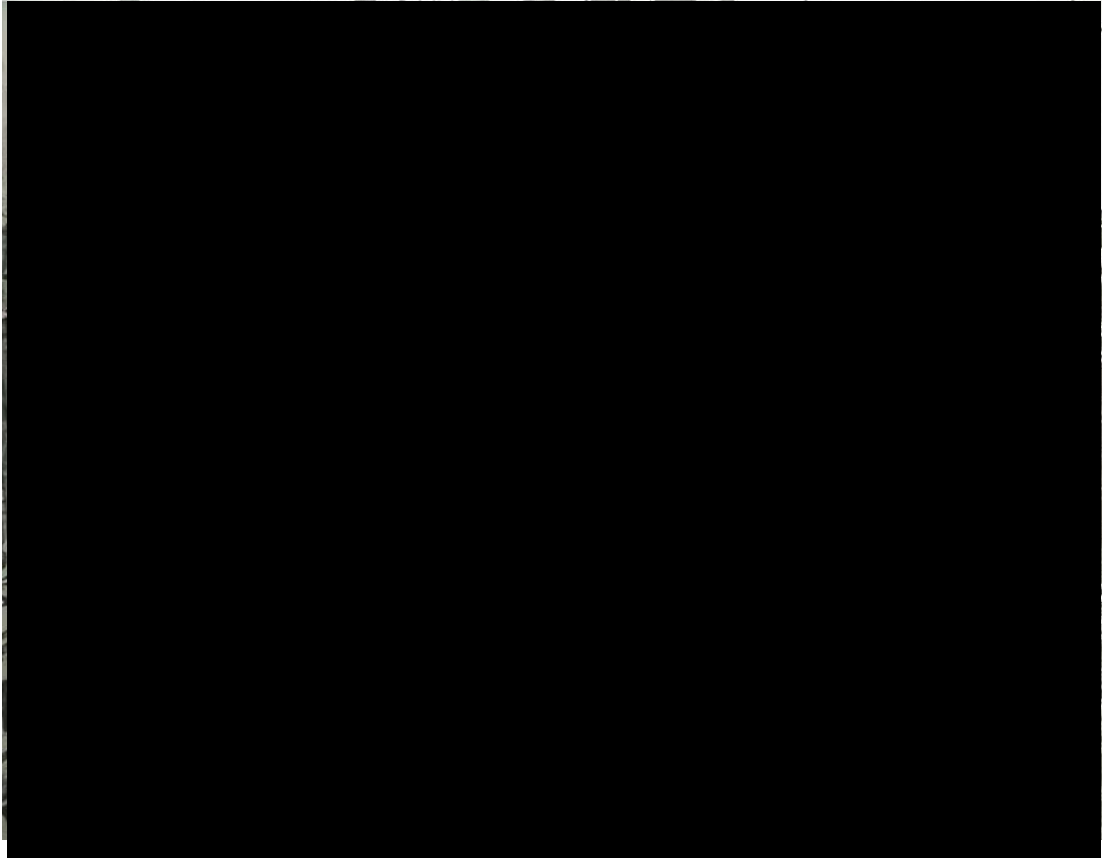


Figure 8– Pier 4 as it looked at the turn of the 20th century. Source: Olson.

The Great Fire and the Recovery

The Fire

The City of Baltimore suffered a significant setback in the winter of 1904, when a major fire destroyed over a thousand buildings, including every building on the Pratt Street piers. Figure 9 shows the extent of the damage.



Figure 9– A contemporary map showing the extent of the 1904 fire. Source: Christhilf, et al.

The Recovery

The city rebounded quickly, and took the opportunity to rebuild the burned blocks taller. By 1911, all evidence of the fire was gone. (See figure 10.) The edges of the harbor were still characterized by docks crowded by steamships. Warehouses existed along some piers, while other piers were left empty for offloading of cargo.¹²

¹² Olson, 249.

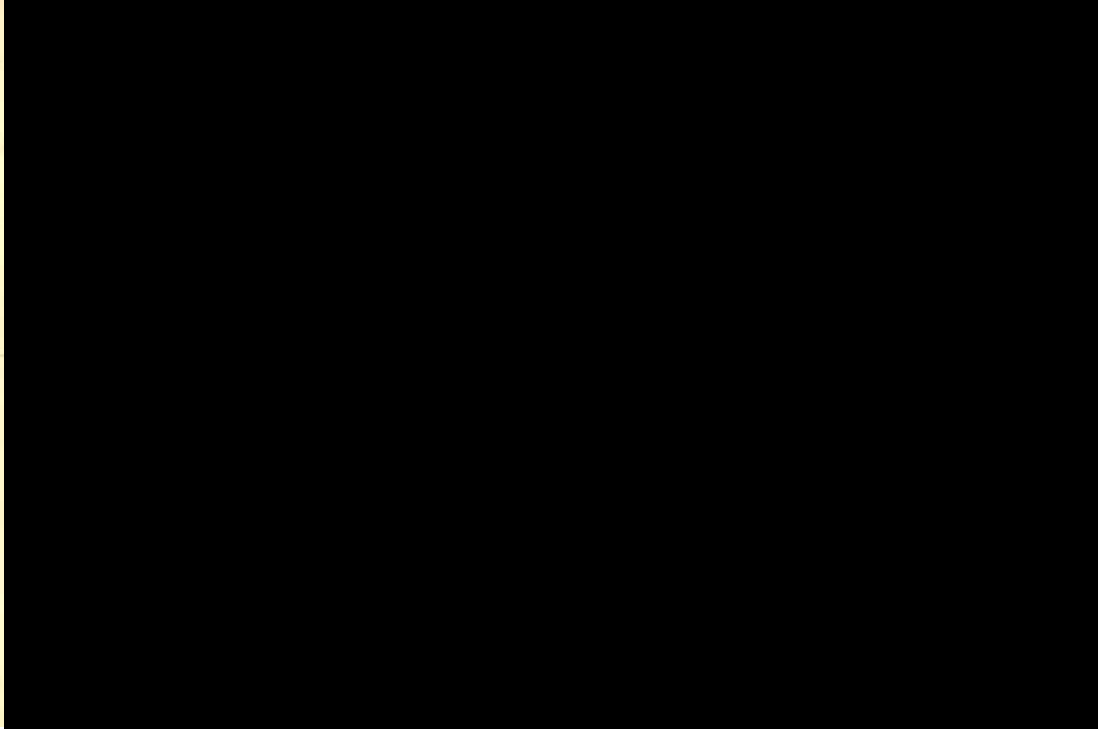


Figure 10– Edward Spofford’s 1911 bird’s-eye view of the Inner Harbor, showing recovery less than a decade after the fire. Source: Library of Congress. <http://www.loc.gov/resource/g3844b.pm002550/>

Wartime Development

The port did well during and directly after the Second World War, exporting primarily wheat and coal to European nations in need. This prosperity was not to last; other ports out-competed Baltimore, due partly to the other ports’ more modern facilities. Much of Baltimore’s port infrastructure was owned by the railroads, which were bleeding money because of competition from cars. In response to these issues, the state government created the Maryland Port Authority in 1956. The MPA invested millions of dollars in the improvement of facilities in the harbor, but the inner harbor became increasingly derelict.¹³

¹³ Harbor, 10.

Charles Center, McKeldin and Rouse

Charles Center

In response to the decline of the inner basin docks, as well as the historical downtown area, a group of business owners formed the Committee for Downtown to seek solutions. They joined with the Greater Baltimore Committee, the membership of which was business executives. Together they partnered with the city government on an urban renewal project called Charles Center, to be located along Charles Street between Fayette and Saratoga Street. This consisted of a handful of skyscrapers with plazas between.¹⁴

Turning to the Harbor

As he assumed the office of Mayor of Baltimore in 1963, Theodore McKeldin Jr. spoke about his vision of a revitalized harbor surrounded by high-rise offices and apartments, parks, and marinas. This would all take the place of the port buildings that had by-and-large been removed in the 1950s and replaced with widened roads and parking lots. (See Figure 11.) In 1964, the firm Wallace-McHarg revealed a plan for the urban renewal project at the harbor. They framed the opportunity and proposal thusly: "... the 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 will thrust the living, 24-hour-a-day city into intimate, vivacious contact with the harbor whence it sprang."¹⁵

¹⁴ Harbor, 80-81.

¹⁵ Harbor, 81.

Many obstacles still stood in the way of the city's goals. Derelict structures still stood on the north and south edges of the harbor, and the western edge belonged entirely to parking lots beside Light Street. In addition to those issues of land, the water in the harbor was significantly polluted.

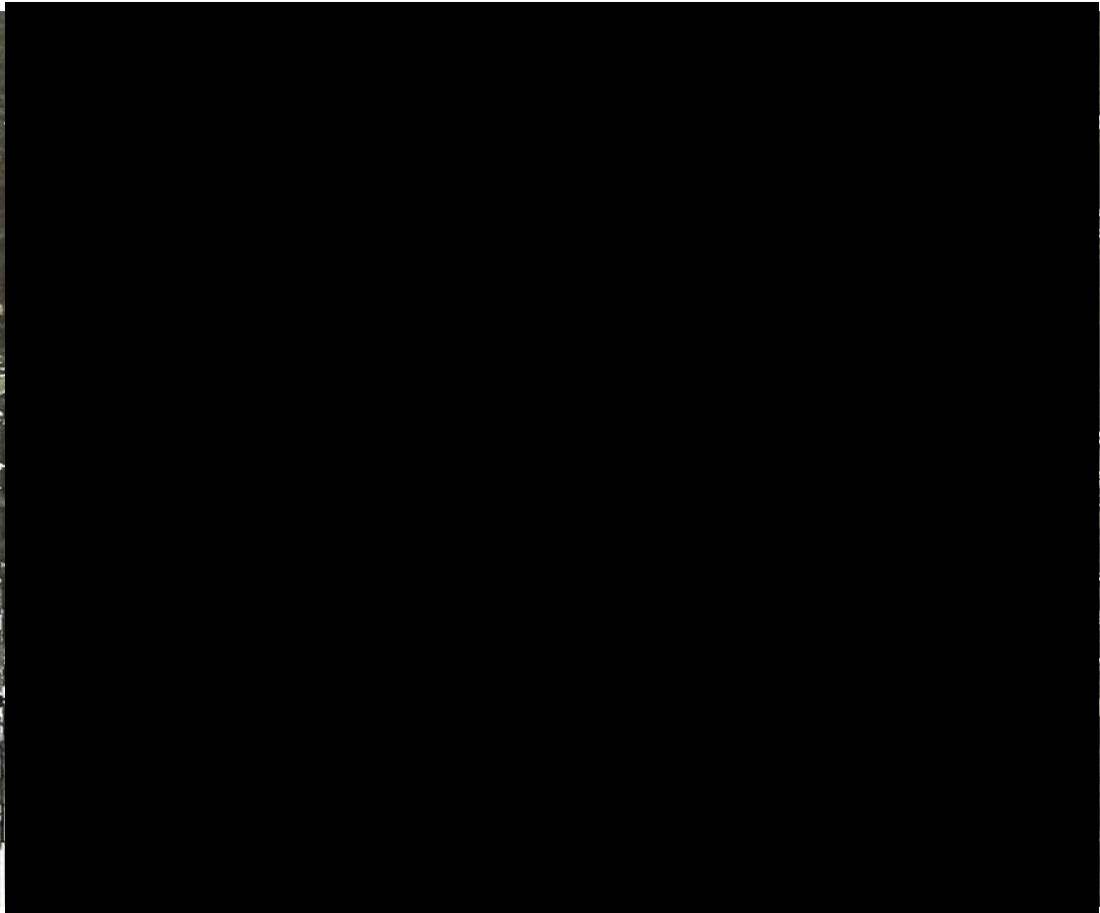


Figure 11 – A photo of the Inner Harbor from the 1950s, showing the filling of land on the western edge of the harbor to support the expansion of Light Street.

Once voters had approved \$12,000,000 to fund the first phase of the harbor redevelopment, the city secured further money from the Federal government to make the project possible. The city began by purchasing the land adjacent to the water from the private property-owners, and demolishing old warehouses. Next began the task of

filling a greater portion of the western edge of the harbor, and building bulkheads along every edge of the inner basin. Once that was built, a brick promenade was built around the water's edge. The city sponsored events to attract people to the harbor. Pier One was rebuilt, to serve the U.S.F. *Constellation* as a tourist attraction. The City Fair, previously held in Charles Center, was relocated to the harbor. The promenade was filled with tents and trucks, around which over a million visitors milled over the course of the event. (See Figure 12)¹⁶

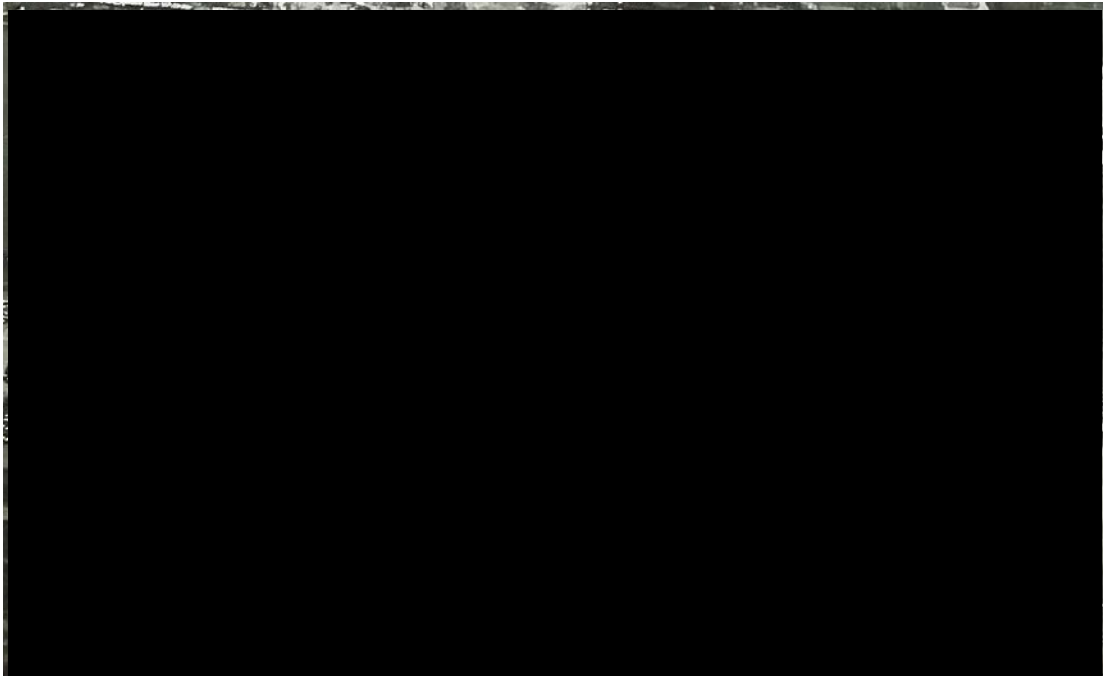


Figure 12– The Inner Harbor during the 1973 City Fair. Source: BCDP.

Once the harbor had proven it could draw people, buildings started going up in close proximity. The Maryland Science Center opened in 1976 at the southwestern corner of the harbor. Skyscrapers such as the World Trade Center and the U.S.F.&G. (Today marked “Transamerica”) building opened in the 1970s as well. Through

¹⁶ Harbor, 83.

extensive negotiations and loans, the city attracted a Hyatt Hotel to the city, brought primarily to serve the new Convention Center.¹⁷

Harborplace, the shopping phase of the Inner Harbor plan (created by the Rouse Company), was proposed in 1978 to mixed reactions. Some people wanted the shopping facilities at the harbor, but others were angry about the potential loss of a large portion of the open space at the water's edge. A long, hard campaign on both sides ended with a referendum on the project. Harborplace was given the go-ahead with 54% of the vote. Part of what swayed some voters was a provision that guaranteed 26 acres of reserved open space around the harbor if Harborplace were approved. The project itself consisted of the two pavilions that now sit along Light and Pratt Streets. (See Figure 13 for an image of Harborplace on opening day in 1980.)¹⁸ The reserved open space became what is today known as "Rash Field," located on the south side of the harbor at the foot of Federal Hill.

¹⁷ Harbor, 84.

¹⁸ Harbor, 84.



Figure 13 – The Harbor in 1980 at the grand opening of Harborplace. Source: BCDP.

The Result

The next decade saw the creation of more of the landmarks we see today. The Pier Six Concert Pavilion was completed in 1981, as was the National Aquarium. The Aquarium exceeded projected visitation by a factor of 2.67 in its first year, an unexpected success. The first-year visits to Harborplace totaled 18 million, in a city with fewer than 800,000 residents.¹⁹

All of this came at a cost. In order to fund the redevelopment of the harbor, some public funds were diverted from the school budget, relief for the poor, and more municipal projects. Would Baltimore's ills be any lesser without this diversion? It

¹⁹ Harbor, 85.

cannot be said, though business near the harbor was indubitably born anew.²⁰ The Inner Harbor became the new public face of the city in 30 years' time.

Future Development Plans

In recent years, Baltimore has sought to undo some of the remaining issues with the Inner Harbor, among them circulation (both pedestrian and vehicular), urban character and density, and pollution in the harbor.

Circulation

One of the most divisive issues at hand regarding the Inner Harbor is the circulation. Light and Pratt street are both one-way streets as a result of urban planning, rendering their traffic channelized, making them less pedestrian friendly. In an attempt to compensate for this, the city constructed skywalks over Light and Pratt Streets, among others, bridging between the second stories of buildings facing the streets. By the 2010s, the Downtown Partnership had decided that these skywalks were diverting foot traffic away from the street level, rendering businesses there less viable, and the streets less vibrant. The Partnership therefore began removal of the skywalks in 2012. More businesses have opened, at least along Pratt Street, since.²¹

Another traffic issue comes from the number of one-way streets downtown. This limits accessibility for people to spaces along the streets, and halves visibility for businesses. The city's department of transportation has fiercely resisted change on

²⁰ Olson, 390.

²¹ Amara, Kate. "Baltimore City to Demolish Skywalk." Last updated March 2, 2012. <http://www.wbaltv.com/Baltimore-City-To-Demolish-Skywalk/11031206>

this issue, per Jonathan Ceci, an associate principal at Ayers Saint Gross, the firm that designed the partially implemented Pratt Street Redevelopment Plan.²²

One more issue comes from the very shape of the harbor– the separation of the south and east sides of the harbor by the water. They are linked by the harbor’s Water Taxi system, but the city has been exploring the idea of a bridge. The Greater Baltimore Committee unveiled a master plan proposing a pedestrian bridge between pier five and Rash Field, among other ideas, in 2013. This plan, entitled “Inner Harbor 2.0,” has not yet begun to be implemented, pending negotiation of many elements. The bridge is one of these, since its projected price tag of \$30-60 million dollars will likely mean that it requires private funding to supplement city funding.²³

Urban Character and Density

Multiple sites along Light and Pratt Streets opposite the harbor have remained as parking lots until recently, partly due to the Great Recession. Developers have finalized plans to fill in some of the gaps in the skyline, as it were, at 414 Light Street and 300 Pratt Street. Both of these will exceed the height of the tallest building in Baltimore currently, the Transamerica tower.^{24 25}

²² Ceci, Jonathan, email message to author, October 2, 2015.

²³ Litten, Kevin. “Inner Harbor walking bridge would cost \$30M-\$60M.” Last updated November 14, 2013.

<http://www.bizjournals.com/baltimore/news/2013/11/14/inner-harbor-walking-bridge-would-cost.html>

²⁴ Litten, Kevin. “40-plus story apartment skyscraper planned for 414 Light St. lot across from Inner Harbor.” Last updated April 4, 2014.

<http://www.bizjournals.com/baltimore/blog/real-estate/2014/04/40-plus-story-apartment-skyscraper-planned-for-414.html>

²⁵ Bregel, Emily. “48-story 300 E. Pratt St. tower will 'dominate' Baltimore's skyline.” Last updated September 14, 2015. <http://www.bizjournals.com/baltimore/blog/real-estate/2015/09/48-story-300-e-pratt-st-tower-will-dominate.html>

Towers aren't the only proposals downtown. Ayers Saint Gross, collaborating with the Downtown Partnership, proposed new public parks in their Inner Harbor 2.0 plan (see Figure 14). One would take the place of McKeldin fountain and plaza, and provide space for gathering and events, as well as create a bikeshare station.²⁶ Another would take the place of Rash Field on the south side of the harbor, but this design is under revision objections raised by groups that use Rash Field.²⁷

In terms of the water itself, great progress has been made in the past few decades, and even in the past few years. 2014 saw the installation of a ladder conveyor belt fondly known as "Mr. Trash Wheel," (see Figure 14) which collects debris that comes down the Jones Falls, and places it on a barge for disposal. This is part of a larger initiative by the Waterfront Partnership of Baltimore to make the harbor swimmable by 2020.²⁸ This ambitious goal signals a change in perception of the harbor, as a result of the 420 tons of garbage removed from Jones Falls since the Trash Wheel's inception.²⁹

²⁶ Waterfront Partnership of Baltimore. *Inner Harbor 2.0*.

<http://baltimorewaterfront.com/wp-content/uploads/2015/06/Inner-Harbor-2-0-Summary1.pdf>

²⁷ Meehan, Sarah. "Beach volleyball players are huge winners in the latest Rash Field plan." Last updated July 27, 2015.

<http://www.bizjournals.com/baltimore/news/2015/07/27/beach-volleyball-players-are-huge-winners-in-the.html>

²⁸ Ziger Sned Architects. "Baltimore Water Wheel."

<http://www.zigersnead.com/projects/details/baltimore-water-wheel/>

²⁹ Waterfront Partnership of Baltimore. "Mr. Trash Wheel."

<http://baltimorewaterfront.com/healthy-harbor/water-wheel/>

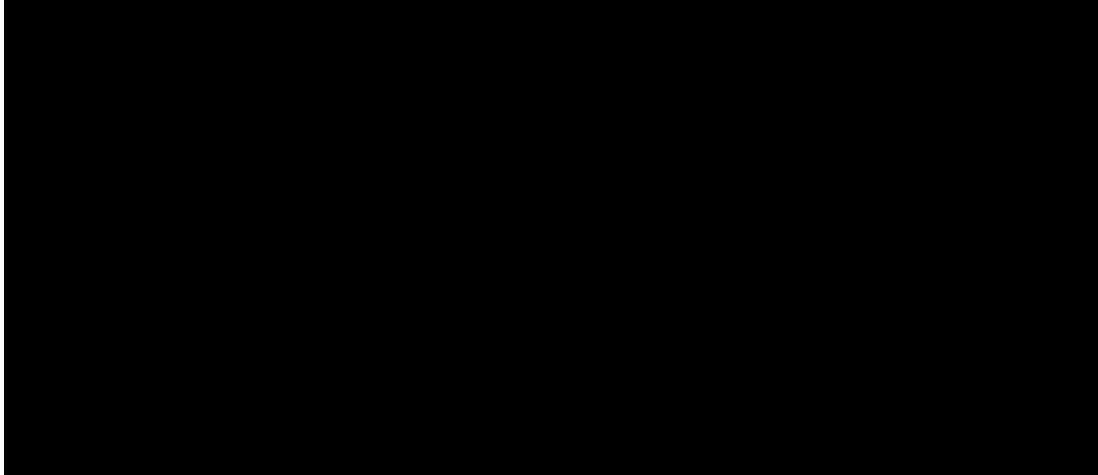


Figure 14- The Baltimore Water Wheel, AKA “Mr. Trash Wheel”. Source: Ziger/Snead

Sea level rise threatens a handful of sites around the harbor at two feet of rise, and even more at four feet of rise, as shown in figure 15.

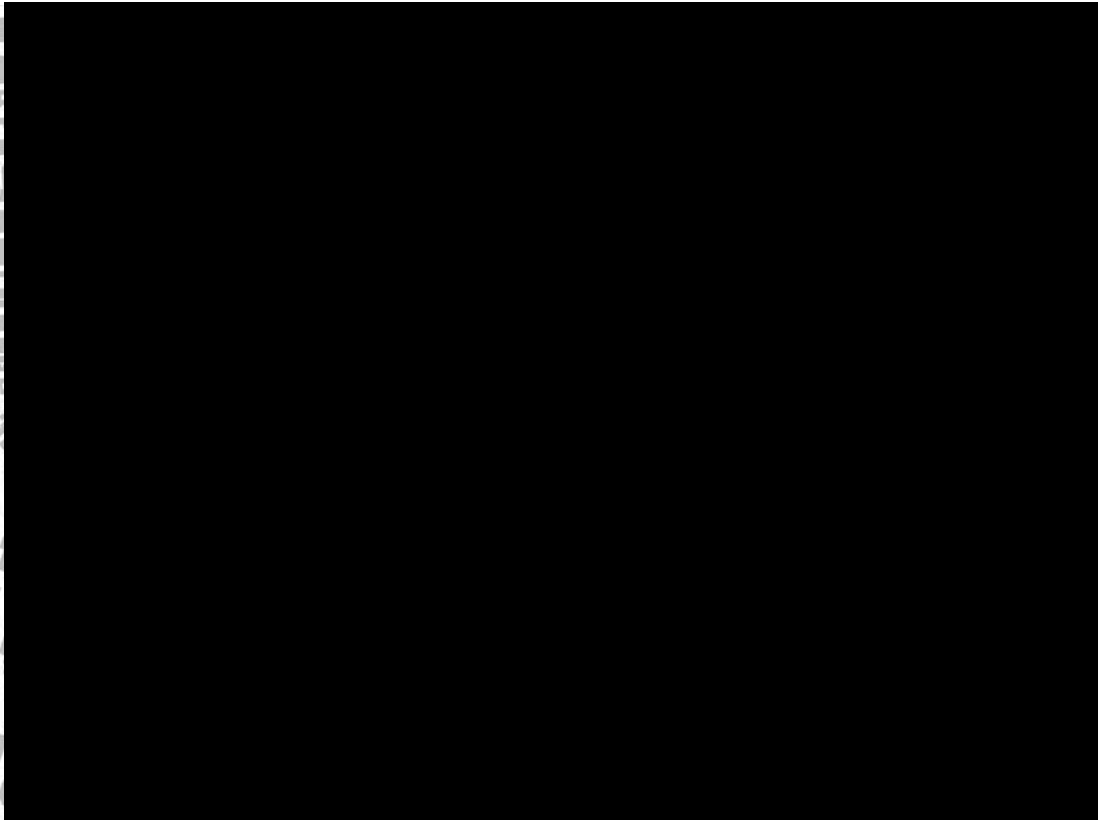


Figure 15– At two and four feet of rise, the areas highlighted in blue are threatened.

According to a report published by the National Research Council in 2012, the average sea level will rise by at least 1.6 feet by the end of the century, and in the worst case scenario, 5.7 feet. This all depends on the change in rate of greenhouse gas emissions and sequestration in the coming century.³⁰ Since Baltimore likely wishes to keep large parts of its harbor usable by the public into the next century, it will have to plan to accommodate these changes.

Beyond these encroachments by the harbor on the land, the frequency of destructive flood events will increase, and storm surge will be higher. Figure 16 shows the current 100-year flood plain (blue line and blue fill) and 500-year flood plain (black line).³¹

³⁰ Maryland Sea Grant. "Scientists Unveil New Projections for Sea Level Rise in Maryland." 16 June, 2013. <http://www.mdsg.umd.edu/news/scientists-unveil-new-projections-sea-level-rise-maryland>

³¹ MD. Sea Grant

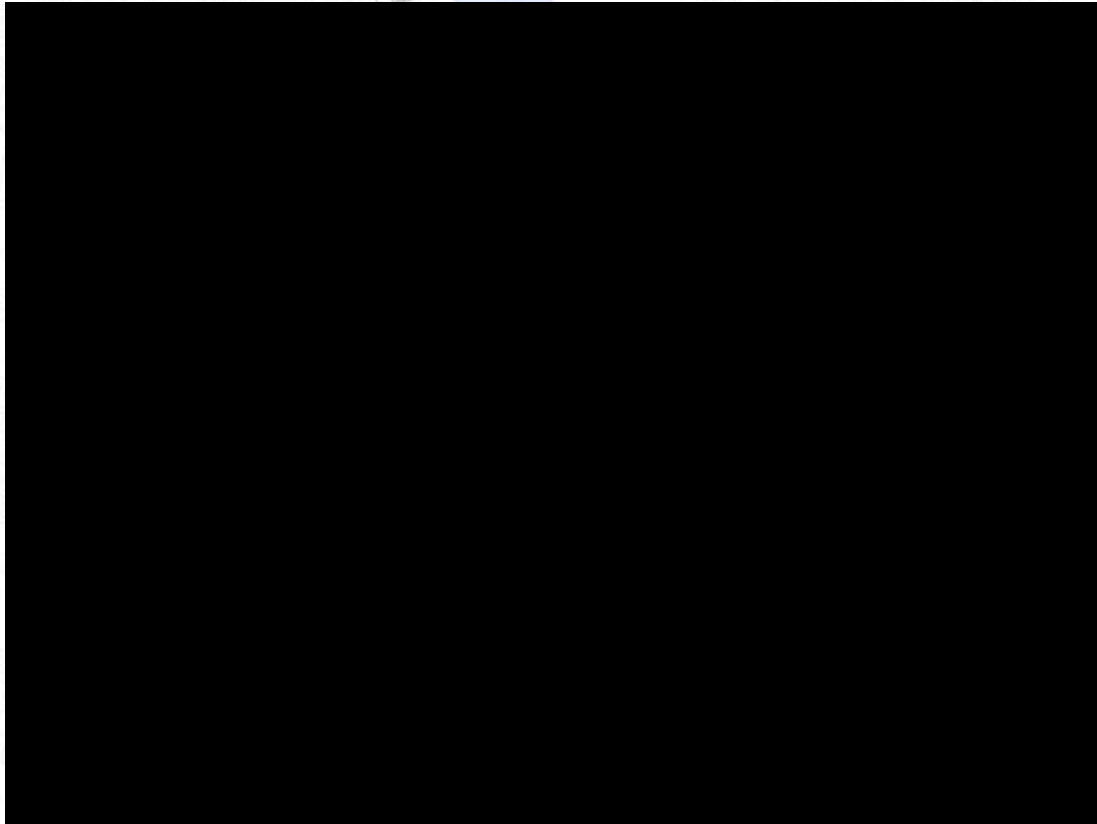


Figure 16 - Current 100-year and 500-year Flood plains. Source: Maryland DNR.

The relationship of Baltimore and its people to the water continues to evolve. It became clear that this moment, in the midst of development and on the cusp of great changes to the harbor's coastline, presented an opportunity to educate and involve the people of Baltimore with their future, through a design intervention. This intervention could both educate people about the development of the harbor from the polluted Basin it once was to the thriving commercial and recreation center it is today, and then propose future conditions for their interaction with water in the city. This took shape as the concept of a harbor history museum, supported and connected to a sustainable landscape. The question then becomes, 'where would the best site be for such a project?' The ensuing chapter narrows down the possibilities to one ideal site.

Chapter 2: Site Selection and Analysis

Selection Criteria

After a thorough review of Baltimore's history, a handful of sites around the harbor presented opportunities for the development of a program to educate citizens and visitors alike about their city's relationship with water, as well as their own. The sites investigated (see Figure 17) were the southwest corner of Harbor Point; the parking lot on Pier Six; and Rash Field, on the south side of the harbor.



Figure 17 – The three sites considered, in relation to Sea Level Rise. Image by author.

In order to determine which site would suit the intervention best, a system of criteria had to be established. The first of these criteria was the projected condition of the site in terms of water: both in terms of current physical relationship with the body of water, and that the site was not projected to be completely submerged within the

century. Amount and quality of space was the next criteria- the site needed enough space to execute its goals in building and landscape, the latter much more substantially. Neighboring properties also factored into the selection process; it was important to investigate what opportunities and obstacles neighboring institutions and businesses could provide to bolster the goals of the program. Other criteria included accessibility and projected developments on the sites.

Candidates

Harbor Point

Harbor Point, one of the last undeveloped pieces of land near the Inner Harbor until recently, is the site of an ongoing development. The development contains 1.6 million square feet of office space, 910 residential units, a 220,000 square foot hotel, 195,550 square feet of retail, and 3200 parking spaces. The project also incorporates 9.5 acres of open space, including a park in its southwest corner.³² This open space, its west and south edges bordered by the harbor, was the lowest elevation on the Harbor Point site, which also meant that it was the most susceptible to sea level rise. As indicated by Figure 17, the site would be encroached upon as a result of four feet of sea level rise. While its immediacy to the harbor was ideal, its potential submersion posed a significant design problem. Space was not an obstacle with this site- the development left about 100,000 square feet for the park. That notwithstanding, the open space was meant to be an amenity for the residents of the development, and any

³² Harbor Point Baltimore. "Project Description."
<http://harborpointbaltimore.info/project-description/>

design would have to retain that functionality to some degree. If this project incorporated the amenity function into its program, it could benefit from the proximity of residents and businesses, in the form of foot traffic. On the other hand, this foot traffic could turn out to be largely be limited to residents of the apartments on site, its position opposite the development's entrance possibly signaling others that this was a more private park than it was intended to be.

Pier Six

Pier Six's parking lot was the next site considered; its proximity to Jones Falls offered a relationship with the river that created the harbor basin in the first place, though all of the piers are at risk of being encroached upon by the rising sea. The presence of parking garages across the Falls, and further north on the pier, seemed to render the parking lot just north of the Pier Six Concert Pavilion redundant. That same concert pavilion offered an opportunity to draw people through the site on event days, thus increasing its educational impact. The proximity of the Pier Five hotel among other draws further increased that potential. The lot offered fewer square feet than the Harbor Point site, at roughly 43,000 square feet, but it offered better accessibility, through the bridges linking the piers together.

Rash Field

The third site considered was Rash Field, the recreational area on the south side of the harbor that is currently the subject of design discussions between the Mahan Rykiel, the project architects; the Downtown Partnership, and the users of the site. It stands behind an earthen berm above the brick promenade circling the harbor,

which along with the site's existing topography theoretically insulates it from the effects of sea level rise until six feet of rise. It offers 283,000 square feet of space to work with, and its location along the Inner Harbor promenade would ensure foot traffic through the site. The sites neighbors include the Maryland Science Center, a natural partner for education, and the Visionary Arts Museum, which could offer some potential for partnership if the water culture designs took an artistic bent. A potential hindrance on the site is the presence of Federal Hill, which has historically significant sightlines to downtown across the basin. Any construction on the site would have its height influenced by that neighbor. Another neighbor worth note is Key Highway to the south of the site, a street not particularly friendly to pedestrians.

Selection

Following the comparison of the sites, a clear victor emerged: Rash Field. It had the most space of the three sites, was the safest from sea level rise, was the most easily accessible, and had the best potential for productive partnerships with neighboring institutions.

Analysis

Site analysis began in the regional scale, but quickly focused in to the scale of the harbor. The harbor is one of a few branches of the Patapsco River, fed by the Jones Falls. (See Figure 18)



Figure 18- Regional watershed map, Google Earth, altered by author.

Rash Field sits in a zone that drains water into the harbor without routing it through one of the major rivers, meaning that much of the water that falls on Locust Point and westward passes over the surfaces between it and the harbor unless routed into storm drains, accumulating particles along the way. This positions Rash Field with some potential as a location for runoff filtration.

In terms of accessibility, Rash Field's position at the center of Baltimore also positions it at the ends of multiple interstate highways. (See Figures 19 and 20)

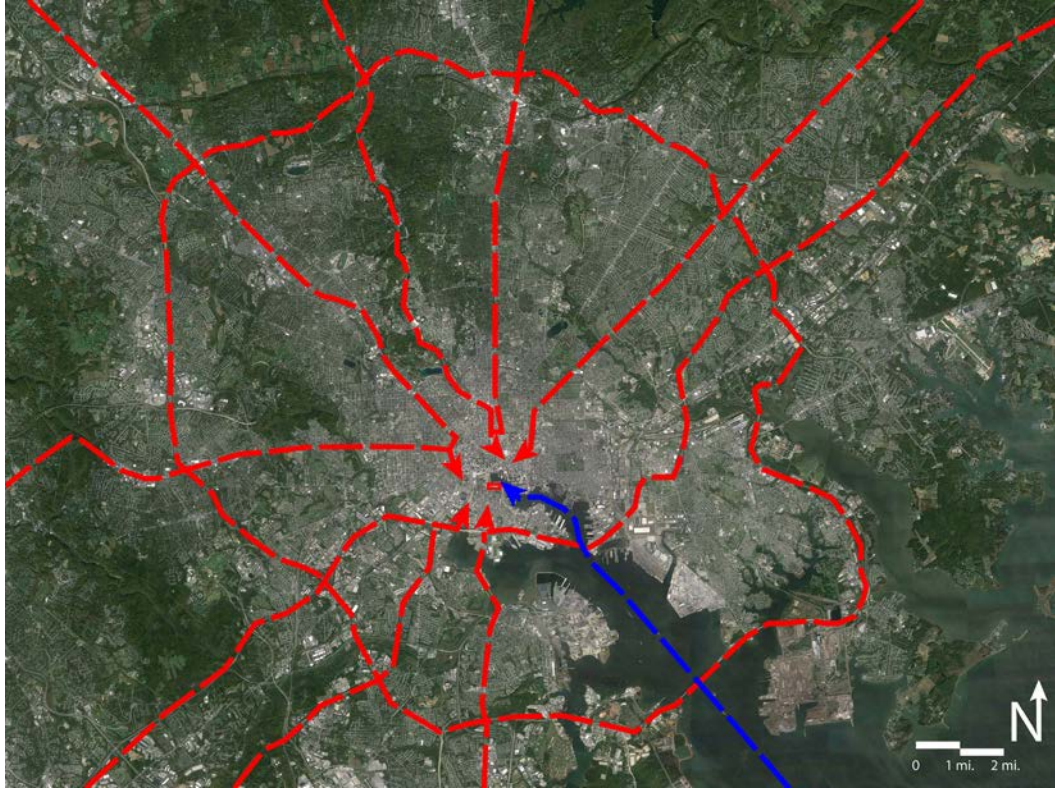


Figure 19a- Regional Access diagram, Google Earth, altered by author.

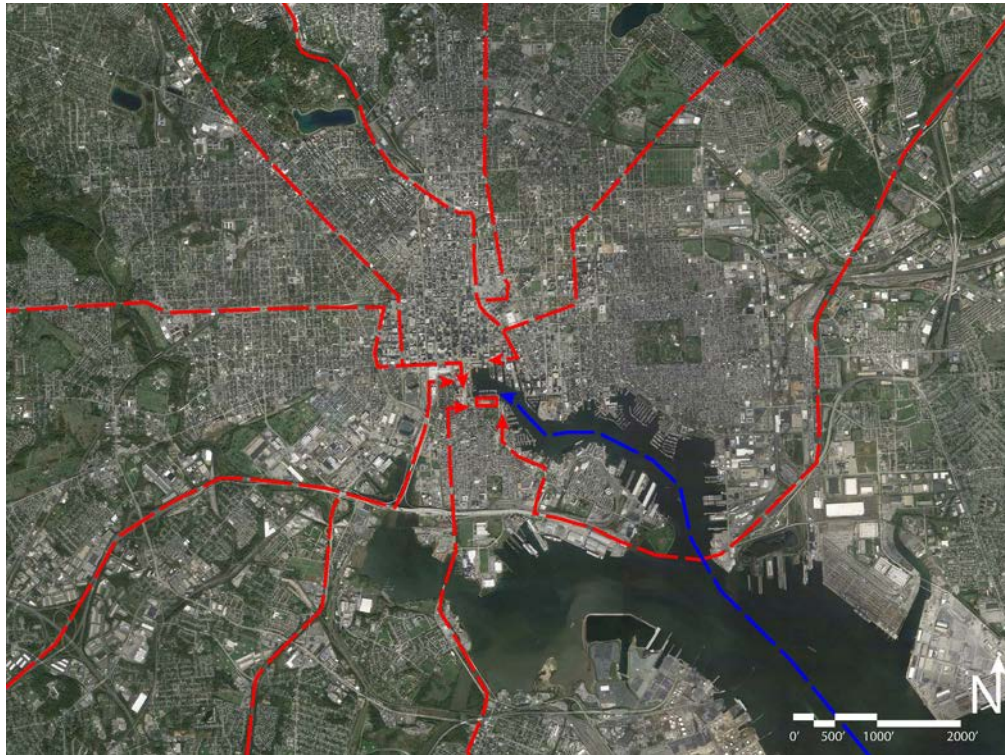


Figure 20- City Access Diagram: Google Earth, altered by author.

This positioning makes the site subject to significant attention as well as traffic. Its connections to automobile, pedestrian, and water-based networks, as shown in Figure 21, offer it opportunities and challenges in dealing with the established networks of movement on-site. The intervention examines the site's accessibility from all directions, and consequently proposes a revision for Key Highway to its south.



Figure 21- City Access diagram, by author.

Figure 22 shows the existing site in detail. Rash Field has a large, open green and several sand volleyball courts, which provide a space for a beach volleyball league to play in the summer months. The green space is taken over occasionally for events, such as the Chesapeake Crab & Beer Festival in June.

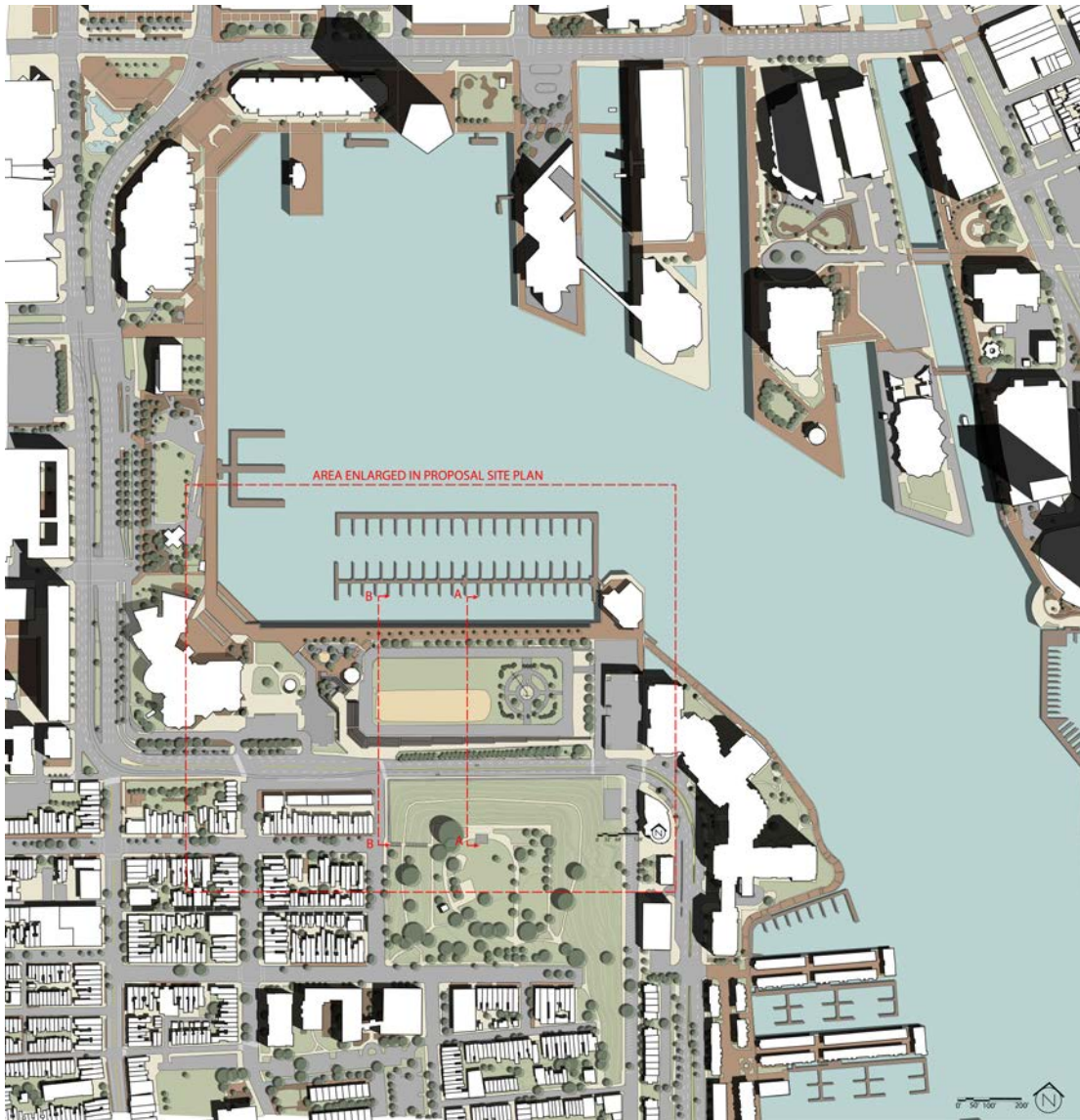


Figure 22 - Existing Site Plan, by author.

Around the courts and green is an asphalt track, 30 feet wide. On the south and west edges of the green and courts are wooden bleachers for observers, which also serve as the primary means to traverse the topography between Key Highway and Rash Field (See Figure 23).



Figure 23- Photo showing seating on south side of site. Taken by author

There is a significant level difference between the field and Key Highway, varying over the course of their border. This variance is shown in Figures 24 as well as Figures 25 and 26.



Figure 24- Topography and drainage plan, two-foot contours, image by author.



Figure 25- Section cut through the site at the Pride of Baltimore memorial. Image by author.



Figure 26 – Section cut through the site at the Battery Avenue. Image by author.

Built into the back of the field's signage is a scoreboard. Alongside the bleachers is a pavilion, open on the sides, with a skylight and electrical lighting built in (see Figure 27).



Figure 27- Photo showing seating and pavilion. Taken by author.

On the east side of the site is the Pride of Baltimore memorial (see figure 28), dedicated to Baltimore's famous ambassador ship, which sank in 1986.



Figure 28 – The Pride of Baltimore memorial, photo taken by author.

It constitutes a mast standing on a concrete base, anchored to the ground with wires. According to the Downtown Partnership, negotiations to relocate the memorial have already begun pending the Harbor 2.0 plan, so its location is also in play for the design intervention.³³

³³Waterfront Partnership of Baltimore. “Registration for the Rash Field RFQ is extended through Friday, August 21, 2015 at 12:00pm <http://baltimorewaterfront.com/waterfront-partnership-seeks-design-team-to-upgrade-rash-field/>

In terms of land use, Federal Hill itself is the point between the civic and commercial uses of the inner harbor and the residential and commercial uses of the Federal Hill neighborhood, as shown in Figure 29.



Figure 29- Land use in 2016. Diagram by author.

Rash Field falls into a special zone in terms of the Code of Baltimore: B-5-1, a designation reserved for the areas immediately surrounding the harbor.

But what does B-5-1 mean? A thorough reading of the Zoning Code of Baltimore revealed its implications. The FAR allowed on each site is 8.0, meaning that one could build eight stories filling the full footprint of the site. One could build even two stories higher if the building were set back from a lot line by twenty feet, and the area in the setback were appropriately landscaped. Considering that Rash Field and its attributed areas cover over 200,000 square feet, this project will not need

all of that allowance; to use all of it would be a slap in the face to the site's current users, but those decisions will be further described in chapters five and six. A B-5-1 designation mandates that there be one parking space on site for every four employees of professional establishments. For libraries, galleries, and museums, off-street parking is required, as are spaces for short-term parking and a drop-off zone.³⁴

With all of these constraints in mind, the shape of the intervention itself could be investigated.

³⁴ Baltimore City Department of Legislative Reference. "Zoning Code of Baltimore City." <https://law.resource.org/pub/us/code/md/baltimore.code.article.00.03.html>

Chapter 3: Precedent Studies

Museums of Places

In order to develop the program of the harbor history museum, precedent studies had to be conducted. The following are analyses of three museums from around the world, each one designed to serve as a museum of its city's history.

Museum of Wellington City and Sea

Wellington, New Zealand is home to a rich history of maritime culture, and celebrates it with the Museum of City and Sea, housed in a former cargo warehouse (see Figure 30).



Figure 30 – The Bond Store, which currently houses the Wellington Museum of City and Sea. Source: museumswellington.org.nz

It hosts permanent and rotating exhibits about Wellington’s history as a city, with a focus on maritime culture.³⁵ Its program is diagrammed in Figure 31.

³⁵Museums Wellington. “History of the Museum.”

<http://www.museumswellington.org.nz/wellington-museum/development/>

WELLINGTON MUSEUM OF CITY AND SEA

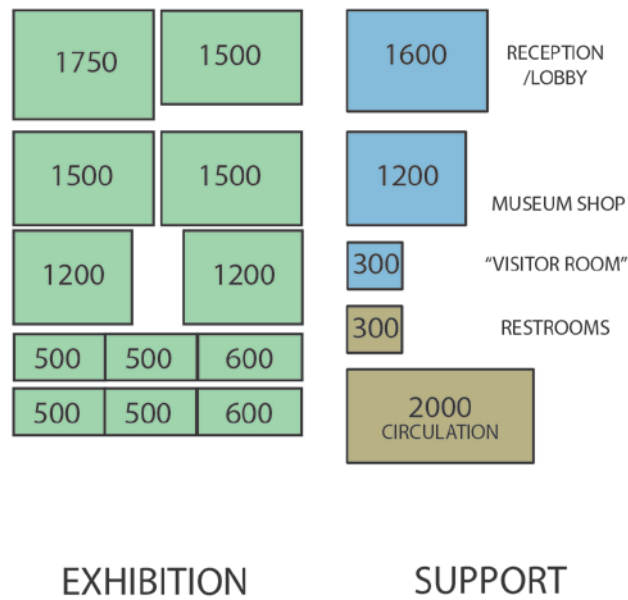


Figure 31 – Diagram of the program of the Wellington Museum. Image by author.

Galway City Museum

The small city of Galway in Ireland has its own museum, positioned along a river, that celebrates the city's history, with a focus on boat making.³⁶ Figure 32 shows its façade along its entry.

³⁶ Galway City Museum. "About Us." <http://www.galwaycitymuseum.ie/about-us/>



Figure 32 – Image of the Galway City Museum. Source: tripadvisor.com.

GALWAY CITY MUSEUM

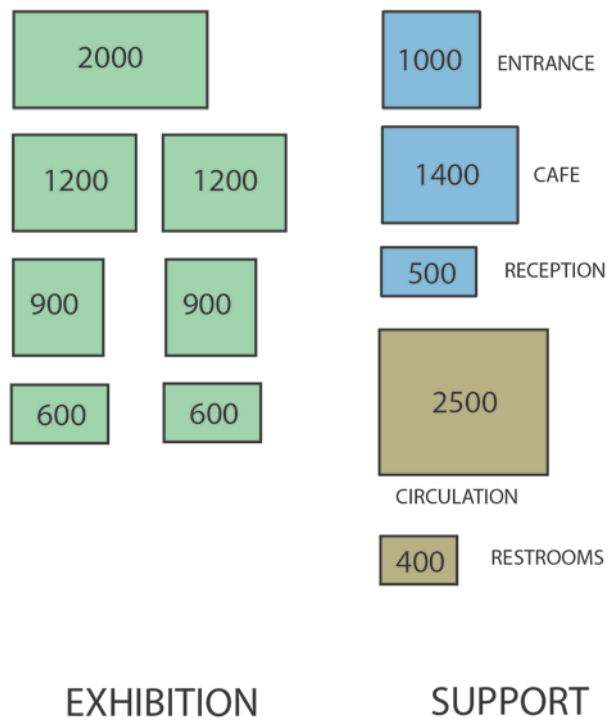


Figure 33 – Program diagram of the Galway City Museum. Image by author.

Museum of the City of New York

New York City has an oft-told, complex history, so it should come as no surprise that it has its own history museum, facing onto Central Park, no less. It is substantially larger than the previous two museums discussed, but the division of its program is different, in that it allocates approximately half of its floor space to office space and storage. Figure 34 diagrams its program, based on a visitors' brochure.³⁷

³⁷ The Museum of the City of New York. "Visit." <http://mcny.org/visit>

MUSEUM OF THE CITY OF NEW YORK

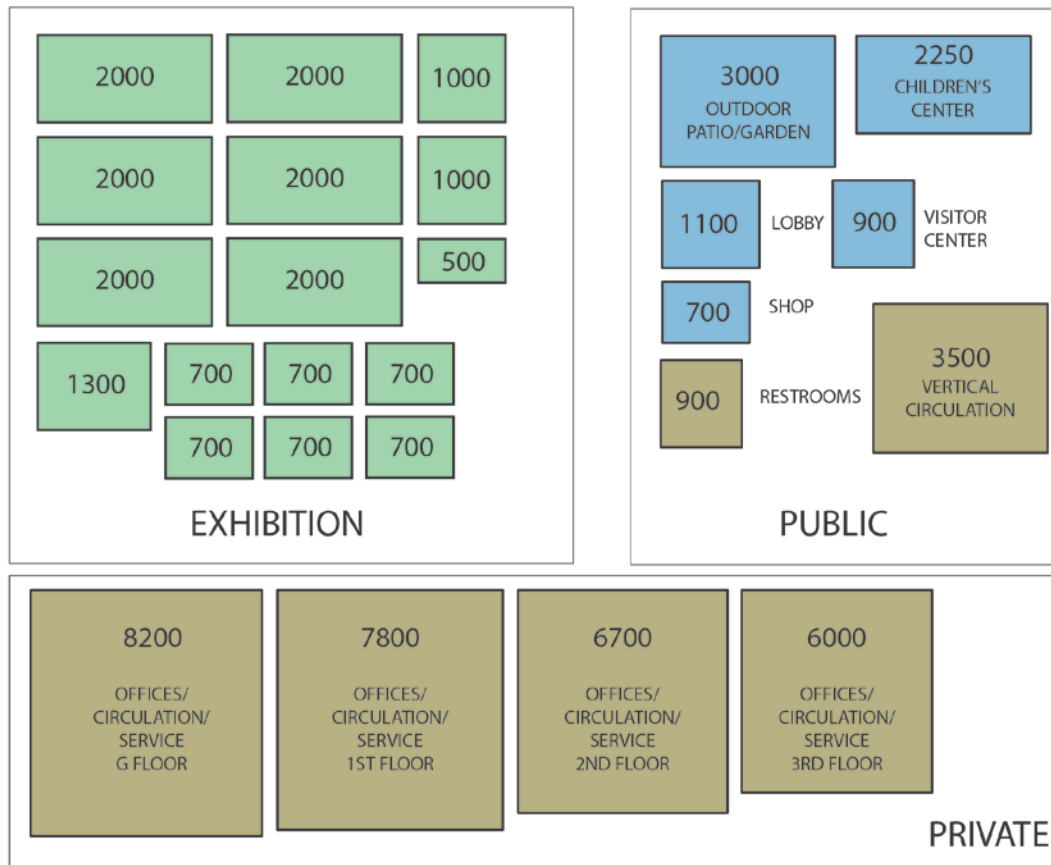


Figure 34 – Program diagram of the Museum of the City of New York. Image by author.

Urban Parks

Developing a landscape strategy to address the numerous factors facing Rash Field required the analysis of multiple precedents of parks undertaken in urban contexts.

Seattle Olympic Sculpture Park



Figure 35 - Seattle Olympic Sculpture Park, aerial view. Source: Heintges.com.

This park traverses railroad tracks and a major highway, through paths and lawns that house a sculpture garden, as well as an enclosed pavilion. It is built on a former brownfield site, and turned it into a public amenity. It offers water access, shade in the form of groves of trees, lawns for events, and dedicated space for large-scale sculpture.³⁸

³⁸ "Heintges - Building Envelope and Curtain Wall Consultants." *Heintges.com*. Heintges, n.d. Web.

Railroad Park



Figure 36 - Railroad Park, Birmingham, AL, aerial view. Source: t Islandarch.com

Nestled alongside railroad tracks, Railroad Park in Birmingham creates a variety of spaces for its visitors, from an amphitheater, to broad lawns, covered pavilions, lakeside boardwalks, and raised overlooks, all in the space of four city blocks. Its lakes serve as stormwater retention, since they are at the historically lowest point in the city. The water is used for irrigation of the park's lawns. Some of the paving on site is made from materials recovered from the site itself, which used to house a brick factory.³⁹

³⁹ "Railroad Park." *T Islandarch.com*. Tom Leader Studio, n.d. Web.

http://t Islandarch.com/studio/projects/project_details.php?id_cat=1&id_proj=40.

Brooklyn Bridge Park

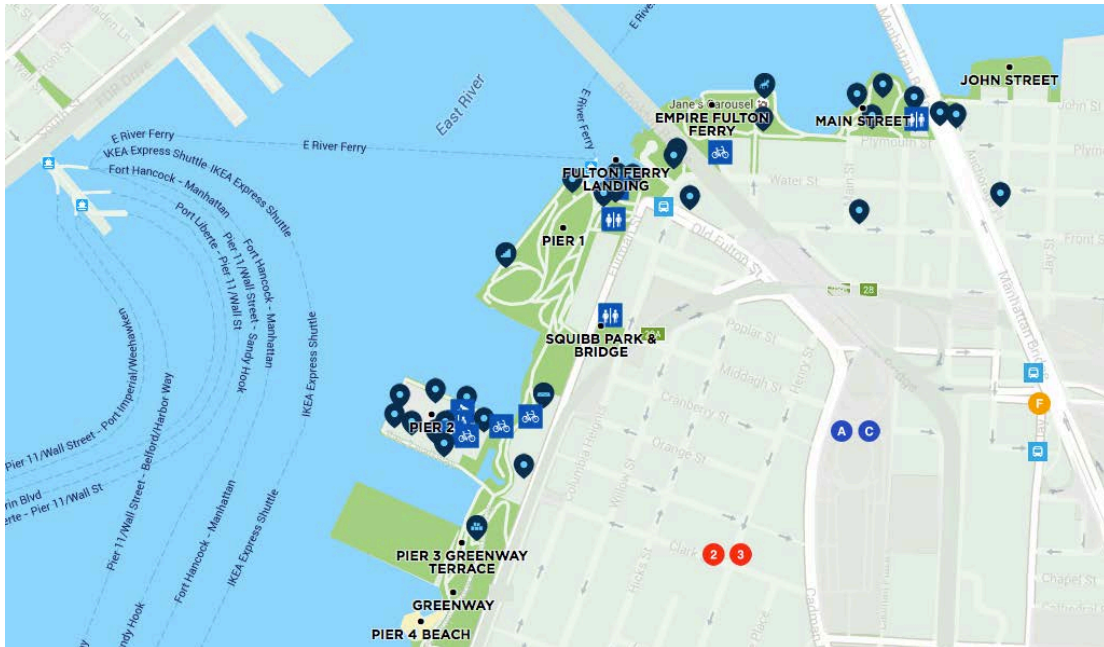


Figure 37- Brooklyn Bridge Park, map. Source: BrooklynBridgePark.org.

Stretching over a mile along the Brooklyn riverfront, Brooklyn Bridge Park offers a smorgasbord of opportunities for recreation, from fields to courts of every variety, to beaches, a marina, restaurants, and playgrounds. It took formerly industrial land slated for commercial development, and instead turned it over to the general public.⁴⁰

⁴⁰ "Granite Prospect." *Brooklynbridgepark.org*. New York City Government, n.d. Web. <<http://www.brooklynbridgepark.org/attractions/granite-prospect>>.

Chapter 4: Forming a Program

Objectives

Research illuminated a trajectory for a potential program for the site.

Cultural

Analysis of the Inner Harbor revealed that it had major, defined program spaces on its north and west sides, but far less on the south. A site visit on a warm October afternoon made manifest the site's underuse outside of event days. A few people in exercise attire jogged by, largely ignoring the site's track. The bleachers were sparsely populated (about ten people total), by homeless people and a few teenagers listening to music. Most of the site traffic was along the brick promenade on the waterfront. These people passed through, travelling to and from the garage on the east side of the site, or the rest of the harbor. Pairs and trios ventured across Key Highway to Federal Hill every five minutes or so. The volleyball courts were deserted, no sand-spurred pun intended.

The site, as the part of the most prominent recreation space in the city, does see use by large groups. Some examples are the Baltimore Book Festival, the University of Baltimore's Walk to End Alzheimer's, the local chapter of the cold-weather fitness program called the November Project, and the Hydrocephalus awareness walk, all depicted below. Clearly, this site has some utility as a public

common space, for recreation and for the exercise of free speech. (See Figure 38 for images of these events.)



Figure 38 – Events on site: the November Project, top; Walk to end Alzheimer's, bottom. Source: November-project.com, Facebook.com.

That much comes across immediately upon reading the Waterfront Partnership of Baltimore's list of requirements for the site. Some highlights of the Partnership's requirements are the following: beach volleyball, open space for formal and informal activities (fitness or otherwise), removing the berm, upgrading of deteriorating structures, installation of storage facilities for events, relocation of the Pride of Baltimore Memorial, Carousel, and Kawasaki Garden, and increasing shade on site.⁴¹

⁴¹ Waterfront Partnership.

The Waterfront Partnership has come to the conclusion that there are elements of the site worth retaining, especially culturally. Upon reviewing images of activity on the site, this conclusion is entirely reasonable, and consequently informs the goals of this thesis. The Inner Harbor has become the iconic center of the city, and it needs a place for locals' recreation, not just visitors' amusement; this dual service of the space around the Basin is one of its strengths.

Public Meetings

Many of these same thoughts of issues and potential came to light at public interest meetings held by Mahan Rykiel Associates in the early months of 2016. The volleyball league that used Rash Field shared the statistic that 2500 people a week participated in games during the summer, and voiced their strong opposition to any plans that did away with the courts on site. Various users of the site for events noted the difficulty of negotiating site access through an adjacent restaurant parking lot or through a restrictive tunnel that became intimidating after dark. There seemed to be a consensus that there was not enough shade on site; the distance people had to traverse in crossing it without tree shade made it unappealing. Other complaints included the sad state of the wooden bleachers, the hard surface of the asphalt track, and significantly, the inconvenience of crossing Key Highway to access Federal Hill.⁴²

Local group leaders attending focus group meetings noted more specific details about the site. A member of the Pride of Baltimore society said that the group only used the Memorial once a year, and was open to relocation, so long as the

⁴² Rash Field Public Meeting #1. Maryland Science Center. January 6th, 2016.

relocation site was set aside ahead of time, and the mast did not go into storage and be forgotten about. The group leaders appreciated some affordances of the site, such as the natural amphitheater seating and the existing pavilion. They bemoaned some neglected items, especially the filthy (now locked) bathrooms, which forced them to truck in portable restrooms or tell people to go to other institutions along the promenade. They also discussed the potential of Rash Field as a destination along the harbor, and not just a place to pass through.

Leaders of recreational groups also met, and discussed the ways in which they used the site, and set it up for events. They advocated for maintaining open, versatile space at Rash Field, maintaining the views from Federal Hill, and eroding the berms on either side of the site.

Ecological

The future of Baltimore's waterfront culture will literally and figuratively be shaped by sea level rise, as detailed in chapter two. The city's government has to be ready to meet this challenge, and the public deserves to be involved in the development of strategies that could save large tracts of the city's coast from being underwater. There needs to be a paradigm shift in the design of the public's interaction with the waters that gave their city life.

Program Drawn to Scale

Figure 39 shows the proposed museum program drawn to scale, in the same style as earlier precedent studies diagrams.

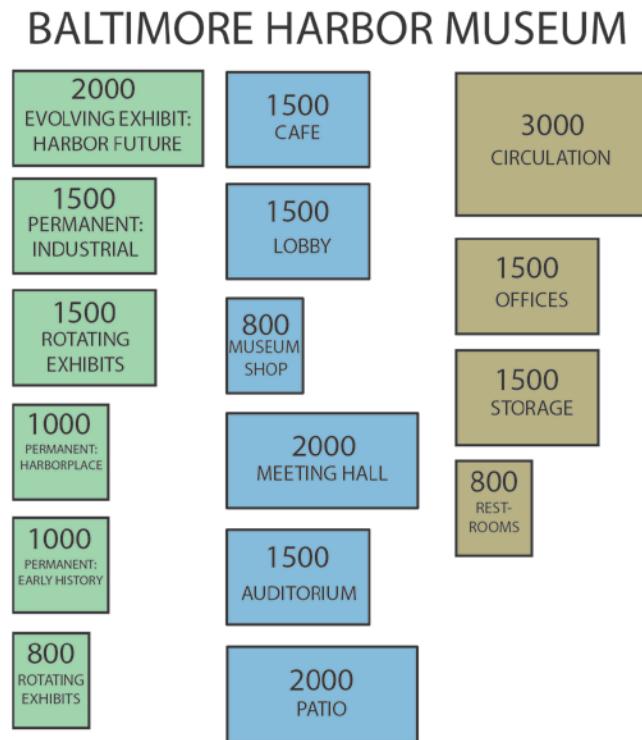


Figure 39- Proposed program diagram, composed by author.

The program centers on a sequence of permanent historical exhibits, leading visitors from the 18th century to the present, and beyond. The sequence culminates in a 2000-square-foot “Evolving Exhibit,” intended to morph and evolve as the harbor does, showing visitors projects in the works for the harbor and vicinity, as well as the projected impact of ecological developments. Space for temporary exhibits is also included. More public rooms include a café, a museum shop, auditorium, meeting

hall/event space, and a patio. The program additionally provides for support space, including administrative offices.

Functional Relationships Diagram

Figure 40 shows the proposed program elements, with theoretical adjacencies.

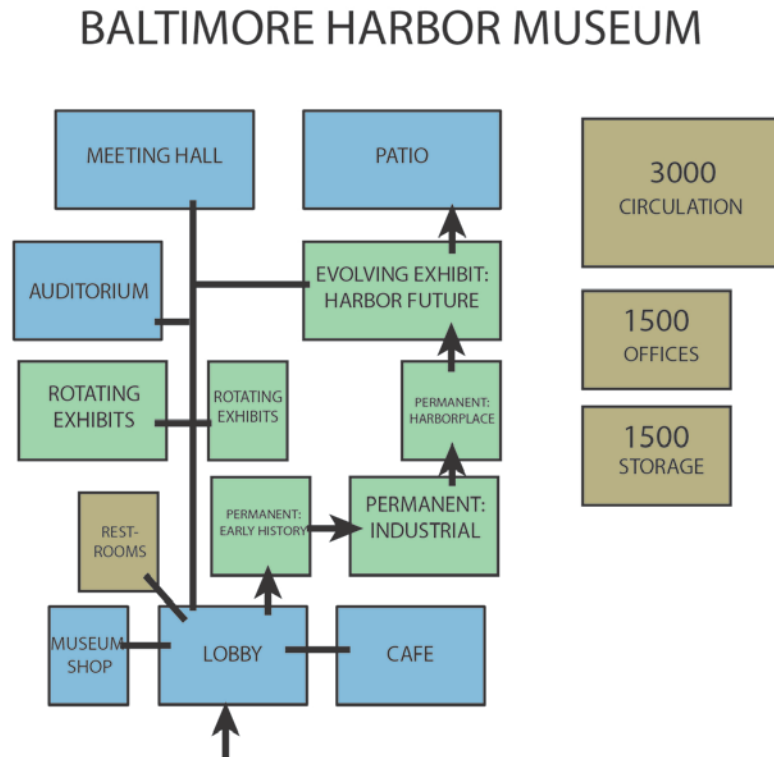


Figure 40- Proposed program adjacencies, composed by author.

Recreational Program Development

Attending public interest meetings led to the modification of the program to include dedicated square footage for recreation and recreation support, as shown in Figure 41. Since Rash Field was set aside for public recreation at its inception, preserving that purpose was a priority.

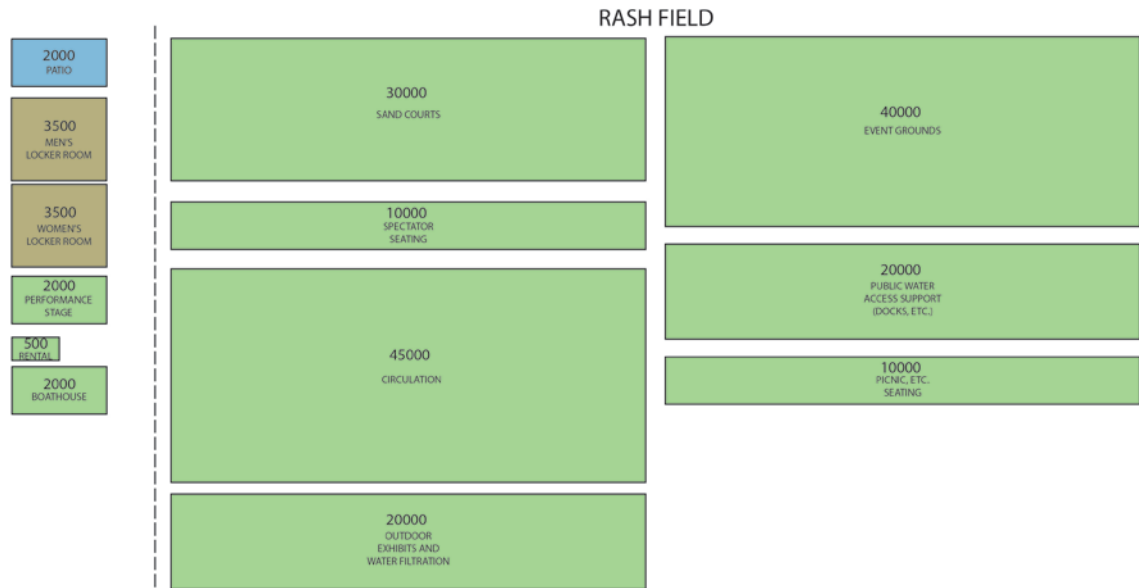


Figure 41- Proposed outdoor and indoor recreational program, composed by author.

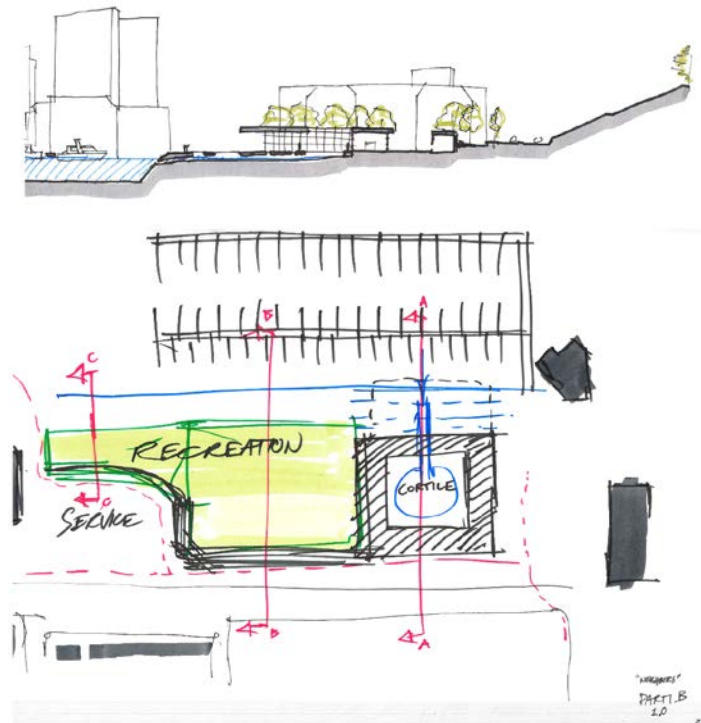
The recreation program includes 30,000 square feet set aside to preserve the site's volleyball courts, along with 10,000 ft² for spectator seating. It allowed 40,000 ft² for event grounds, based on the existing green area within the track. 20,000 ft² is dedicated to public water access, and another 20,000 ft² for water filtration systems.

Chapter 5: Early Design [Spring 2016]

Initial Concepts

Basic studies undertaken in plan and section revealed some potentially advantageous reconfigurations of the site.

Tidepools – “Scheme B”



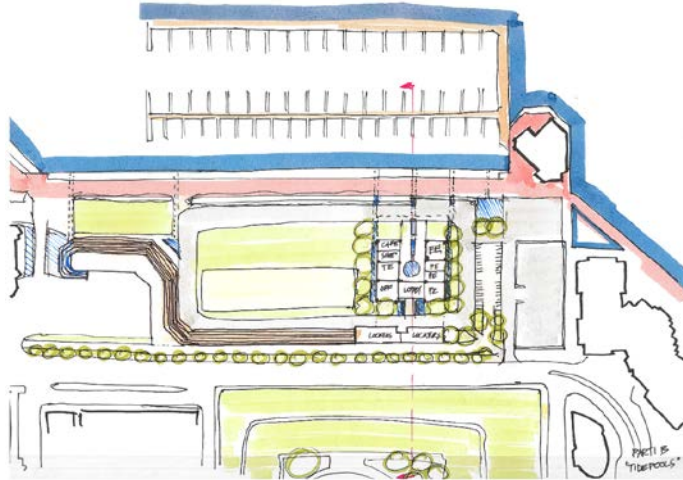


Figure 42 – “Tidepools” scheme, images by author.

One of the earliest schemes was called “Tidepools,” and focused on the idea of strategically letting water into the site, inside a courtyard created by the museum, placed on the site of the Pride of Baltimore memorial (see Figure 42.)

Wetland Gym – “Scheme E”

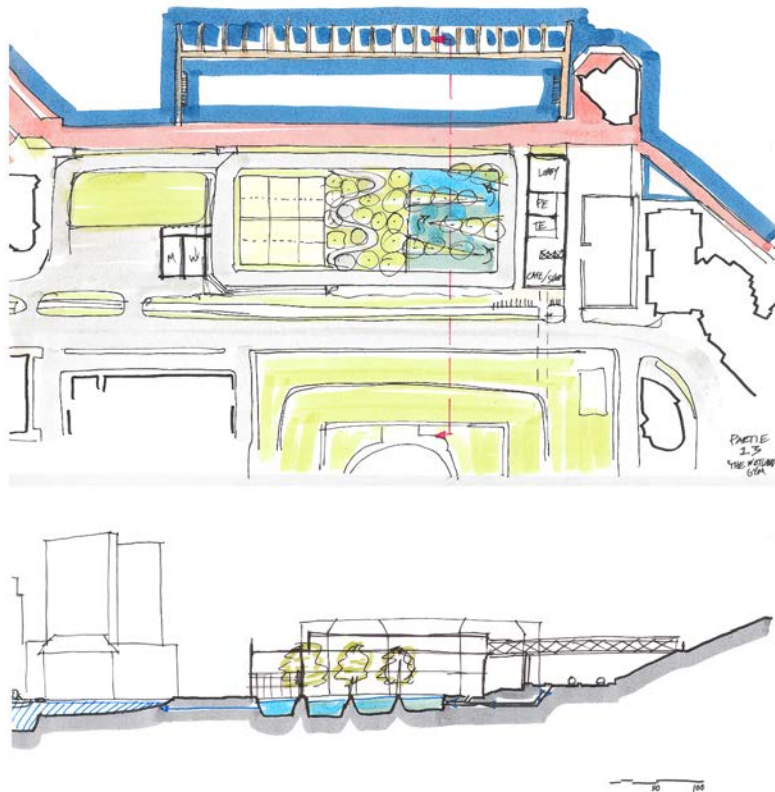


Figure 43 – “Wetland Gym” scheme, images by author.

Another scheme placed the building on the east side of the existing track, and filled the track with reconfigured volleyball courts, a grove of trees with outdoor exercise equipment, and a filtration wetland. This allowed people to see the active rehabilitation of the runoff water coming through the site, and offered new opportunities to improve one’s health. Notably, this scheme included the idea of a bridge leading from Federal Hill to the roof of the museum.

Beach – “Scheme C”

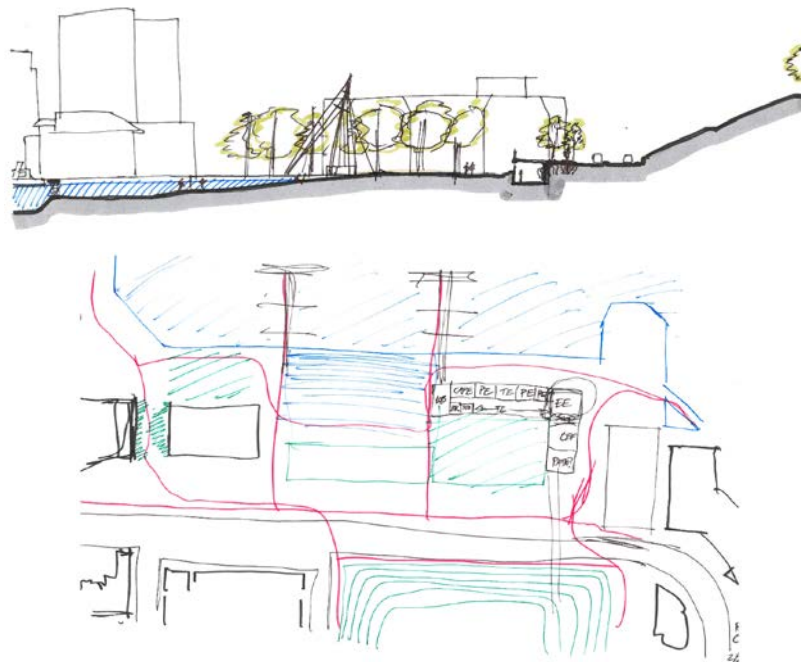


Figure 44– “Beach” scheme, images by author.

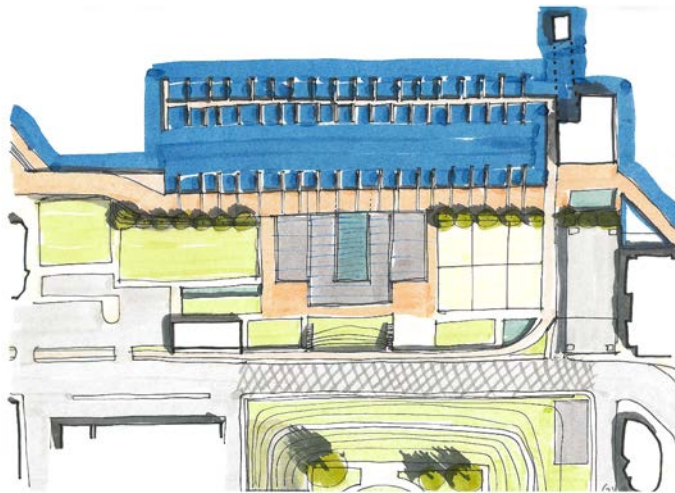
One more early scheme worth noting is the “Beach” scheme, shown in Figure 44. It is notable for its desire to increase public access to the water, completely breaking the promenade in the middle of Rash Field in order to create a beach,

allowing for public swimming once the harbor water is clean enough. The scheme also completely reconfigures the docks, having them sprout from the beach, intended to be much more public than the private marina that exists today. -

Bolder Designs

Critiques on early designs inspired similar, but bolder moves in the next iteration. The line dividing what was negotiable and sacred on site moved to accommodate more change.

Flood Plaza Scheme



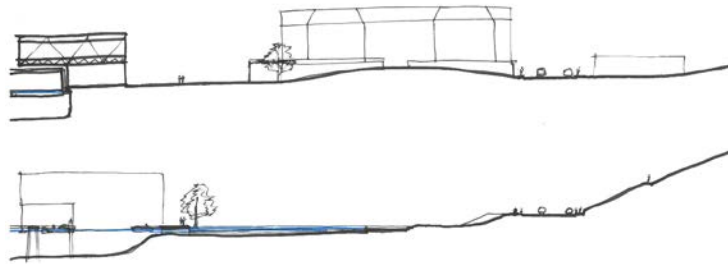


Figure 45 – “Flood Plaza” scheme, images by author.

The “Flood Plaza” scheme, shown in Figure 45, is a spiritual successor to the “Tidepools” scheme, in that water is allowed into the site as the tide ebbs and flows. This is in the form of a plaza central in Rash Field. In this scheme, the museum takes the place of the Rusty Scupper restaurant, assuming its prominent place in the harbor.

Filtration Scheme

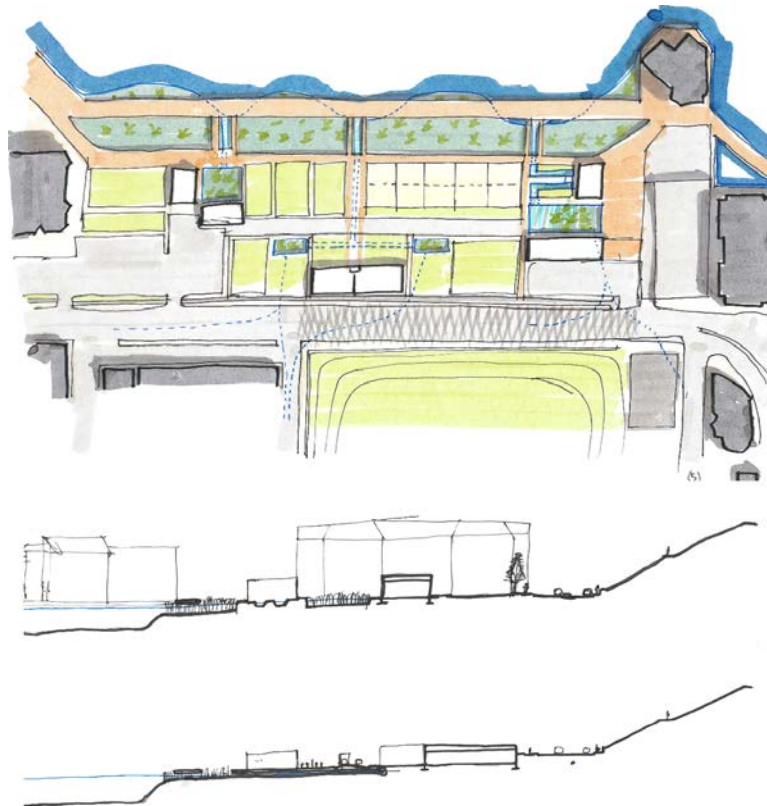
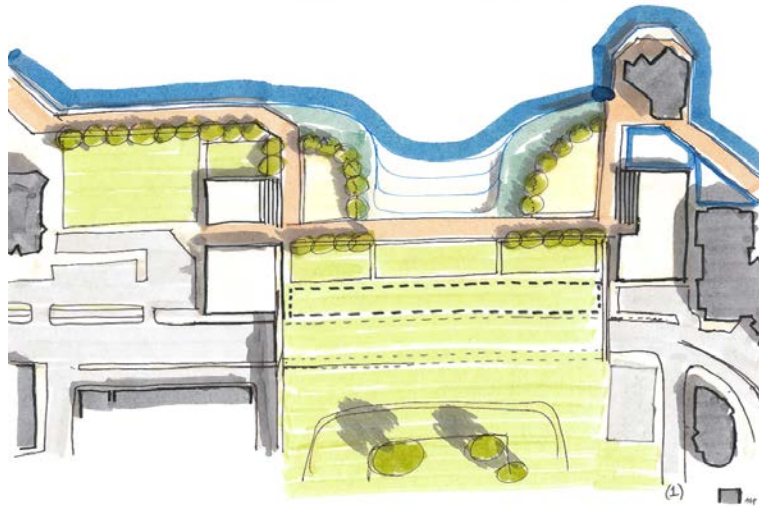


Figure 46 – “Filtration” scheme, images by author.

The “Filtration” scheme, shown in Figure 46, carries on the concepts of the “Wetland Gym” scheme. Water processing through the site is visible to those who pass through it, in the form of runoff filtration alongside the pathways and fields, and with filtration wetlands between the promenade and the rest of the site, cleaning harbor water. Here, the building program was spread across the site in multiple structures. This concept proved less than compelling, and was largely abandoned in later iterations.

Beach and Land Bridge



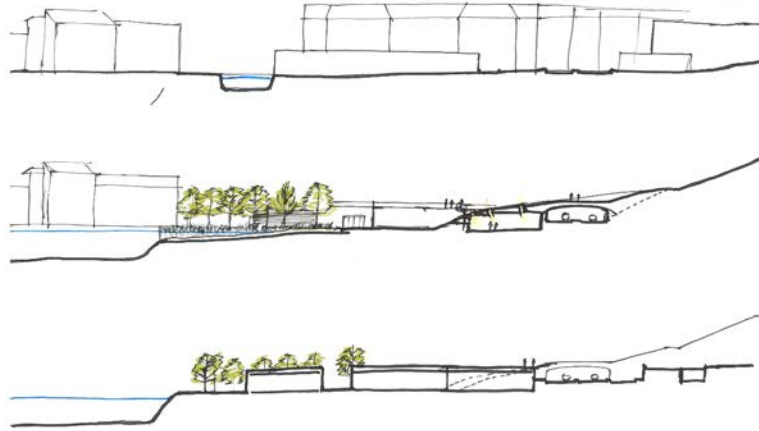


Figure 47 – “Beach and Land Bridge” scheme, images by author.

The most consequential scheme of the second round was the “Beach and Land Bridge” scheme, shown in Figure 47. This scheme erases the issue of Key Highway’s act of division by creating a land bridge between Federal Hill and Rash Field, which turns Key Highway into a tunnel, and slopes down to the field, housing the recreation support program. After a brief landing in effectively level fields, the ground surface reaches a reoriented promenade, and then slopes downward into a beach condition. This procession would carry forward in the design process.

Consolidation

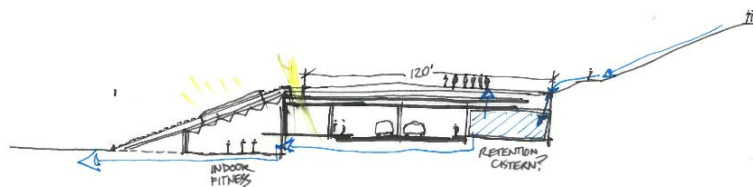


Figure 48 – Section through first consolidated scheme, image by author.

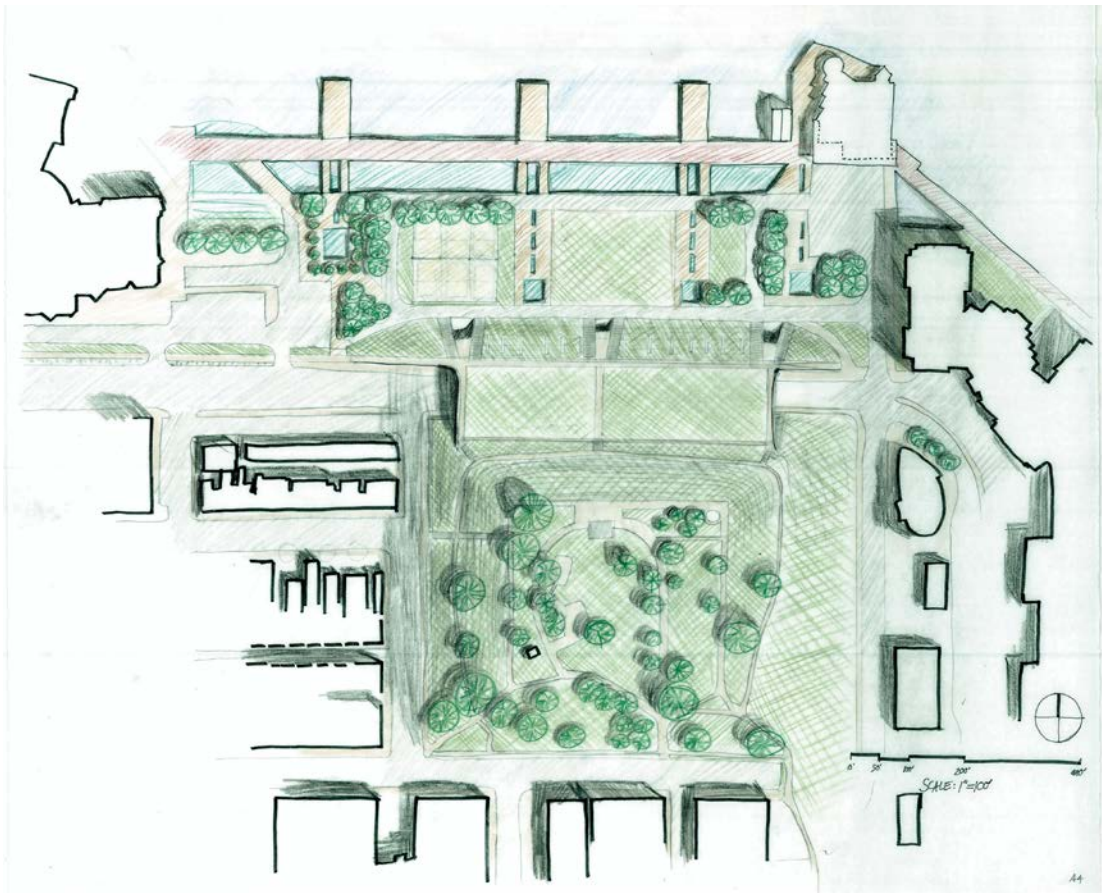


Figure 49– Site plan of first consolidated scheme, image by author.

Each of the preceding schemes had some merit to its concepts. These were combined into one consolidated scheme, an attempt to take the best features of each previous scheme and have them cooperate.

The consolidated scheme, shown in plan in Figure 49, with a section detail in Figure 48, enacts the land bridge idea, but in favor of creating more substantial fields, puts the beach on the west by the Maryland Science Center. Filtration wetlands swell

in and out below the promenade, and further water cleaning systems extend toward Federal Hill to clean stormwater runoff. This system is detailed in Figure 50.

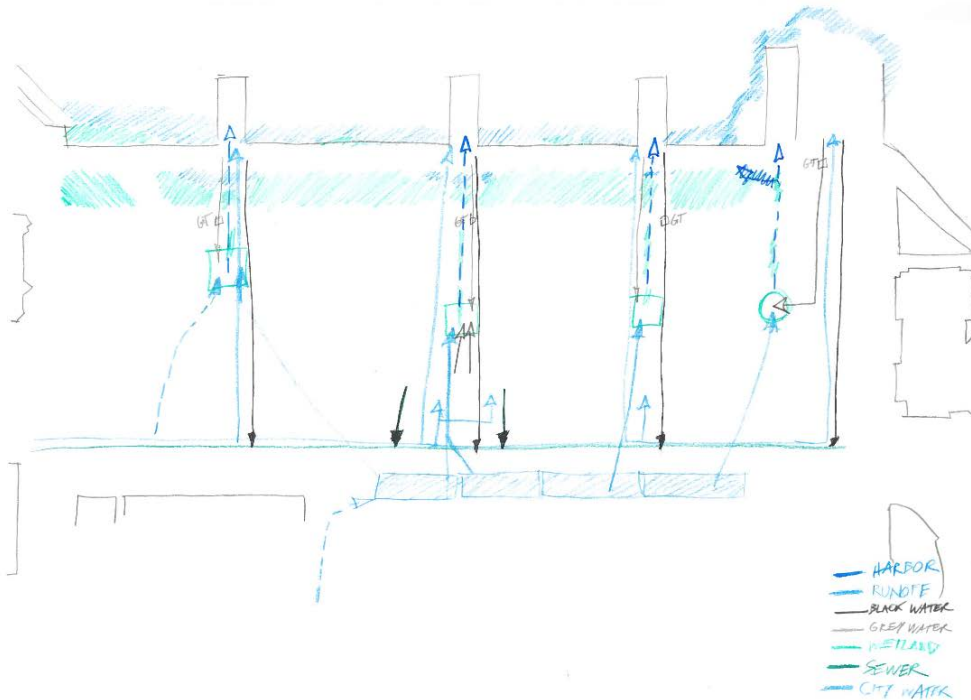


Figure 50 – Water filtration systems on site in first consolidated scheme, image by author.

The museum takes the place of the Rusty Scupper, bringing a sense of closure to the innermost part of the harbor. The exhibit spaces are all oriented to allow views of the harbor, those these views proved to be limited, prompting rethinking in further schemes. See Figure 51 for a schematic first floor plan.



Figure 51 – First floor plan of museum, first consolidated plan, image by author.

Under Hill and Over Hill

Connection

There were many shortcomings in the first consolidated scheme to be addressed, for all its advantages. Foremost was a disconnection between the museum and Federal Hill. There wasn't any formal gesture or even pronounced pathway between the two, though they were arguably the two most important places in the scheme. This led to a series of iterations, beginning with the "Buried Museum" scheme shown in Figure 52. This makes the museum into a second Federal Hill by figuratively draping the lawn and promenade over it.

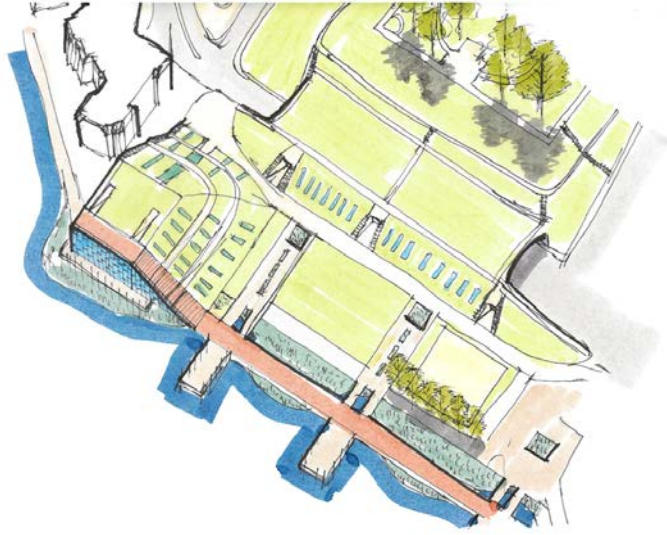


Figure 52 – Axonometric drawing of “Buried Museum” scheme, image by author.

Light would be allowed into the museum spaces through skylights and a curtain wall on the north façade. This proved too restrictive, and robbed the building of a chance to have a presence or identity of its own. This observation first resulted in the “Rising Volume” scheme, shown in Figure 51.

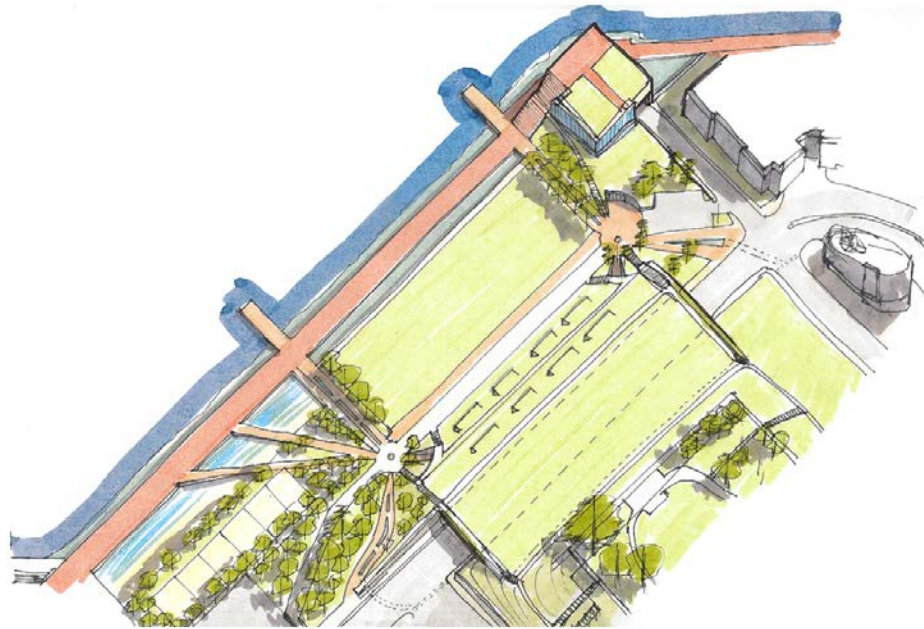


Figure 53– Axonometric drawing of “Rising Volume” scheme, image by author.

“Rising Volume” brings more light into the museum by having the upper floor of the museum protrude from the hill, with its circulation ramps wrapping around its exterior, as seen in Figures 54 and 55.

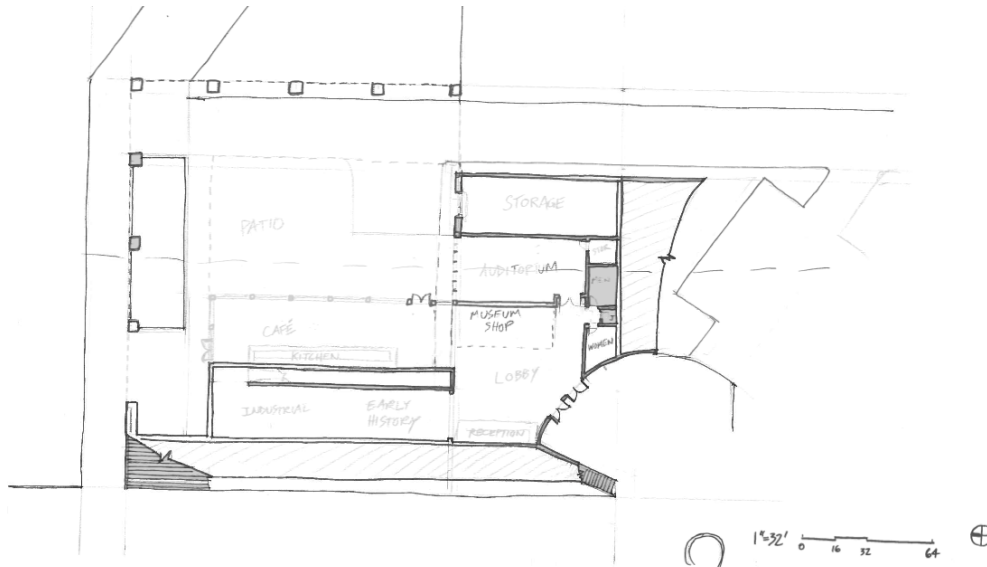


Figure 54 – First floor plan, “Rising Volume” scheme, image by author.

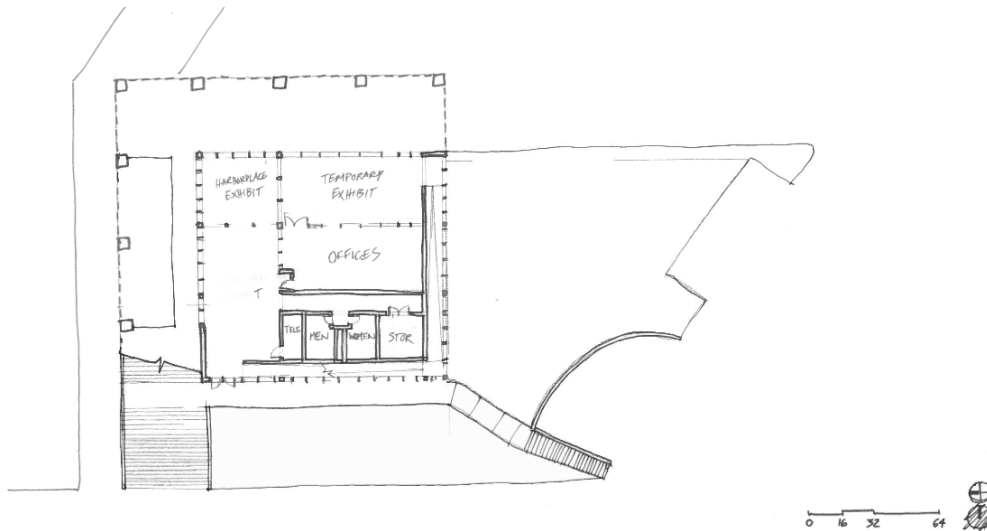


Figure 55– Second floor plan, “Rising Volume” scheme, image by author.

While these modifications slightly improved the situation, the issue remained of the museum's lack of presence, among myriad issues in the floor plans.

Better Flow

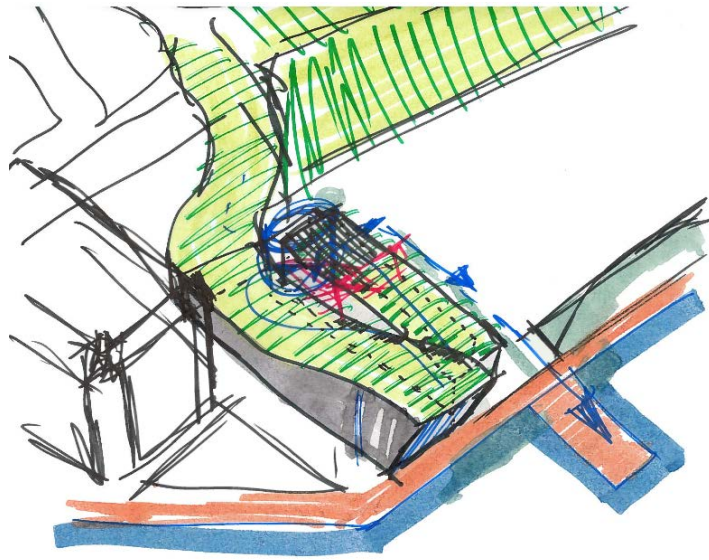


Figure 56 – Three-dimensional sketch preceding “Bridge Flow” scheme, image by author.

More freeform sketching yielded a simpler set of answers, partially shown in Figure 56: an extension of the land bridge onto the roof of the museum without dipping down to the level of the field, and the grouping of the museum spaces into two main volumes. This simplified the procession from the viewpoint atop Federal Hill to the second viewpoint on top of the museum, and allowed views through the museum spaces to the harbor. The “Bridge Flow” scheme was refined in floor plans, shown below in Figures 57, 58, and 59.

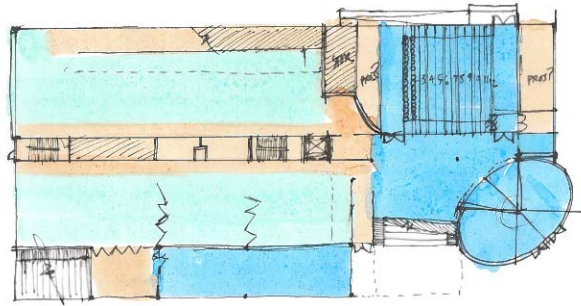


Figure 57 – First Floor Plan of “Bridge Flow” scheme, image by author.

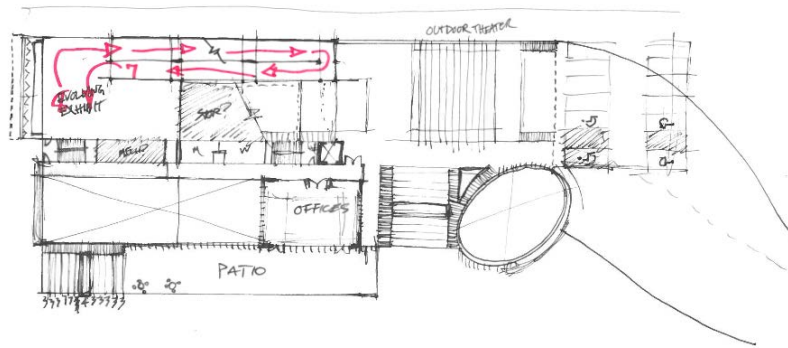


Figure 58 – Second Floor Plan of “Bridge Flow” scheme, image by author.

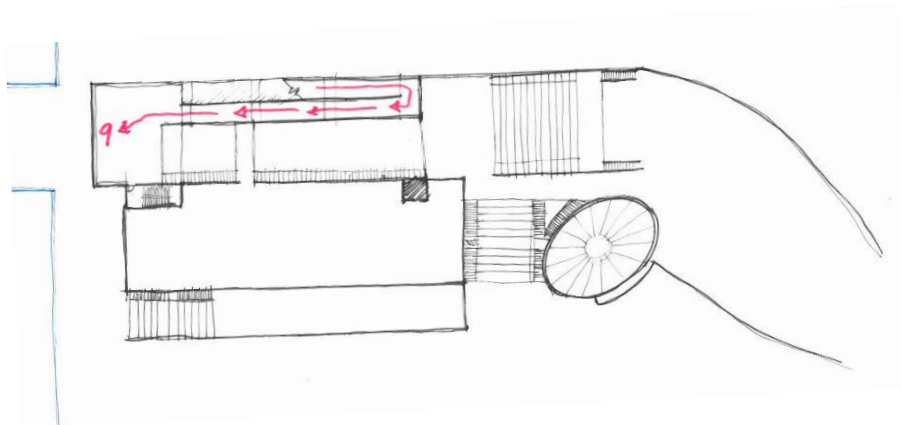


Figure 59 – Roof Plan of “Bridge Flow” scheme, image by author.

These plans group the exhibit spaces, permanent and temporary, on either side of a service core. The museum is entered through an ellipsoidal volume that leads to the auditorium and museum shop. Steps and seating allow for access to the roof from the field level.

Examination of the “Bridge Flow” scheme in section, as shown in Figure 60, revealed a few items.

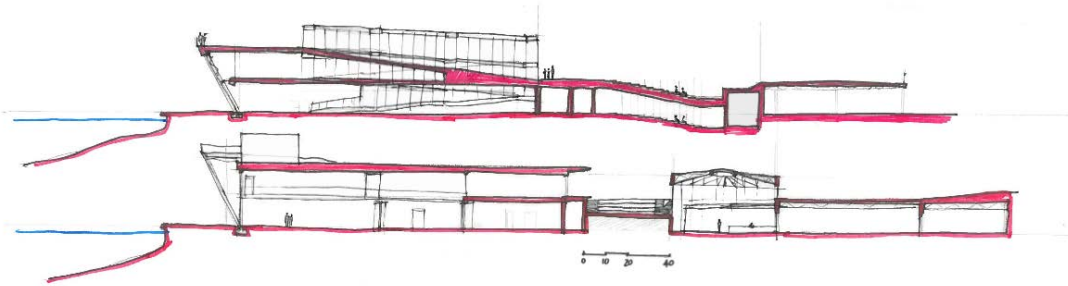


Figure 60 – Sectional Studies of “Bridge Flow” scheme, image by author.

First, that the cantilever of the second viewpoint of the promenade could be even more compelling. Second, that the sectional relationships of the main spaces functioned. Third, that if the building was to survive the century dry, it would have to be lifted on a plinth, as it was drawn at level with the promenade, which is four feet above the current sea level, within the range of impact by 2100.

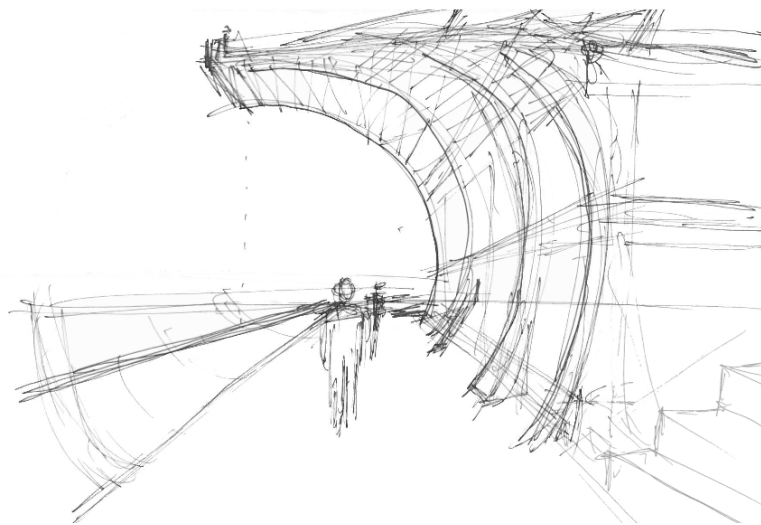


Figure 61 – Perspective view sketch of viewpoint over promenade, image by author.

Sketches, like the one reproduced in Figure 61, led to the extension of the cantilever and its support by sprung steel members, intended to create a compelling

sense of immersion in a volume for those passing underneath, and suspension over the water for those walking above.

Softening of Design Moves

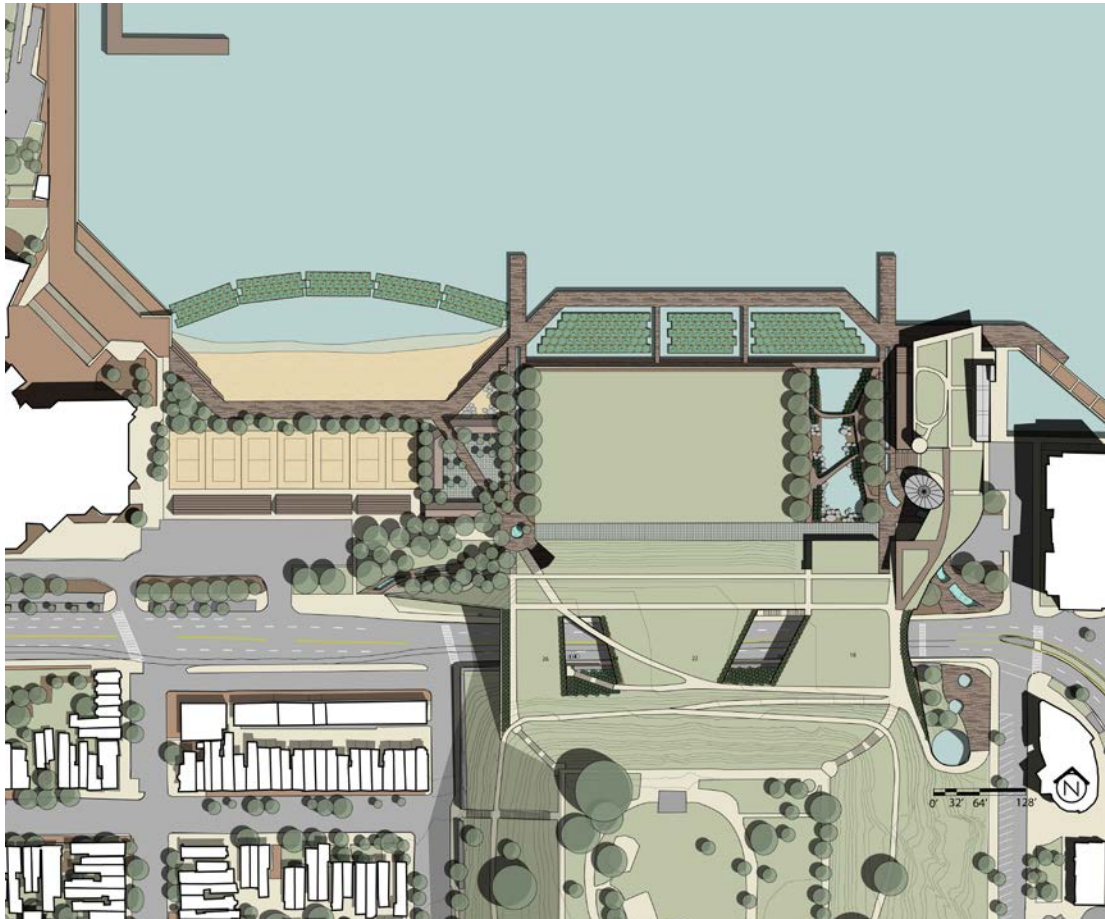


Figure 62 – Process site plan of final scheme, image by author.

A return to site planning after working on the museum led to significant changes, especially after helpful landscape critique sessions. The promenade bent in a sort of sine curve (see Figure 62), to give the beach more direct access to the harbor, and enclose floating wetlands north of the field. Openings in the land bridge allow light to the highway below. Relatively small features, from path simplicity to the character of the wetlands (tamed vs. wild) led to the final design of the proposal.

Chapter 6: Final Design Proposal [Spring 2016]

Site Design

In the final design, the procession from the top of Federal Hill to the harbor's edge is clear and simple. Paths across the land bridge allow easy access for people of all abilities between the museum roof, Federal Hill, and Rash Field. (See Figure 63.) The promenade bends away from its original path, while providing users of the site with new ways to interact with the water, from the boat docks to the beach. Rash Field itself is 210' x 360', large enough to accommodate either a regulation football field or soccer field. Groves of trees on either side provide much-needed shade.



Figure 63 – Aerial view, Final design scheme, image by author.



Figure 64 – Site Section, Final design scheme, image by author.

Stormwater retention tanks and the recreational support program take advantage of the subterranean volume created by the land bridge (see Figure 64). Both of these figure significantly in the water conservation and filtration system of the site, diagrammed in Figure 65. Grey water from the buildings is filtered through bioswales, while the wetlands filter harbor water. Harbor water, in turn, works as condenser fluid in the buildings' chilled beam system.

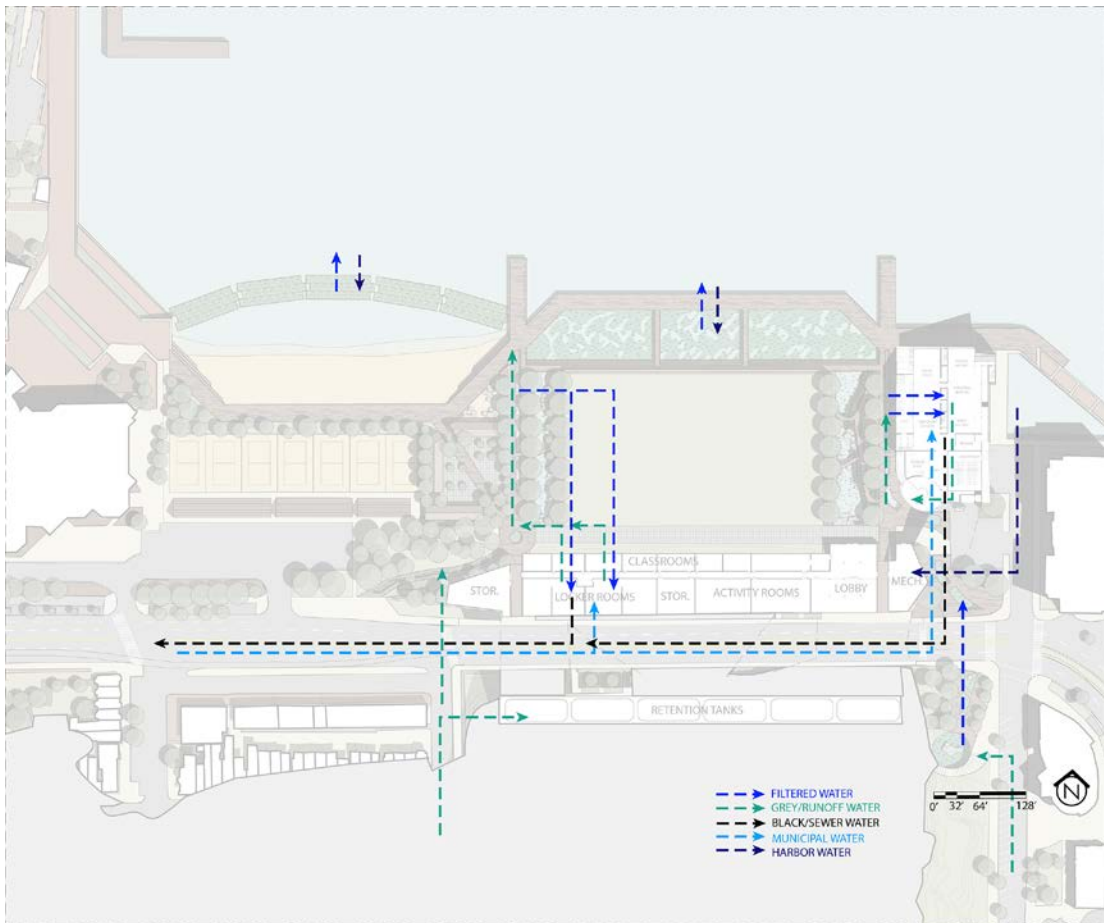


Figure 65 – Water Diagram, Final design scheme, image by author.

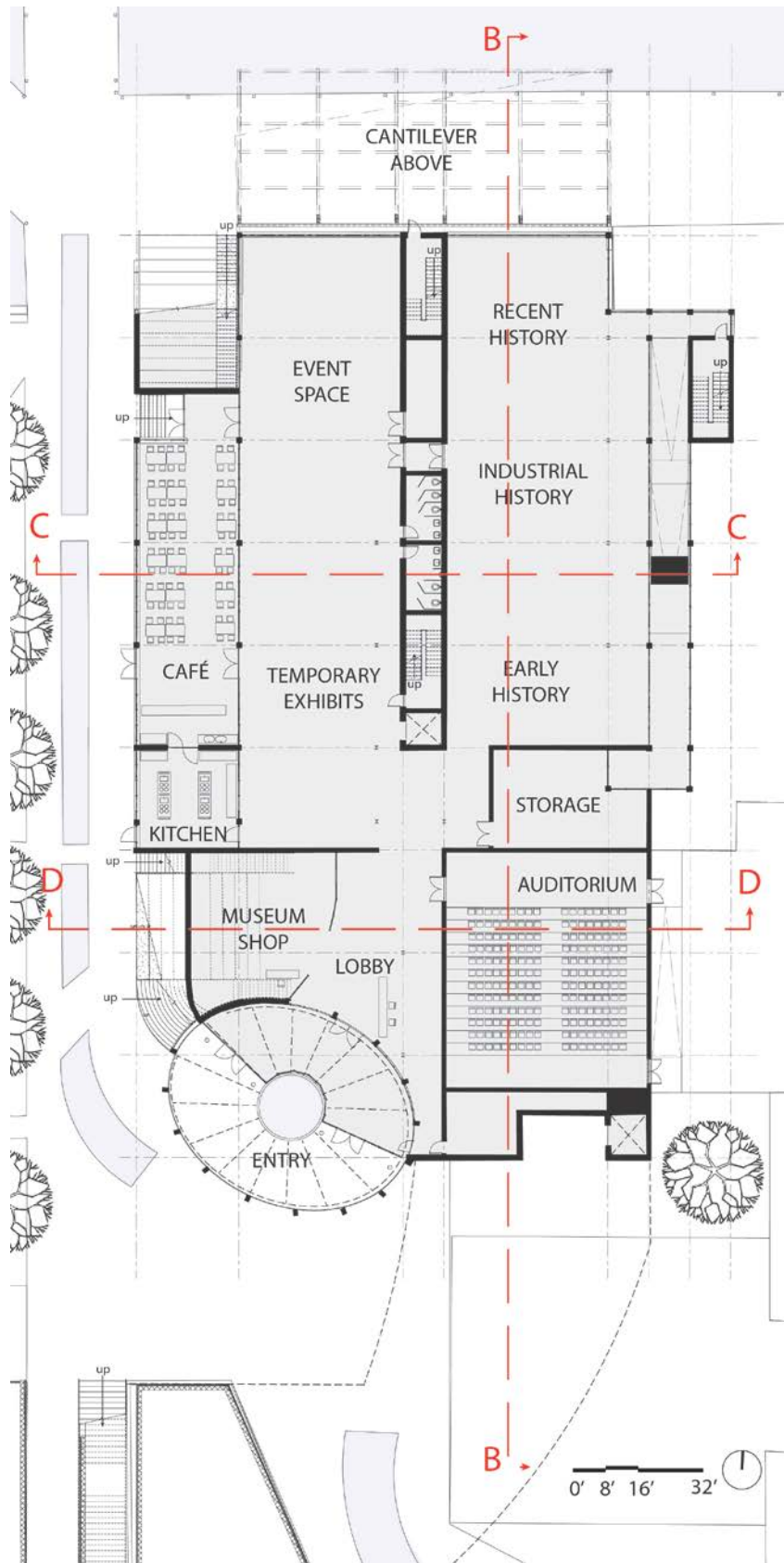


Figure 66 – First floor plan, Museum, Final design scheme, image by author.

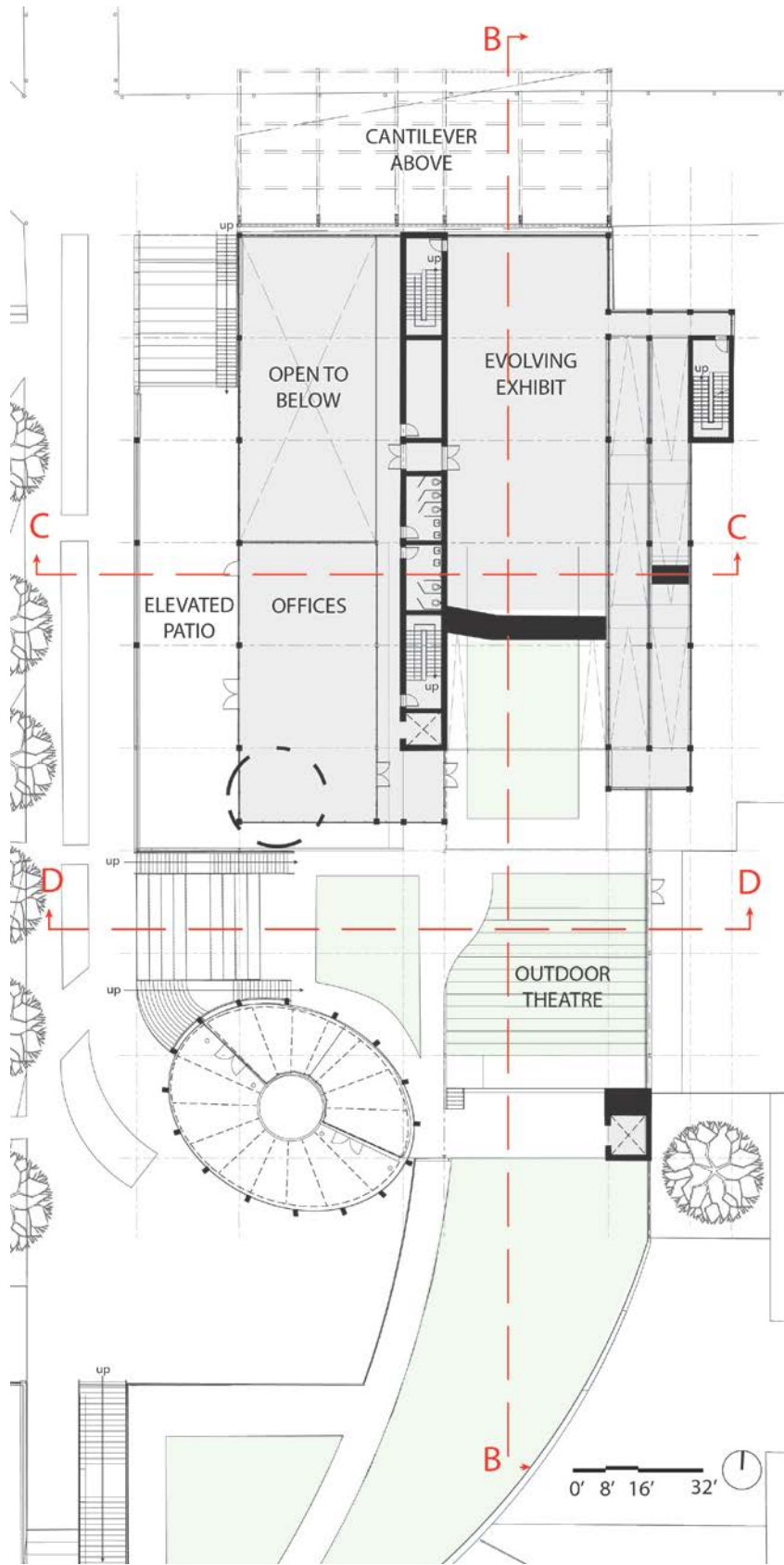


Figure 67 – Second floor plan, Museum, Final design scheme, image by author.

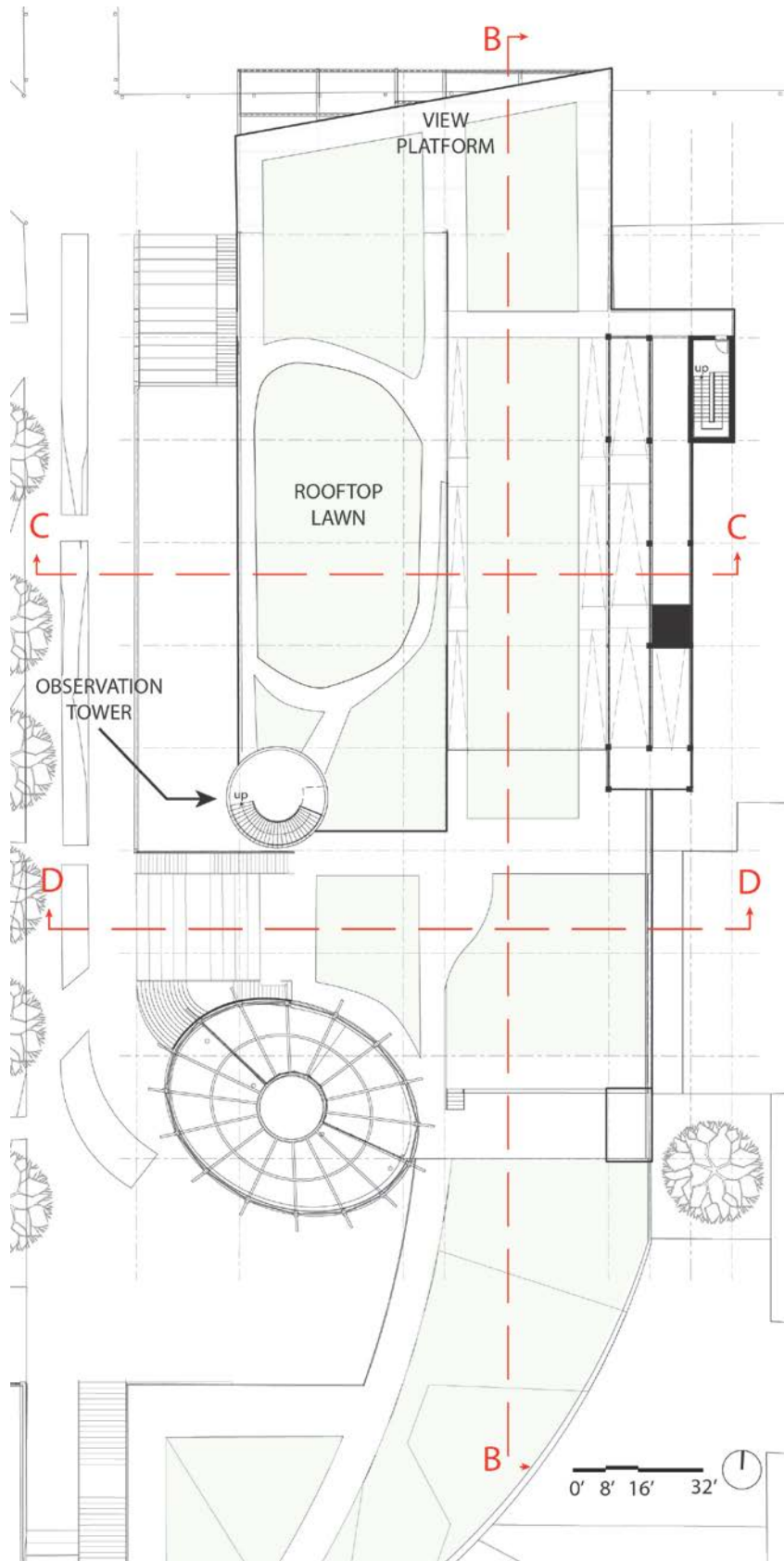


Figure 68 – Roof plan, Museum, Final design scheme, image by author.

The building plans remain largely the same as the “Bridge Flow” scheme. Certain adjustments were made as the building was put on a plinth, and greater structural detail was developed.

On the first floor (see Figure 66) the ellipsoidal entry volume is open-air, with a canopy open at the center to allow water to flow down into a pool connected to the bioswale system. An airlock leads into the lobby, onto which the auditorium and museum shop open. Beyond a threshold lie the exhibit spaces, temporary on the west, permanent sequence on the right. The temporary exhibit spaces connect into the café and its kitchen, which serve museumgoers and other passerby. The café overlooks the nearest grove and a boardwalk pathway. Figure 69 gives an idea of what the entry area looks like.

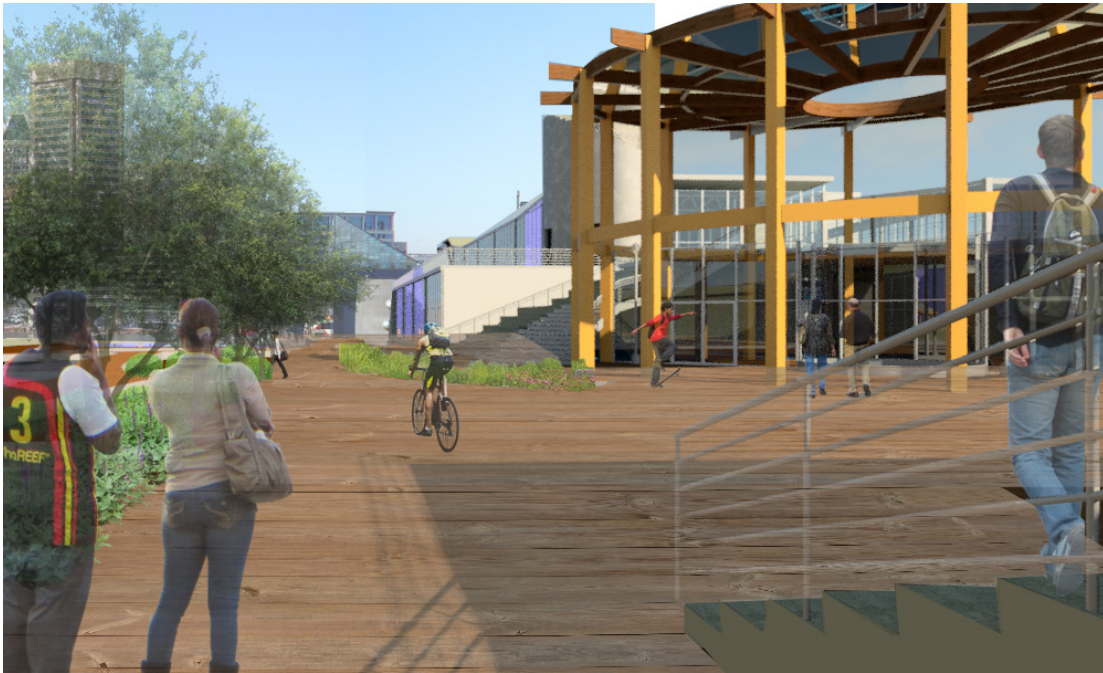


Figure 69 – Museum Entry and boardwalk rendering, Final design scheme, image by author.

The second floor (depicted in Figure 67) contains a continuation of the permanent exhibit, in the form of the evolving exhibit (shown in Figure 70). This room contains a model of proposed designs in the Inner Harbor, while overlooking the selfsame place. This allows visitors to draw connections between the present and future, after just reviewing the past downstairs.

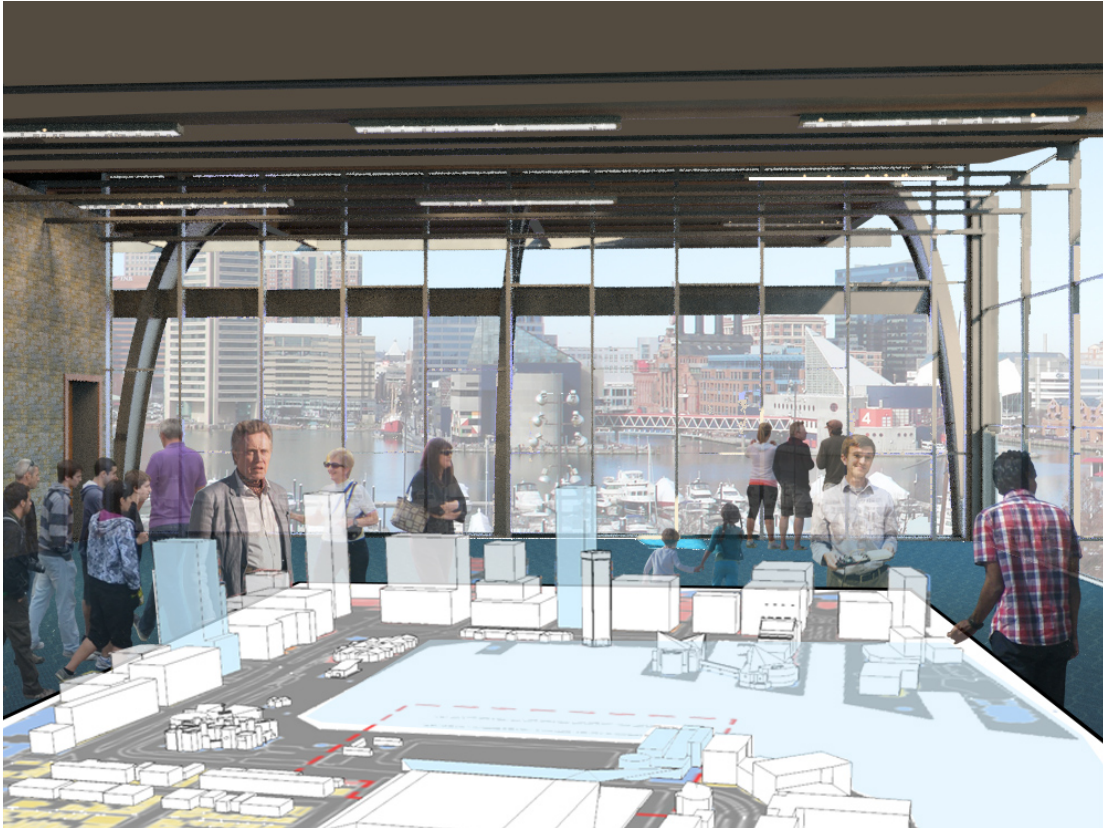


Figure 70 – Evolving exhibit rendering, Final design scheme, image by author.

The administrative offices on the second floor overlook the temporary exhibit spaces and the event space, allowing for a connection between research, administration, design, and display. A walkway at the level of the second floor allows visitors to overlook these same spaces (see Figure 71).

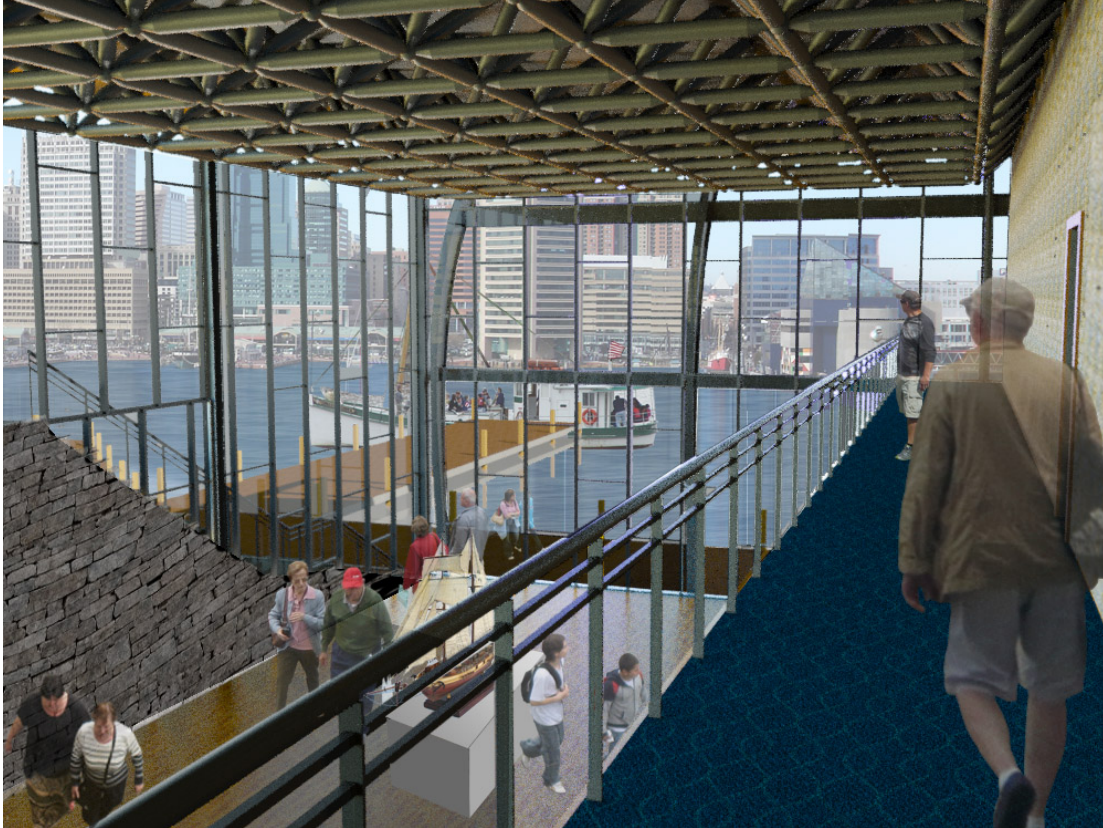


Figure 71 – Event space overlook rendering, Final design scheme, image by author.

At the roof level (see Figure 68 for the plan), the land bridge sequence meets the indoor ramp sequence that winds alongside the permanent exhibits. They continue together toward the viewpoint atop the cantilever, shown in section in Figure 72. Figure 73 depicts the experience of walking under this cantilever. After reaching this point, visitors have the option to walk back down, or walk across a lawn to an observation tower that is a stylistic callback to the Aquarium across the harbor. Figure 74 shows this tower.

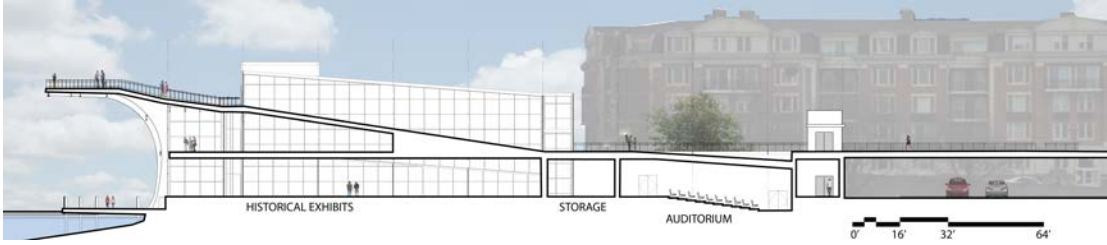


Figure 72 – Building section B-B, Final design scheme, image by author.

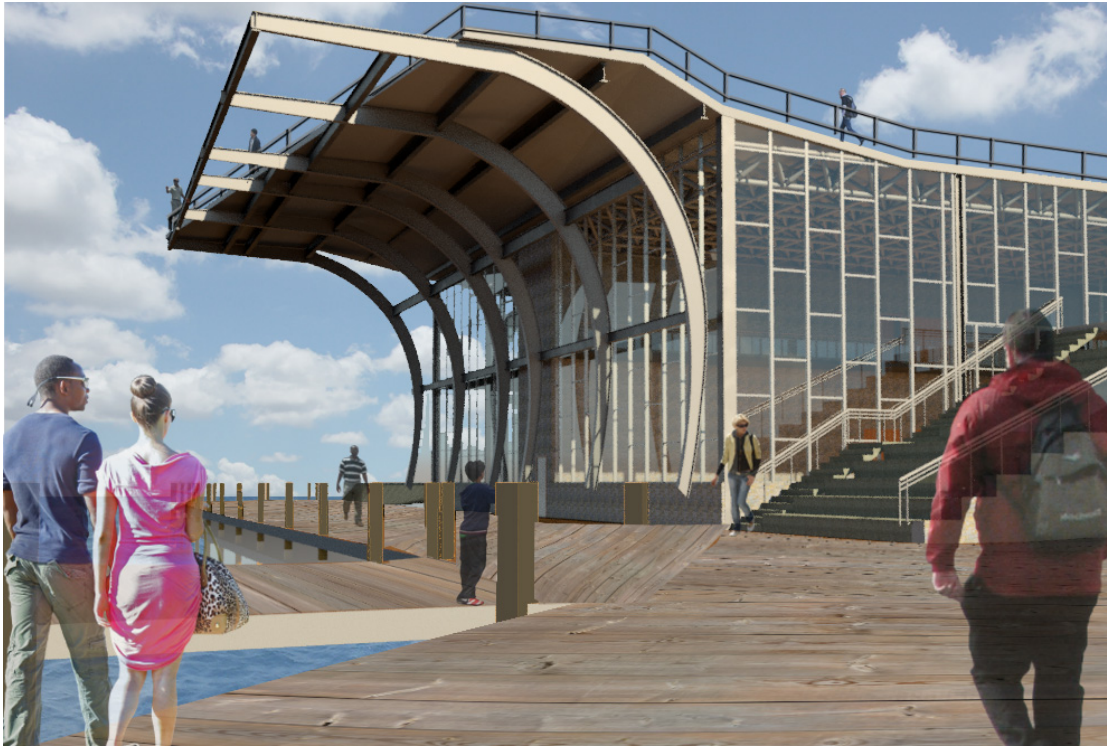


Figure 73 – Approaching cantilever rendering, Final design scheme, image by author.

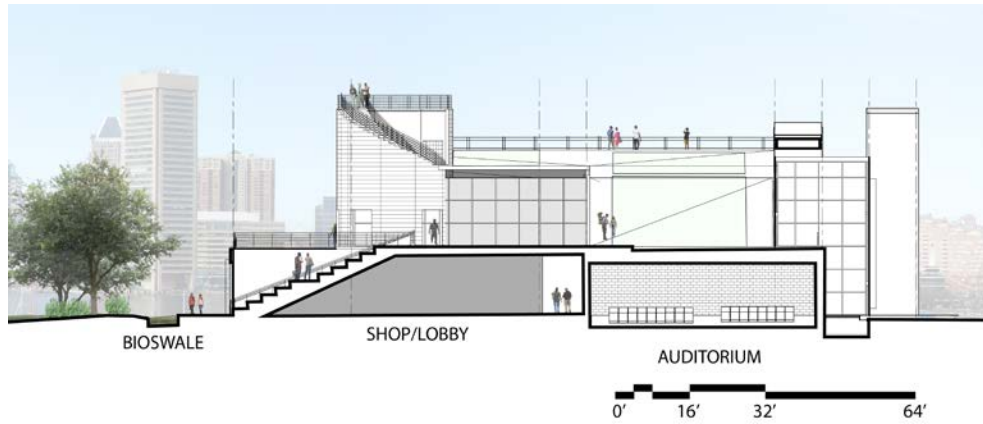


Figure 74– Cross section D-D, Final design scheme, image by author.

Cross-section C-C, reproduced in Figure 75, gives a better idea of the sectional relationship between the roof, the interior space, and the façade of the museum.

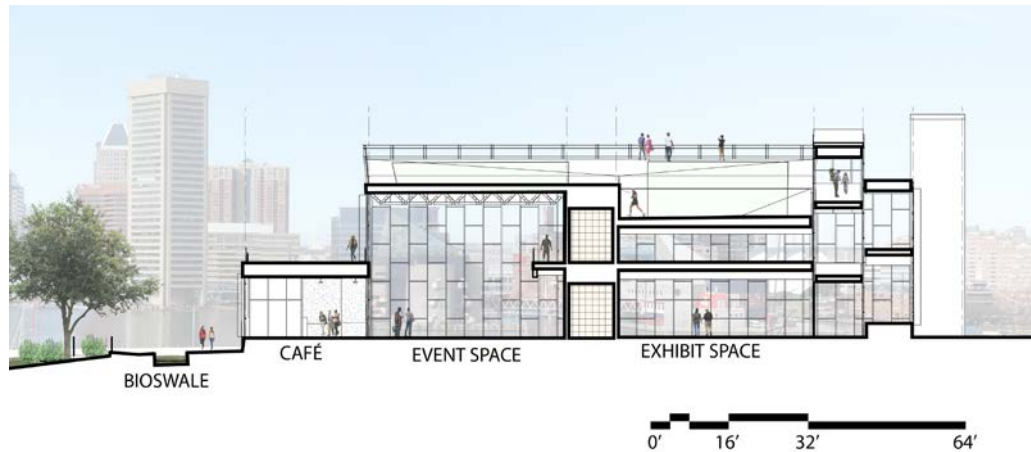


Figure 75– Cross-section C-C, Final design scheme, image by author.

Other items worth note in the final site plan (see Figure 76) include pavilions on the east side of the volleyball courts, allowing shelter for those hosting events on-site; bleachers south of the courts with storage underneath for equipment; as well as several methods to traverse between Federal Hill and the harbor. Figure 77 cuts through the site at the first floor level, allowing a view of the relationship between Key Highway, the recreation support program, the museum, and the rest of the site.

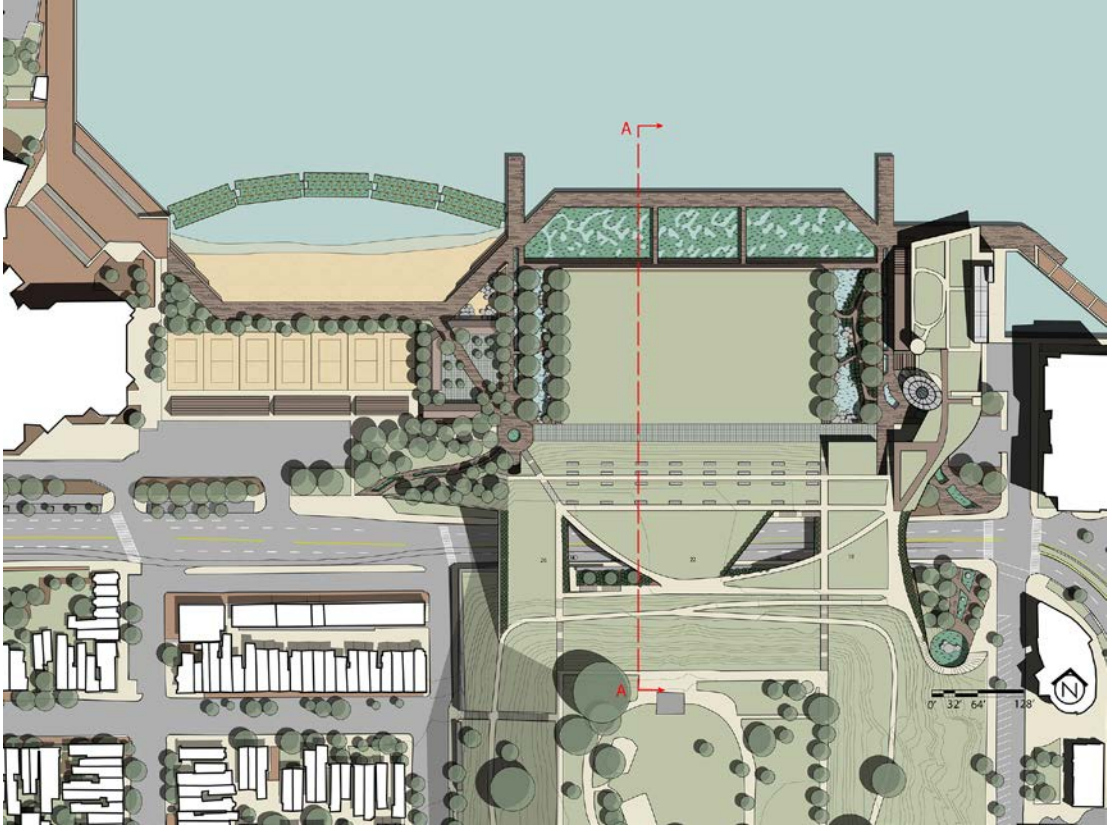


Figure 76 – Site plan, Final design scheme, image by author.

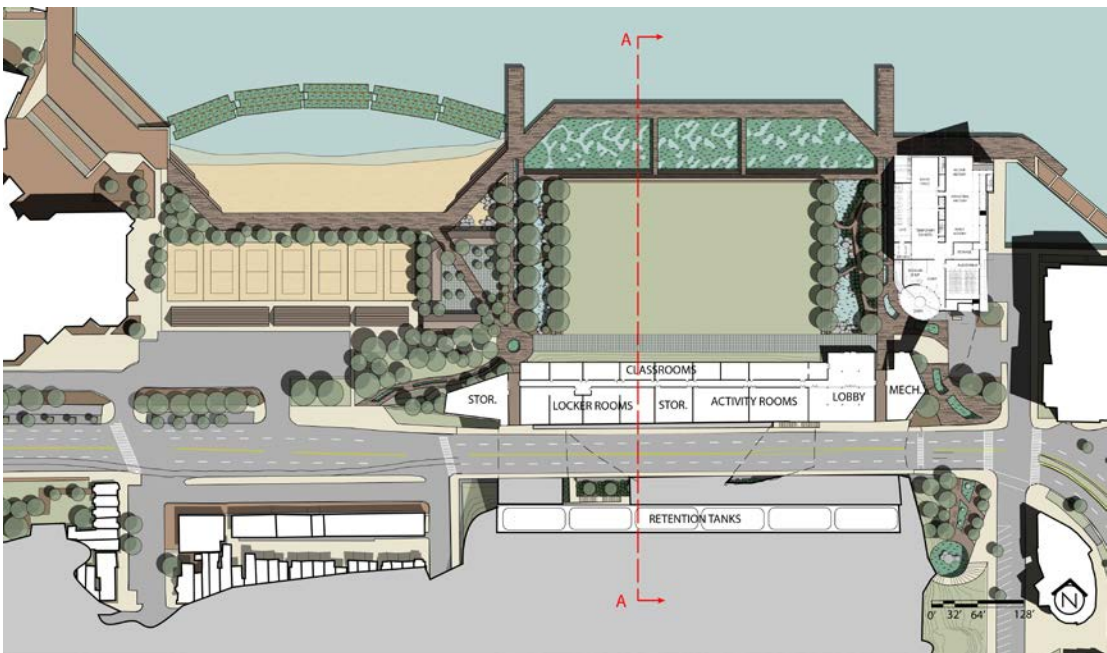


Figure 77 – Site plan, first floor, Final design scheme, image by author.

This proposal addresses the needs of local hydrology and a variety of users of the site, all while creating a place to commemorate harbor history and positively influence its future. This would make the south side of Baltimore’s Inner Harbor a more pleasant, more useful, and more sustainable place.



Figure 78 – Existing harbor panorama from Federal Hill, photo taken and edited by author.



Figure 79 – Proposed harbor panorama, Final design scheme, image by author.

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