Lily Pad Urbanism: Reimagining Seattle's Floating Home Community

Thomas James Bandrowski

A thesis
submitted in partial fulfillment of the
requirements for the degree of

Masters of Architecture

University of Washington
2015

Committee:

Brian McLaren

Nina Franey

Program Authorized to Offer Degree:
Architecture

University of Washington

Abstract

Lily Pad Urbanism

Thomas James Bandrowski

Associate Professor and Chair

Brian L. McLaren

UW Department of Architecture

Today Seattle's floating home community's hinder public water access, and are regarded as a non-preferred use of shoreline environments. This urban condition has caused decline of the floating community during the late twentieth and early twenty-first century. Although historically representing an inclusive housing, the remaining community it has become a symbol of gentrification in the city of Seattle. This thesis argues that new floating communities could positively contribute to urbanity, but argues that designers need to fully understand the political and environmental issues that have currently discouraged there implementation. It hopes to inform the reader on the potential of floating communities, and the potential impact on water-bodies and landscapes, by encouraging a respectful approach to new floating designs in relationship to Seattle's urban future.

Table of Contents

Introduction

Part 1: Thesis Statement 1

Introduction 1

Goals and Objectives 2

Theoretical Framework

Part 2: Floating Home History and Issues 4

Earlier Years: Growing from the Water Environment 5

Modernization and Slum Clearance 7

Late Twentieth Century: a Fight with Urban Growth 9

Shoreline Privatization: Segregated Floating Villages 10

Floating Home Association: A fight for Preservation 12

Current Issues of Gentrification 13

Part 3: Learning from the Existing Community 15

A Sense of Communal Living 15

Shared Resources 16

Private, Semi-Private and Public Spaces 18

Part 4: Precedent Studies 20

Case Study: Floating Houses in IJburg 21

Baca Architects and ZM Architecture, Floating Village for Glasgow 22

Baca Architects Buoyant Starts Urban Housing Concept 22

Precedent Conclusions 22

Methodology

Part 5: A New Water Urbanism 25

Conceptual Position 25

Floating Community as A New Public Edge 26

Democratic Ownership 27

Site Introduction

Part 6: Public Disconnection From Water and Green Space 29

The Duwamish River and South Park Community 30

Neighborhood Disconnection 31

Part 7: Street Ends and Water Access 33

Green space and Shoreline Connection 33

Street Ends 33

Green Space and Street End Map 34

Proposed South Park River Walk 35

Project

Part 8: Master Plan 38

Connecting Back to the Neighborhood 38

Creating a master Plan 39

Part 9: Floating Community at 10th Ave South 40

Using the Forgotten Edges 40

Becoming a Part of the Shoreline Landscape 41

Conclusion 49

Introduction

“It’s not right to put water before people and then keep them away from it.”

William H. Whyte

Figure 1:

Part 1: Thesis Statement

Introduction:

This thesis is fundamentally interested in the relationship between floating home communities, shoreline environments, and the public realm of Seattle. It posits that Seattle's floating home communities have become isolated from the urban fabric, contributing to an image of privatization and exclusivity. The result are segregated "villages" within the greater city, typically constructed within private marina environments (whose interests are barely, if it all, integrated into their surrounding land-based neighborhoods and shorelines). Today, city government and land owners criticize these private moorages as a non-preferred use of Seattle's shorelines, preserving existing floating homes but disallowing new homes to be constructed.

This thesis proposes a new urban model, learning from both the positive and negative qualities of historic floating communities, and building upon this understanding. There are many lessons to be learned from the existing architectural language, infrastructure and urban patterns of historic floating communities. This thesis seeks to explore the term "floating community" and translate it into something more than floating residences; it offers, a floating urbanism that acts as an extension of the public right-of-way; a part of the urban *and* shoreline landscape.

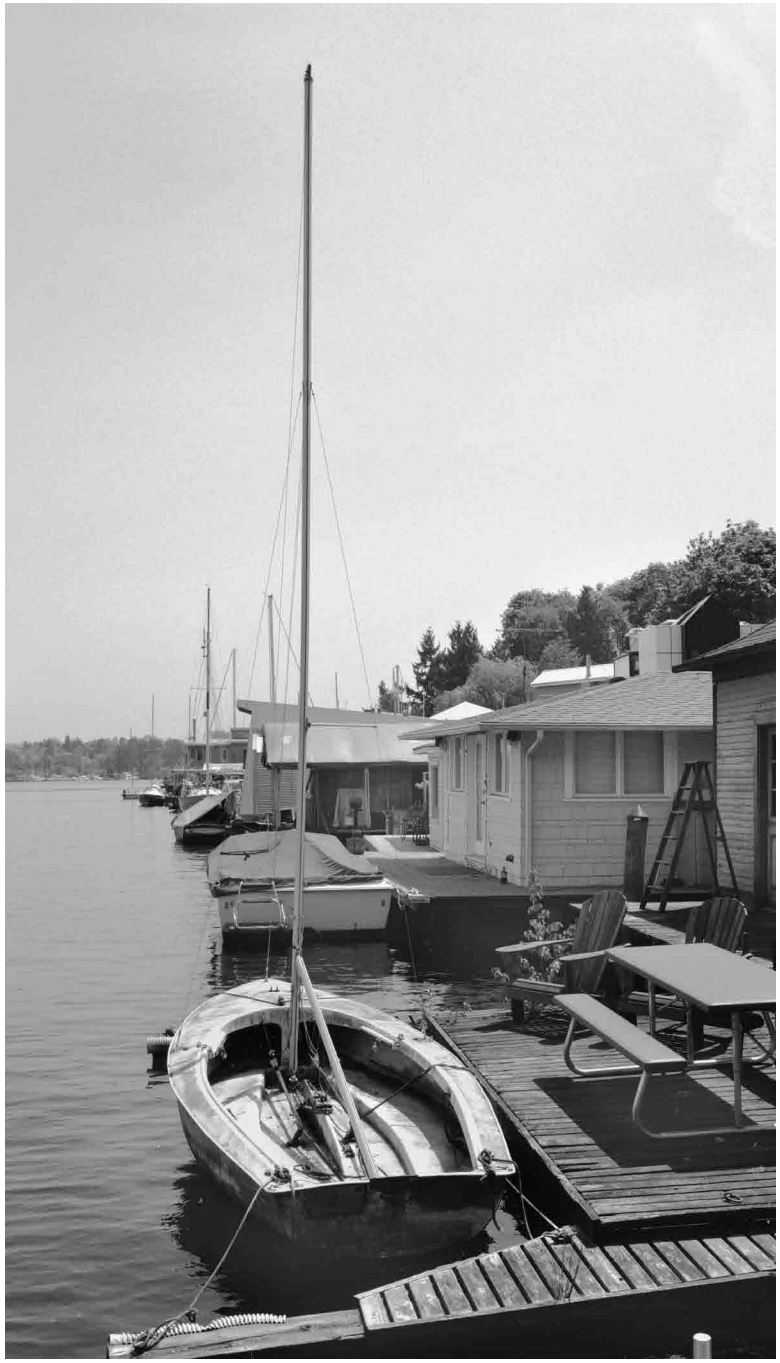


Figure 1A: Floating Homes near Eastlake, 1960.

Goals and Objectives:

The overarching goal of this thesis is to improve the public experience of floating home communities, breaking them apart into a multi- use water urbanism – an extension of the city itself. The thesis begins by observing key political, planning and infrastructural issues hindering current growth of floating urbanism. In response, a new design will re-arrange and re-imagine existing elements, including docks, and homes, culminate into a pattern of water urbanity inclusive to all demographics. It proposes a water urbanism where public water access and floating homes coexist. Finally, this thesis envisions a new floating community in the South Park neighborhood of Seattle, harnessing the power of floating urbanism to reconnect South Park with a disconnected waterfront.

Objectives in the design of a floating community in South Park include:

- Provide a better connected network of public path infrastructure for both neighborhood and public use, a new type of floating streetscape.
- Promote a diverse pattern of urbanism composing areas of intense residential and public use, a multi-functional water urbanism.
- Enhance the experience of a public river walk experience at the edge of the Duwamish river, and create a new connection to the river for citizens of South Park.
- Provide a program of water-based activities such as small boat launch sites and kayaks docks for both South Park and floating home residents.
- Utilize the floating homes and their docks as a medium for habitat remediation on the Duwamish river.

Theoretical Framework

Figure 2:

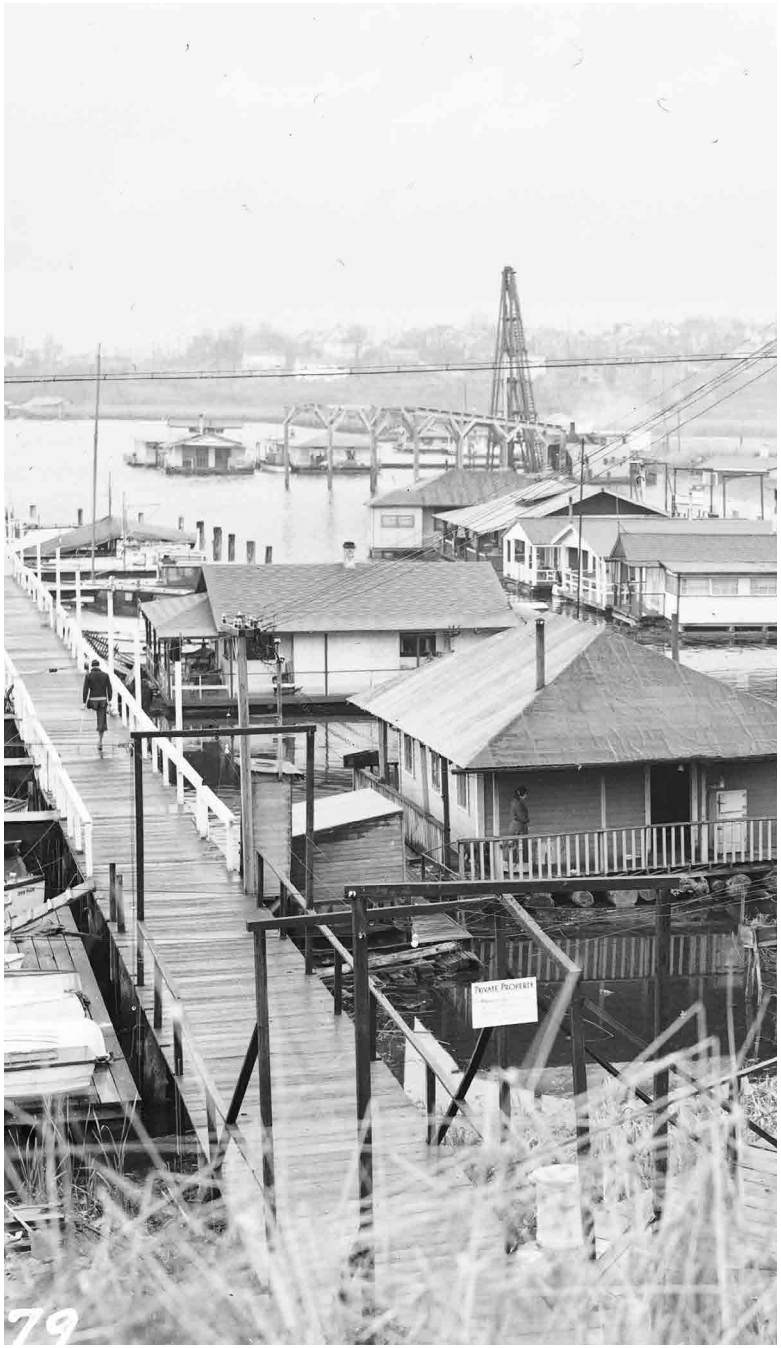


Figure 3: Floating homes in portage bay, 1938

Part 2: Floating Home History and Issues

Floating homes are synonymous with the image of Seattle. When they first appeared on Seattle's water bodies, they functioned as a practical form of housing for a variety of demographics including loggers, saw-millers, and migrant workers. While floating homes still exist, they once covered four times the area.[1] By the 1950s fewer than 500 survived on Lake Union and Portage Bay, and numbers continue to decline. Today no more permits are allowed for additional homes; remaining moorages are "grandfathered" in. Furthermore, the limited housing stock has become a sought after commodity, resulting in expensive real estate rather than a practical form of housing. Today's image of floating community is a major departure from the loggers and seaman who first occupied these buildings over 100 years ago.[2]

In proposing a new typology of floating community, this thesis examines the history of Seattle's floating homes, seeking to understand the social, political and economic events which have caused current decline and dismissal by the city as a "non-preferred" use of shoreline environments. Understanding this piece of Seattle's urban history is imperative to understand how to design a new and improved floating community.

1Gabor, Mark. Houseboats. First ed. Vol. 1. Books: Ballantine, 1979. Print.

2 Droege, Peter. Floating Shelter. First ed. Cambridge Massachusetts: School of Architecture and Planning, MIT, 1978. Print . Page 80.

Earlier Years: Growing from the Water Environment:

During the 1880s, Seattle citizens first made floating houses by building small shacks attached to cedar log rafts. These structures evolved over time in response to changing environmental conditions and surrounding resources at hand. As logging industry boomed, there was a surplus of derelict cedar logs in local water-bodies. This abundance of a resource was coupled with a desire to live close to the water's edge, particularly for people who worked on water, including fishermen, loggers and dock workers. Soon floating construction caught on, evolving into larger structures for families and even wealthier citizens.[1]

Figure 4: Schahn family on their floating cabin at Rainier-Beach, 1902.

Figure 5: Home near the University of Washington's Union Bay shoreline,1907.

1 Droege, Peter. Floating Shelter. First ed. Cambridge Massachusetts: School of Architecture and Planning, MIT, 1978. Print . Page 81.

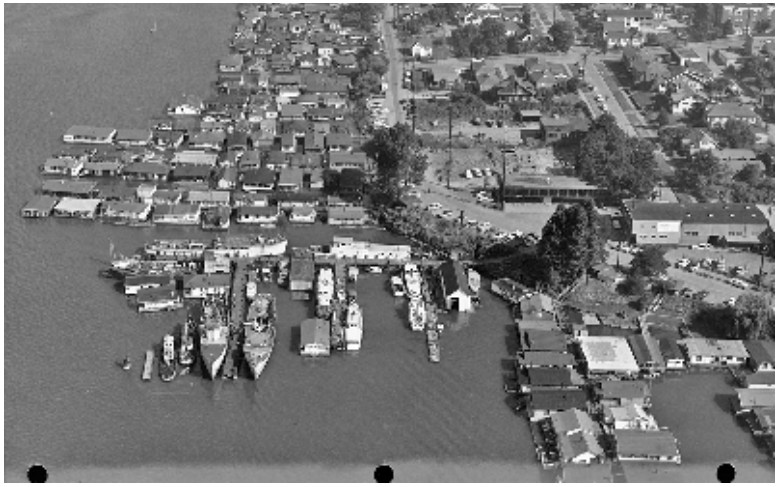


Figure 6: Floating homes on Lake Union, 1962.

Figure 7: Floating Homes on Lake Union, 1931

In 1917 there were an estimated 2,500 floating homes in Seattle, During the Great Depression, floating home was an affordable housing solution. For the poor, they were the cheapest housing available because they gave urban citizens an alternative to regulated land-based homes. During Seattle's pre-war years, shoreline space was abundant, and moorage was inexpensive and plentiful. This facet of the historic urban landscape gave floating homes a unique advantage, and floating communities thrived during the years before the Second World War, surging in number to approximately 4,000 by the early 1940s.[1]

Seattle's urban shoreline has changed substantially since the early 20th century, but it is important to recognize that floating homes contributed to increased urban density, particularly in the ability to use the waterscape as an architectural site, making use of urban space otherwise left empty.

No longer is moorage as plentiful as it was then- the current urban shoreline is a crowded mix of urban uses, all competing for space at the water's edge. Regardless of a new, competitive edge condition, water still exists as an abundant spatial resource. This thesis aims use the floating homes as a positive addition to Seattle's housing stock, using this type of architecture to once again become a positive contribution in the city.

1 Droege, Peter. Floating Shelter. First ed. Cambridge Massachusetts: School of Architecture and Planning, MIT, 1978. Print . Page 82.

Modernization and Slum Clearance

After the World War II, approximately 2000 floating homes remained. However, by the late 1940s, city officials attitude toward the floating community had changed drastically. Floating homes had become associated with squatter settlements and “blight.” City government and more affluent citizens (mostly shoreline landowners) viewed them as undesirable slums on the waterscape and shorelines. This was also tied to a national tendency towards urban renewal projects.

Their decline cannot be associated with one single issue or event, but rather a combination of political, social, environmental and economic factors that challenged the floating home community from the 1950s through present day.[1] Rising postwar property value, combined with a desire to clean up slums, led to floating home opposition. In the 1950’s, modern standards of living were imposed on a community with poor sanitary conditions. A number of long established owners did not have the financial means to meet new infrastructure requirements, and many old-timers were forced out as a result. Floating home owner Phil Frank said in 1978: “They prohibited you to be poor, even by choice.”[2]

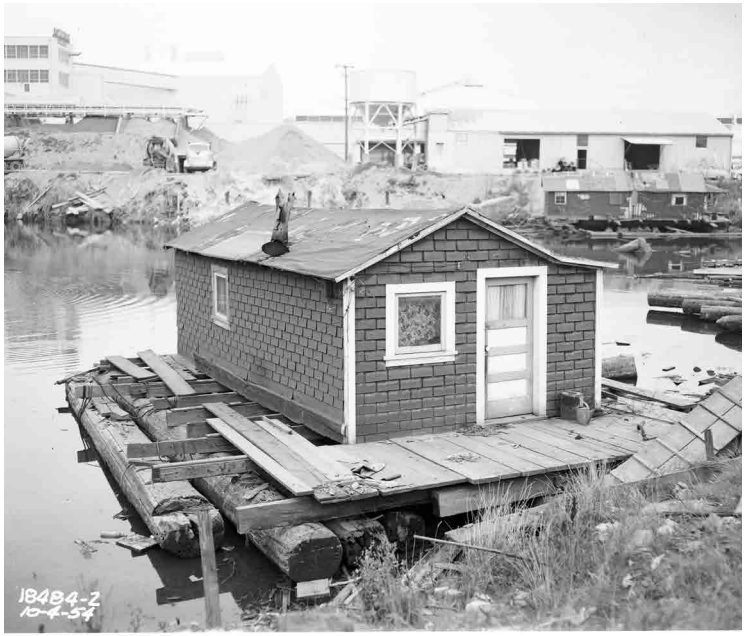


Figure 8: This home on the Duwamish river in 1954 is an example of the humbler (small and inexpensive) floating structures built during the Great Depression.

Figure 9: Rainier Beach floating homes, date unknown.

1 Mendleson, Susan Lamarche. Living on the Water: Introducing Floating Homes as a New Housing Type to an Existing Waterfront Community. Seattle: U of Washington, 1991. Print.

2 Droege, Peter. Floating Shelter. First ed. Cambridge Massachusetts: School of Architecture and Planning, MIT, 1978. Print . Page 80.

Figure 10: Floating homes on Lake Union in 1960. Here, floating residents were increasingly evicted. Moorage owners (dock owners the homes rented from) had greater economic incentive to rent their dock for pleasure boats and other maritime uses, rather than for homes.

Late Twentieth Century: a Fight with Urban Growth:

Less-than adequate infrastructure meant sewage dumping was commonplace before the 1950s and 60s- this contributed to their perception as a slum. Paralleling this issue was an increase in shoreline land value. Property owners saw incentive to lease water-space for maritime businesses and moorage of pleasure boats, rather than floating homes.[1] Floating home communities in Lake Washington and along the Duwamish River quickly disappeared. Industry and Seattle's increasing land values are attributed to these disappearances.

In 1952 a city ordinance was passed declaring all floating homes unsanitary. At first many homeowners protested to the city with little success. However in 1962 the Floating Home Association was formed, bargaining effectively with city government. Soon decline leveled off, but the floating home community began seeing a shift in how people approached home ownership. Floating communities felt the combination of economy, convenience, and pleasure, that shoreline property afforded.[2]

They could no longer thrive as alternative unregulated dwellings, as they had originated as in the 19th and early 20th century. The shoreline edge had become prime real-estate instead of a bountiful resource.

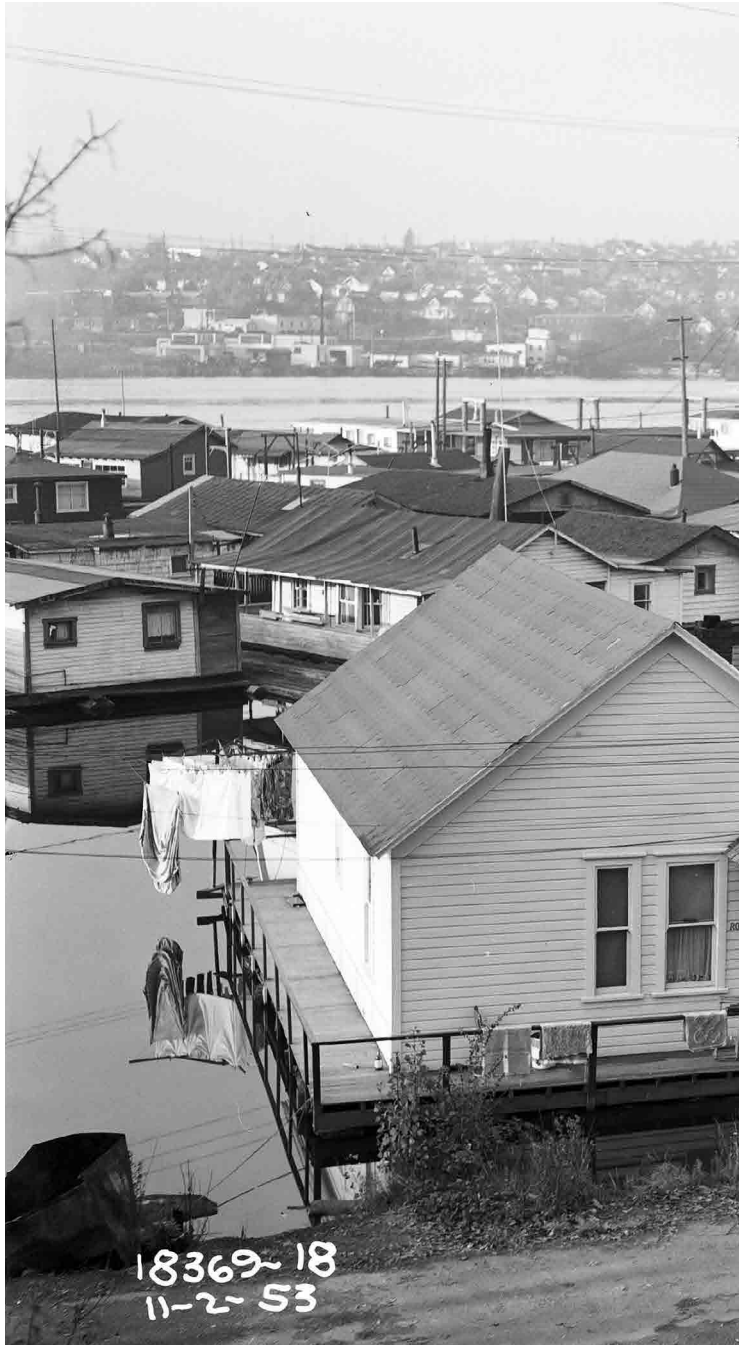
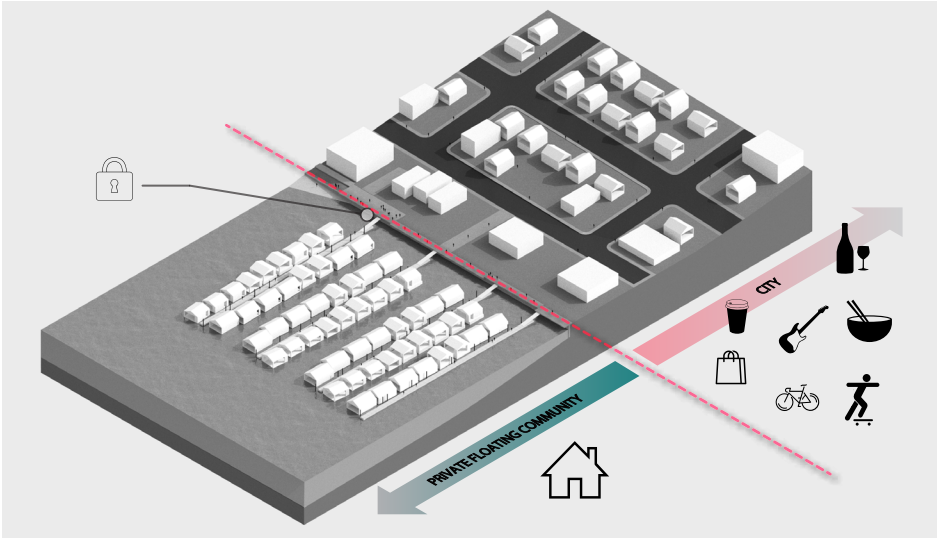


Figure 11: Floating Homes at Roanoke Street,1953

1 Droege, Peter. Floating Shelter. First ed. Cambridge Massachusetts: School of Architecture and Planning, MIT, 1978. Print . Page 80.

2 Gabor, Mark. Houseboats. First ed. Vol. 1. Books: Ballantine, 1979. Print.



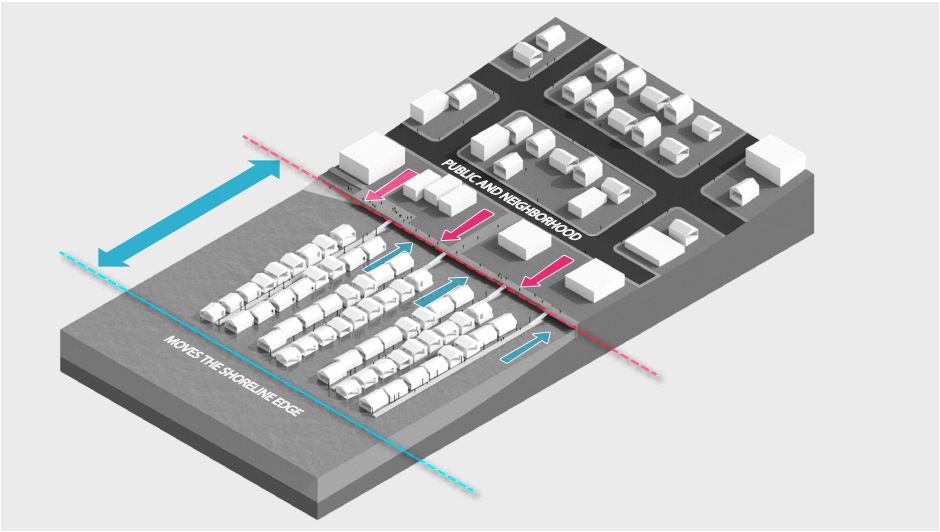


Figure 12: Issues diagram

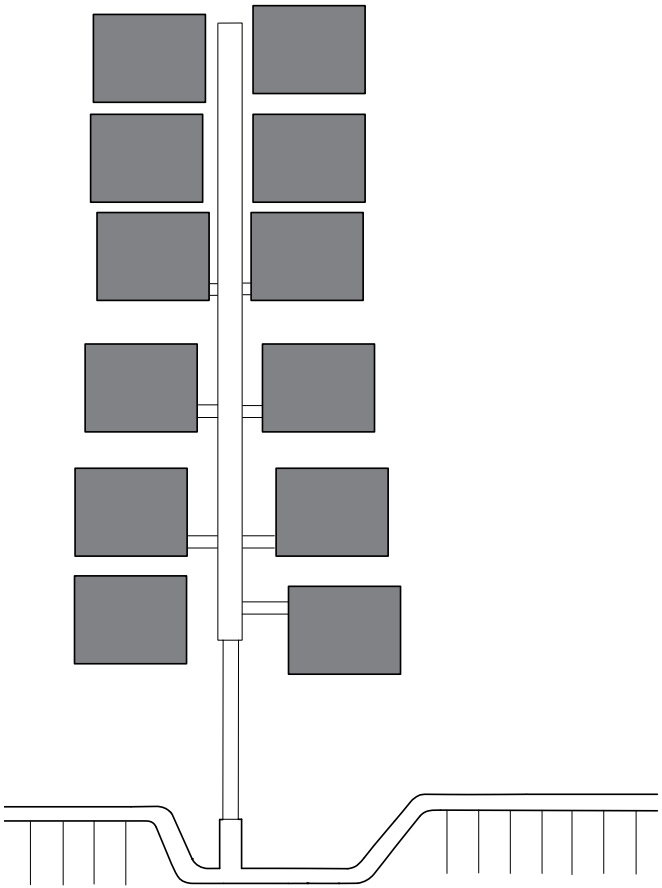
Shoreline Privatization: Segregated Floating Villages:

Floating home owners gathered together to form cooperative docks, purchasing shoreline properties where floating homes moored. These shared docks resemble a similar model to condominium ownership, even in the physical architecture itself where a dock is arranged in a single-loaded corridor configuration. In these current communities, floating homes are places on the sides of the shared dock, typically about 5 feet wide, acting as a public room. Co-ops provided a permanent solution in response to increasing evictions, a result of moorage owners' monopoly over floating home owners. Shared dock ownership eventually became the standard model for floating homes communities.[1] 40 floating homes owned their own moorage up to the mid-1970s, but by 1986 over 190 cooperatively owned their own sites. At the time it was considered the ultimate solution to the "moorage eviction problem."[2]

Today, floating home communities have voiced their need for the cooperatively owned moorages, protecting their community and lifestyle. However, this thesis observes that while privatization has helped preserve the community, it has done so at the expense of segregating them from the greater urban fabric, and in doing so removing the water's edge from the public realm.

1 Droege, Peter. Floating Shelter. First ed. Cambridge Massachusetts: School of Architecture and Planning, MIT, 1978. Print . Page 84.

2 Mendleson, Susan Lamarche. Living on the Water: Introducing Floating Homes as a New Housing Type to an Existing Waterfront Community. Seattle: U of Washington, 1991. Print.



Above: a typical circulation arrangement. Docks are arranged in a single-loaded corridor configuration. This is space efficient but creates a social hierarchy- floating homes have the priority at the waters edge, hindering and often removing all public water access.

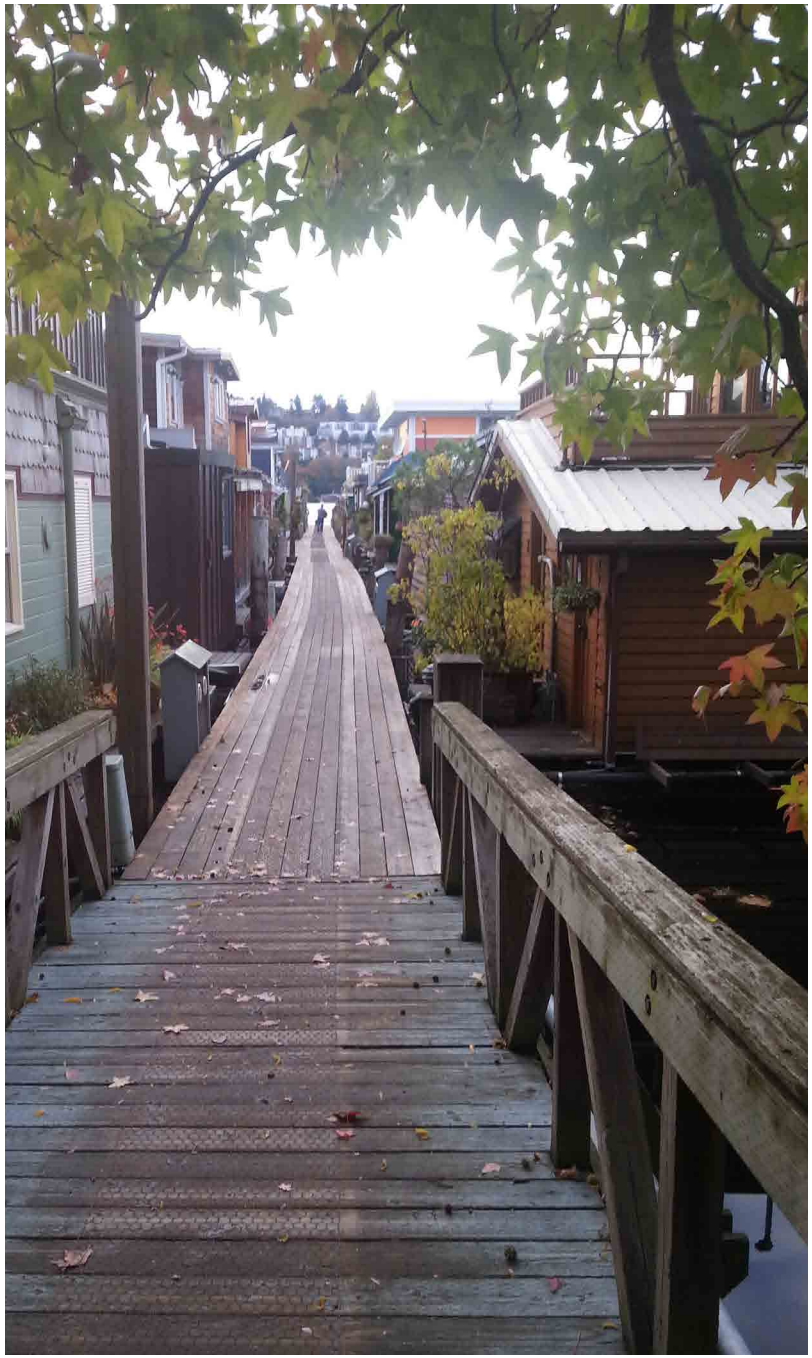


Figure 13: Private Floating Community in EastLake

Figure 14: Roanoke Reef present day.

Floating Home Association: A fight for Preservation:

During the 1960s, floating communities gained some political strength through the formation of the Floating Home Association (FHA). In response to the efforts and activism of the FHA, Seattle adopted floating home zoning- all moorings were treated similar to land lots and taxed. The FHA strengthened the community by offering support for all environmental regulations: the organization became the strongest advocate for cleaning up the lakes and promoting a "diversified marine environment" which would include floating homes and other shoreline uses. The FHA cooperated intensively with the city council and community groups. Sewage issues were finally mitigated by means of new infrastructure on floating home docks, and their community image moved away from that of logger shacks or slums towards a modern and "sanitary" means of housing.[1]

Fears of having their community condemned has long past- the city is no longer labeling them "unsanitary." However, postwar regulations have brought new challenges to their continued existence. Modernization produced new and unanticipated restrictions. The real estate market has capitalized on floating home living, gentrifying the finite number of floating real estate that still exists. Since 1976, city government has allowed only 480 moorages to remain. Because a finite amount of homes are permitted, they have become a preservation of history, more an overpriced novelty than a thriving method of urban housing.

1 Mendleson, Susan Lamarche. Living on the Water: Introducing Floating Homes as a New Housing Type to an Existing Waterfront Community. Seattle: U of Washington, 1991. Print.

Current Issues of Gentrification:

Today's issues stem from the conflict that started during the 1940s slum clearance, and loss of moorage of the 1960s and 1970s. In the twenty-first century, wealthier citizens have purchased the majority of floating homes, with most selling for higher than the average Seattle residence, which currently (2015) is 519,950.[1] This marks a large departure from the origins of the floating home. This economic change is challenging for older floating community members. Today there is a greater financial expense in the form current zoning ordinances that require costly modern construction methods. These new conditions conflict with an older generation of floating home owners, who still hold onto ideals of an economically diverse community. Many of the owners believe that it can only continue to exist as real-estate for wealthier members of society. As a result, affordability will most likely be eliminated as a potential attribute of future floating homes, particularly as Seattle continues to grow and densify and shoreline environments become even more developed.[2]

This thesis speculates that waterfront property will always command a premium price as real-estate, and that gentrification of neighborhoods will occur in relation to limited supply of a sought after resource--in this case shoreline property.

However, it postulates that a new type of moorage infrastructure and ownership can promote floating community without segregation from the greater civic landscape. It will propose to legitimize their presence by mitigating mass privatization of shorelines, a design move that has blocked public access from the water edge and continued historical political tension into the current era.

1 "Seattle, Washington." (WA) Profile: Population, Maps, Real Estate, Averages, Homes, Statistics, Relocation, Travel, Jobs, Hospitals, Schools, Crime, Moving, Houses, News. N.p., n.d. Web. 18 Dec. 2015.

2 Mendleson, Susan Lamarche. Living on the Water: Introducing Floating Homes as a New Housing Type to an Existing Waterfront Community. Seattle: U of Washington, 1991. Print.

Figure 15

Figure 16

Figure 17

Figure 18

Figure 19

Figure 20

Figure 21

Floating communities typically have “no trespassing” signs and locked gates, blatantly cutting them off from the public.

Part 3: Learning From the Existing Community

This thesis recognizes that Seattle's current precedent for floating communities is plagued with issues, but also seeks to understand its positive aspects. The architectural and urban qualities of these sites enhance a sense of shared space and provide low-rise, high-density urbanism. While they are criticized as insular villages isolated from the greater public life of the city, these communities provide a socially engaging communal environment.

A Sense of Communal Living:

Communal living is a natural by-product of the co-operatively owned moorages. Homes are arranged in close proximity to each other, bringing neighbors together and enhancing social opportunity as well as putting "eyes on the street" for enhanced safety.

Many of the people interviewed for the thesis have expressed the above as the most beneficial aspect of this lifestyle. Mack Hopkins, a resident on a Portage Bay home for 44 years, described each community as having it's own "dock culture, each with their own unique social identity." He pointed out that the word "dock" is synonymous with community. Mack stated that "he was no longer fit for land". At 90 years of age, he simply cannot adapt to social isolation typical of North American housing. "People look out for each other on this dock... People of all ages and backgrounds support each other, we get along in a way that is different form people on land." A Portage Bay resident mentioned, there exists a sense of "help and desire to share expertise for anybody who needs it; everybody seems to be an expert at something here, whether it be fixing log stringers (large metal straps that harness flotation logs together on older homes) there is always somebody to lend a hand/ knowledge."

Figure 22: Floating community docks are a social place.

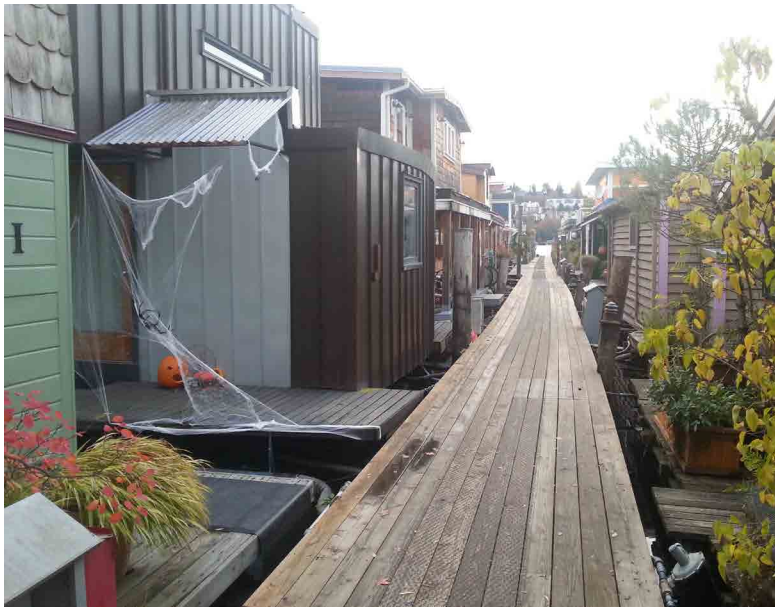


Figure 23: An older wood dock in a Easklake Floating Community

Figure 24

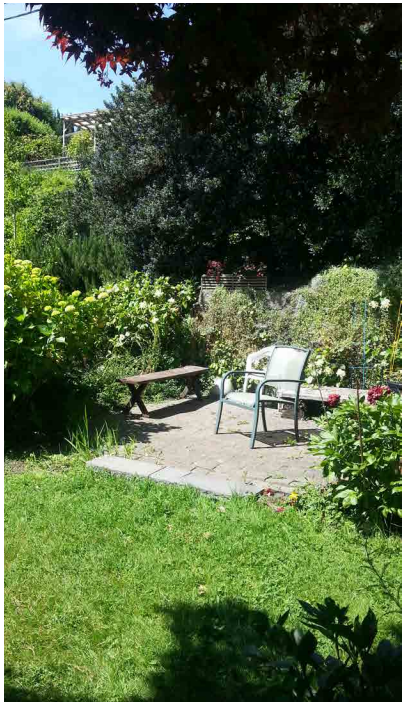


Figure 25

Figure 26

Shared Resources:

Floating communities share housing resources that single family residences who own houses do not.

Figure 24, top: Shared mailbox near a floating community dock entrance.

Figure 25, bottom left: A community garden on the shoreline property in Portage Bay.

Figure 26, bottom right: A community storage shed where tools and garden equipment are kept for dock and home maintenance. Garbage and recycling is also taken to this central location.

Figure 27: A floating community entrance in Portage Bay.

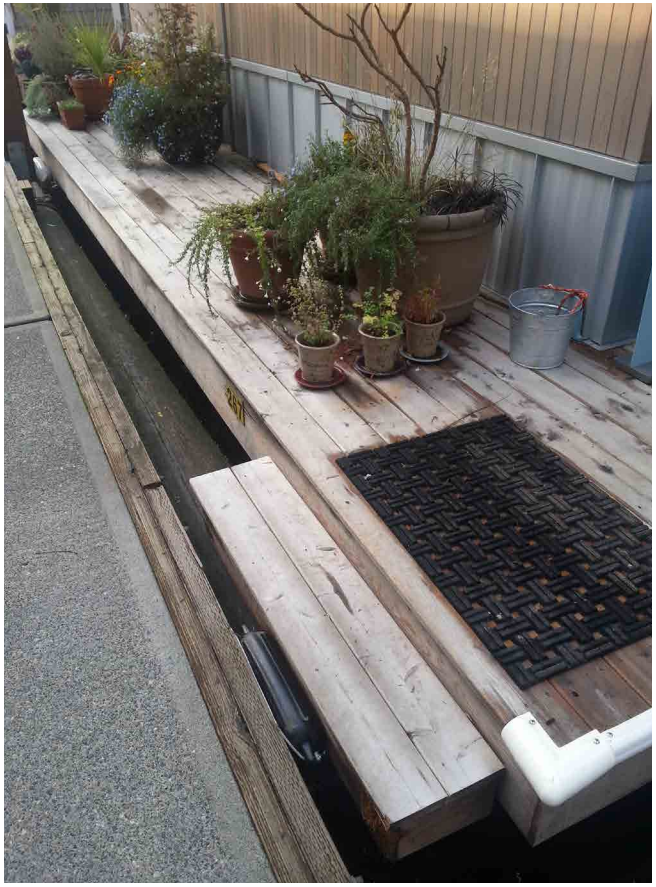


Figure 28

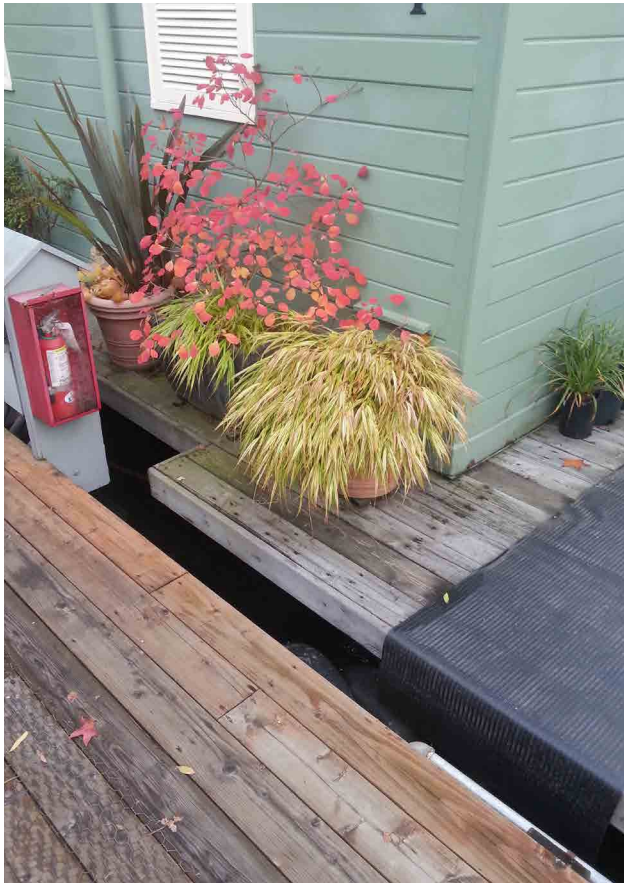


Figure 29

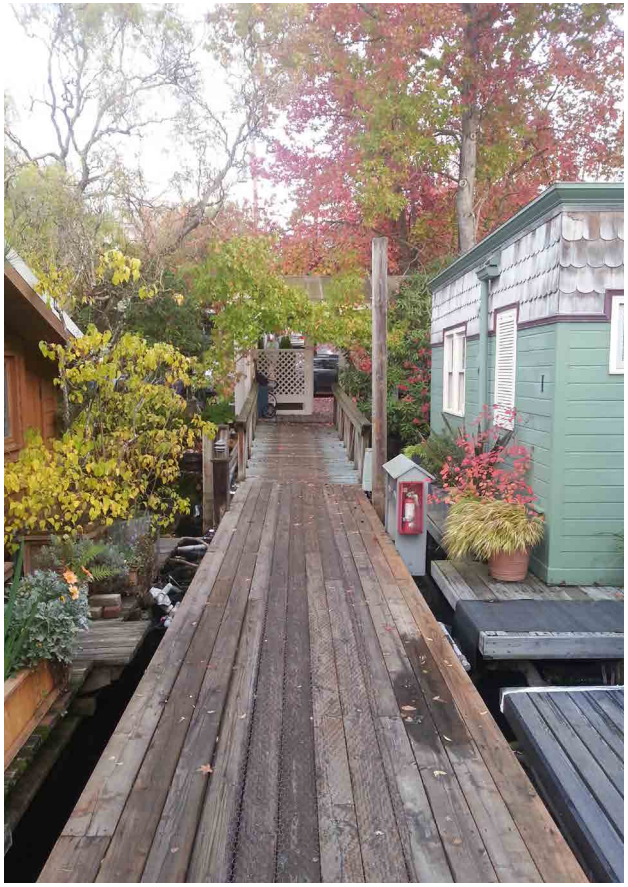


Figure 30

Private, Semi-Private and Public Spaces:

Floating homes engage each other in a high-density format, more so than typical (land-based) single family residences. Characterized by porches and decks level to pedestrian walkways, these features enhance connection between occupants and their neighbors. This floating community is composed of a 5 foot wide walking path, a narrow “alley” of circulation which contributes to a sense of place at a human scale.

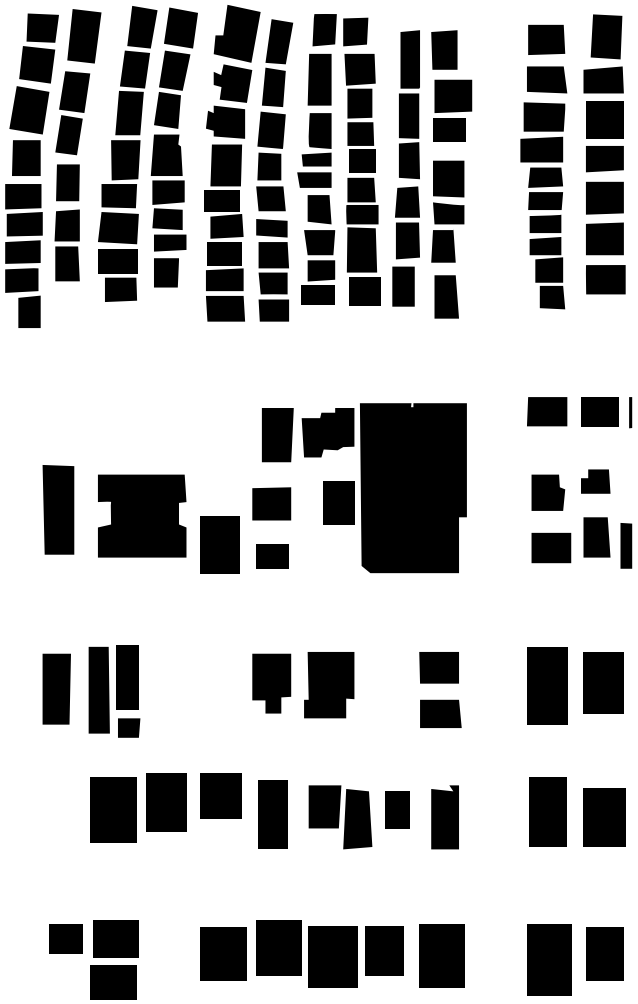


Figure 31

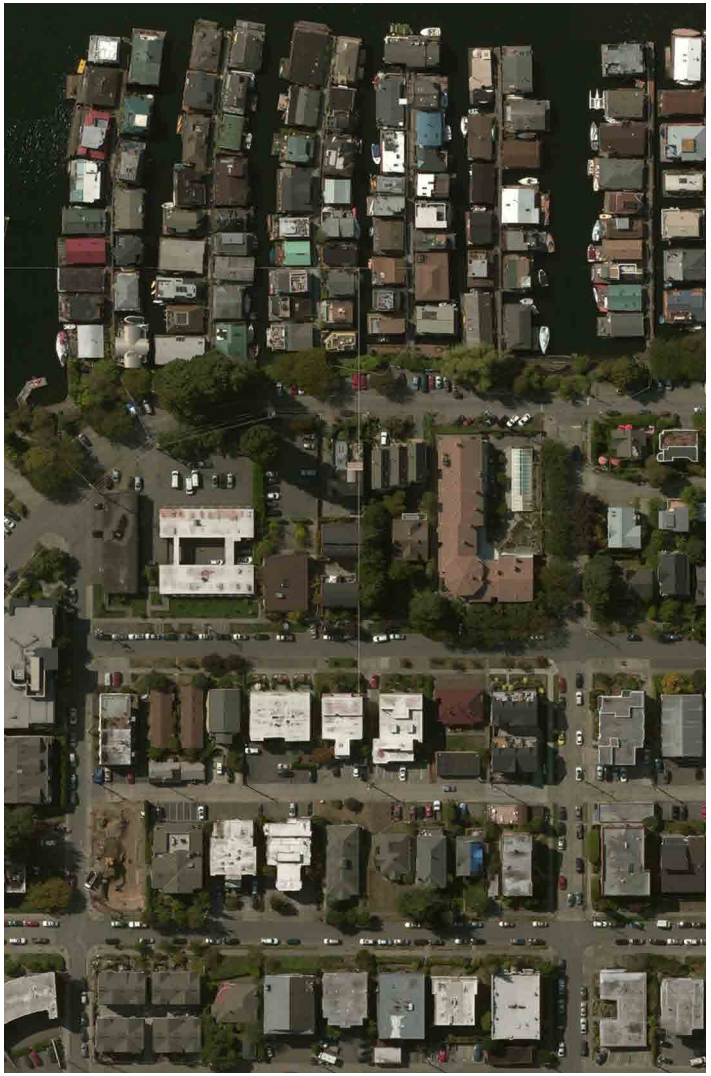


Figure 32

Urban density of a floating community in Easklake compared to an upland neighborhood. A high-density which contributes to a tight-knit urban quality, and a human scale sense of space.

Figure 33

Figure 34

Figure 35

Part 4: Precedent Studies

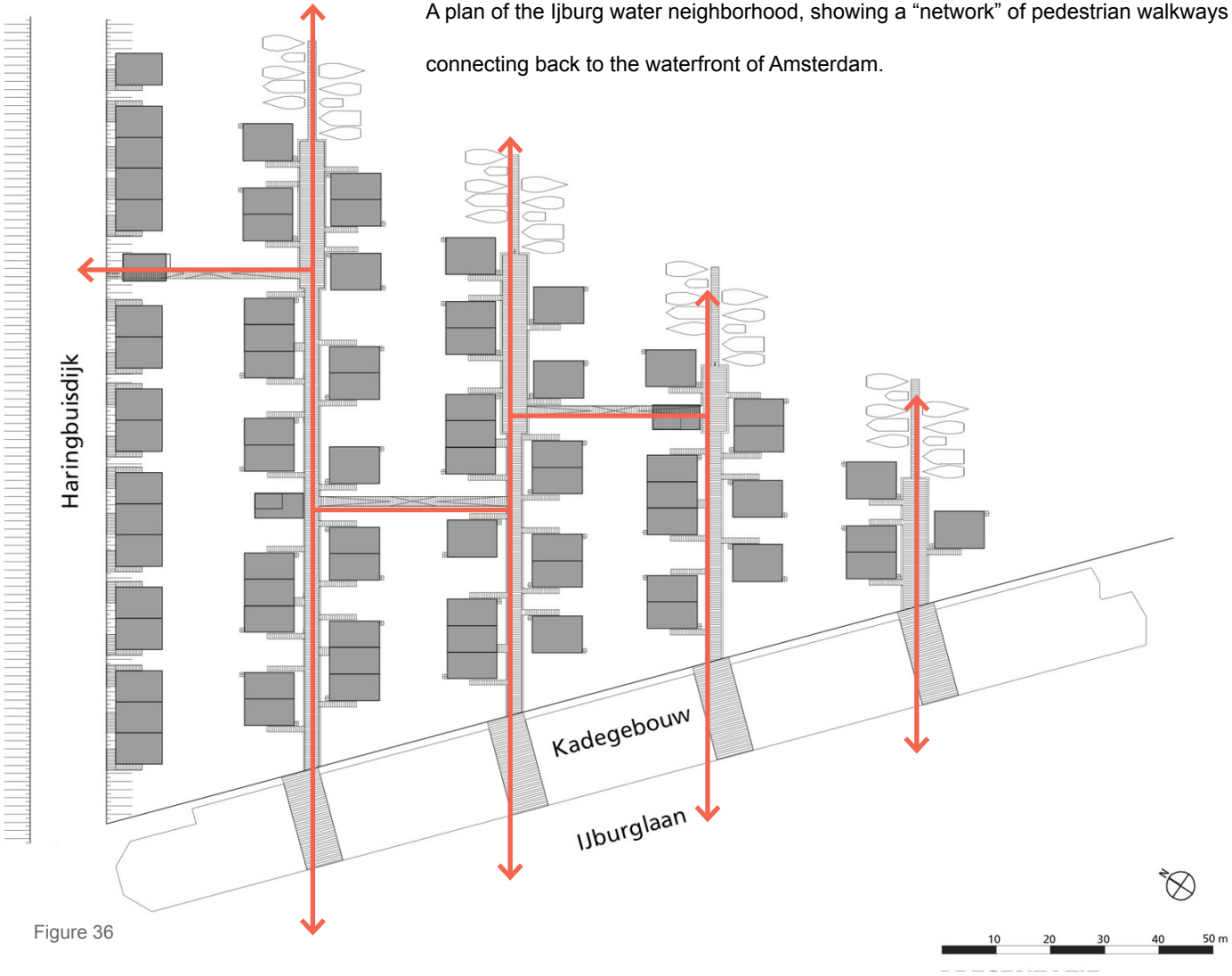
Case Study: Floating Houses in IJburg:

Located in Amsterdam, this floating home community was built as a solution to Holland's modern housing needs. As the city has expanded outwards, floating homes were implemented in the IJburg neighborhood. Marlies Rohmer Architects designed this floating community called Waterbuurt or "Water Quarter", for more than 1,000 floating home residents, Waterbuurt responds to two of Amsterdam's most pressing issues:

The Housing shortage and sea level rise. Development of water around Amsterdam affords more housing without development of land, and living on the water makes for efficient utilization of space, as sea level rise begins to claim more land.

The IJburg community design relies a network of pedestrian docks to engage the waterfront and streets beyond. Rather than creating an infrastructure for a single-use, this community becomes a part of the overall city, sharing the docks with pleasure boats and leaving open spaces for pedestrian water access.[1]

1 "Floating Houses in IJburg / Architectenbureau Marlies Rohmer." ArchDaily. Http://www.archdaily.com/, 19 Mar. 2011. Web. 18 Dec. 2015. <http://www.archdaily.com/



A plan of the Ijburg water neighborhood, showing a “network” of pedestrian walkways connecting back to the waterfront of Amsterdam.

Figure 36

Figure 37: Glasgow Floating Village

Figure 38: Buoyant Starts.

Figure 39: Buoyant Starts.

Baca Architects and ZM Architecture, Floating Village for Glasgow:

This floating development is placed along a former industrial hub, and is part of a larger waterfront redevelopment in the city of Glasgow. Similar to the Ijburg neighborhood, this urban plan proposes a variety of programs, and includes a public marina, hotel and a cafe and theater. While the floating structures strongly stand out, this community embeds itself in the urban context, adding functionality to the post-industrial landscape.[1]

Baca Architects Buoyant Starts Urban Housing Concept:

A winning entries for London's New Ideas for Housing competition, this project proposing the floating home as a means of increasing urban housing. Baca architects utilized London's post-industrial waterways and canals,150 hectares of "blue-field" water, and aims to add an ambitious 7,500 units. Most notable about these homes are their connection to the public edge, suggesting a social interaction with existing pedestrian paths and a river-walk. The buildings don't isolate themselves away from the city, but embed themselves into the urban fabric.[2]

Precedent Conclusions:

The most common trend among all these precedents, are their engagement with public realm and the greater city-scape. Not creating an isolated offshore community but nesting into water spaces with respect to adjacent urban conditions, building a relationship between land and water urbanism.

Through the analysis of these projects, this thesis seeks to learn

1 "World's "First Floating Village" Unveiled by Baca Architects and ZM Architecture Design for Glasgow." Inhabitat Sustainable Design Innovation Eco Architecture Green Building. N.p., n.d. Web. 18 Dec. 2015

2 "Baca Designs Floating Housing to Resolve London Housing Crisis." Dezeen Baca Architects Proposes Prefabricated Amphibious Housing for Londons Canals Comments. Http://www.dezeen.com, 18 Sept. 2015. Web. 18 Dec. 2015. <http://www.dezeen.com/2015/09/18/

Methodology

Figure 40:

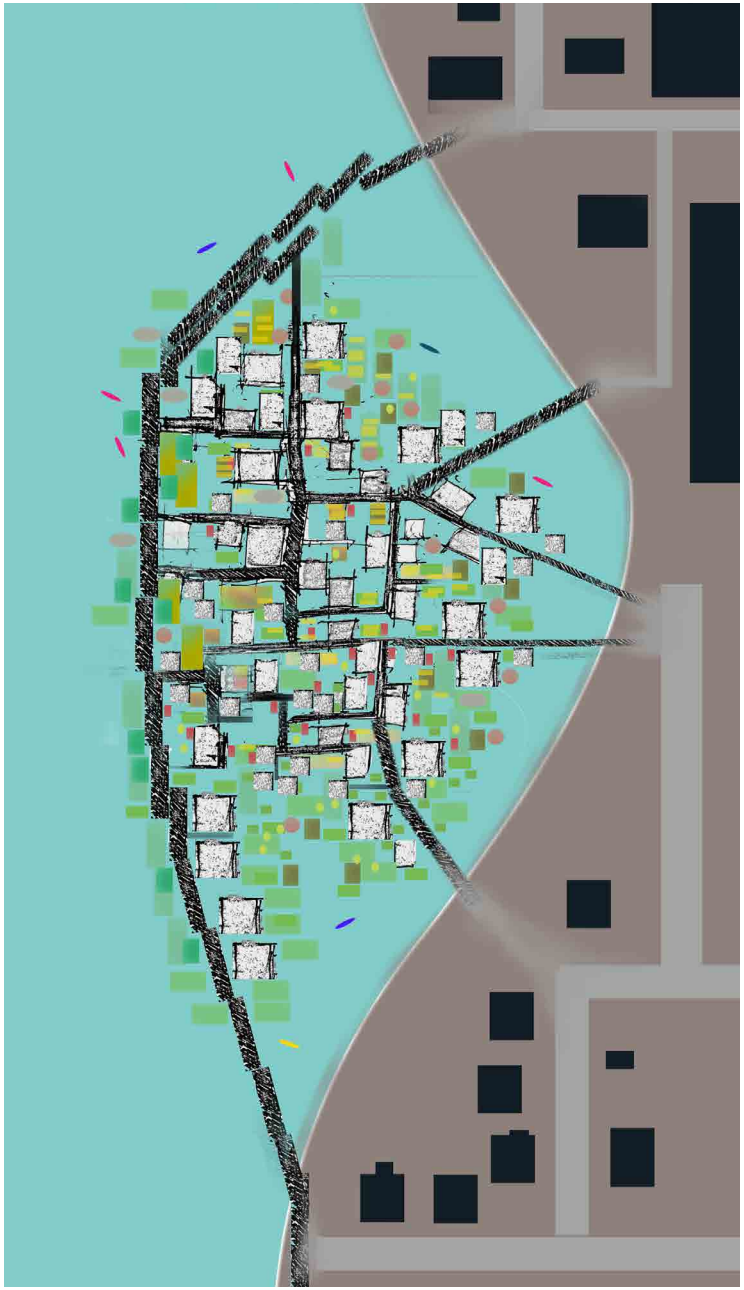
Part 5: A New Water Urbanism

Conceptual Position:

Today Seattle's floating home communities are regarded as a "non-preferred use". Seattle's Shoreline Master Program, the agency regulating shoreline use, states that:

"Existing floating home communities represent an important cultural resource because of their historic role in providing affordable housing for Seattle's working class and their unique contribution to Seattle's maritime culture. Existing communities should be allowed to remain; however, new houseboats should be prohibited since over water residences are not a preferred use of Seattle's shorelines."

This thesis asks: could floating communities become a preferred use? The author is optimistic, that through appropriate planning and design consideration, negative attributes that discourage floating community growth could be broken down. Transforming the term "floating community" to encompass more than a single-use urbanism, Instead becoming an extension of the public right away, a water urbanism that integrates: the existing floating communities, surrounding neighborhoods, and water environments.



Figures 41: Lily pad urbanism model, a network of public and private urbanity.

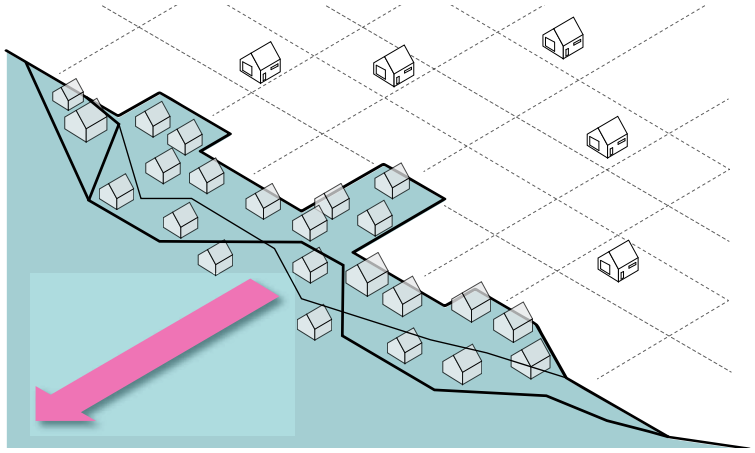


Figure 42: Extending the edge condition, floating community and larger city fabric co-exist in a “soft edged” water urbanism.

Floating Community as A New Public Edge:

A new design for floating communities can only be successful to the extent that it provides inclusive shoreline access for neighborhood as a whole. This is achieved through the creation of a new public edge.

The new public edge gives floating home communities a public realm by establishing a network of public docks which culminate at a new shoreline edge. Citizens move through a porous network of floating homes and docks, arriving at an edge of hierarchal importance; a public realm at the front of a floating community, and at the edge of the greater city. This design paradigm seeks to establish an extension of the urban landscape, fusing water bodies and urban realms together, and providing better visual and physical access to Seattle’s water bodies. It envisions a profound sense of connection and interaction with floating home communities, sharing the edge and creating social interactions of water-based residents and the general public alike.

Democratic Ownership:

Seattle's Shoreline Master Program lists public access as one of its core goals, and requires provisions to ensure that new development maintains public access features. This new model of floating community is enhanced by a sense of shared space. While there is an inclusion of both private homes and public networks, the urbanity should embody a sense of openness. This is achieved through wider dock spaces and buffer zones between floating homes and pedestrian pathways. Varied intensities of public and private space occur throughout, facilitated by a variety of dock infrastructure and dock arrangements, including: courtyard dock/home arrangements, bridges connecting larger public nodes, and large clusters of docks. Floating residents and the general public are given a sense of shared ownership; this design strategy encourages a programmatic diversity of spaces for each user.

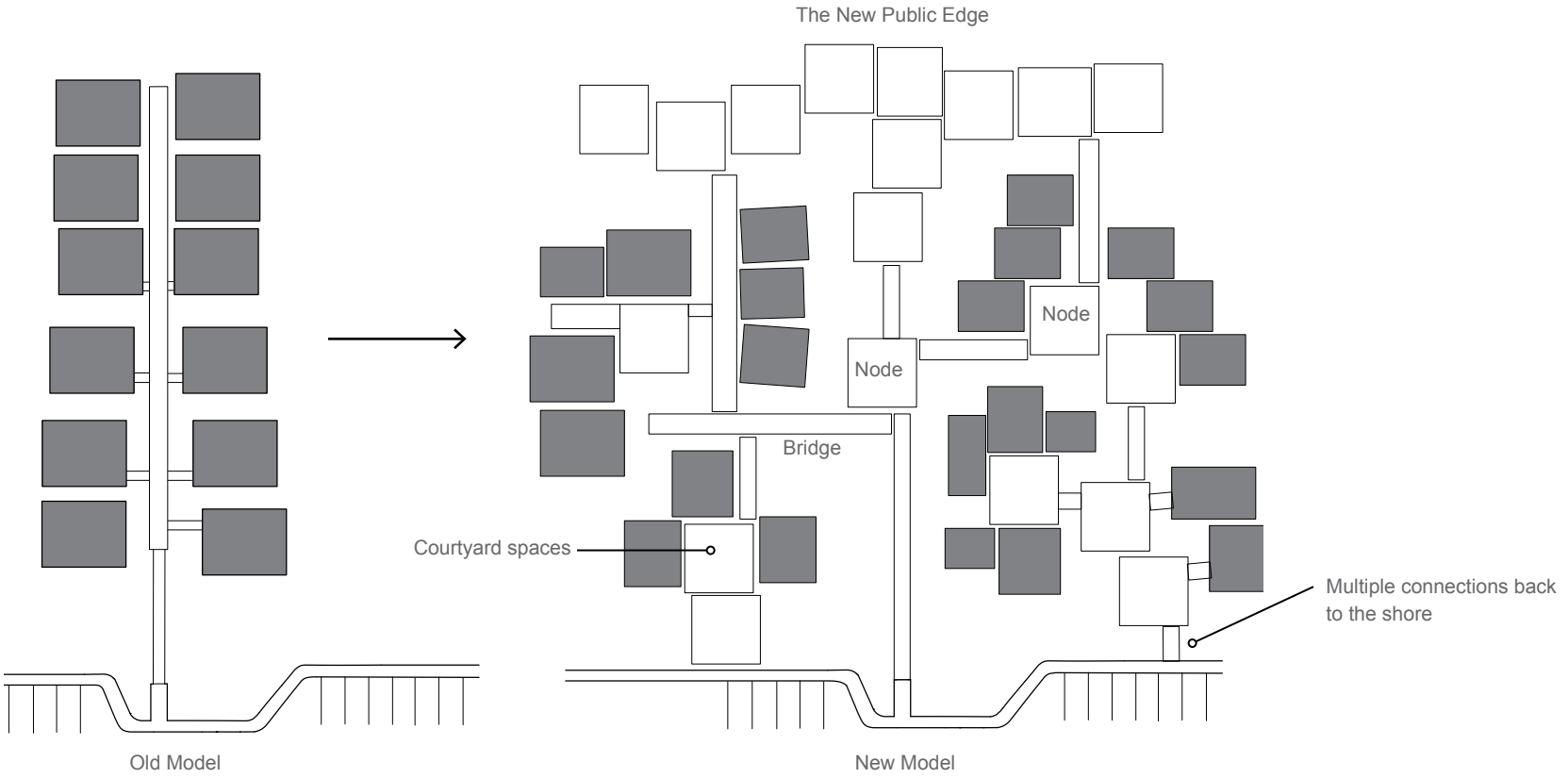


Figure 43: A publicly accessible model for floating communities.

Site Introduction

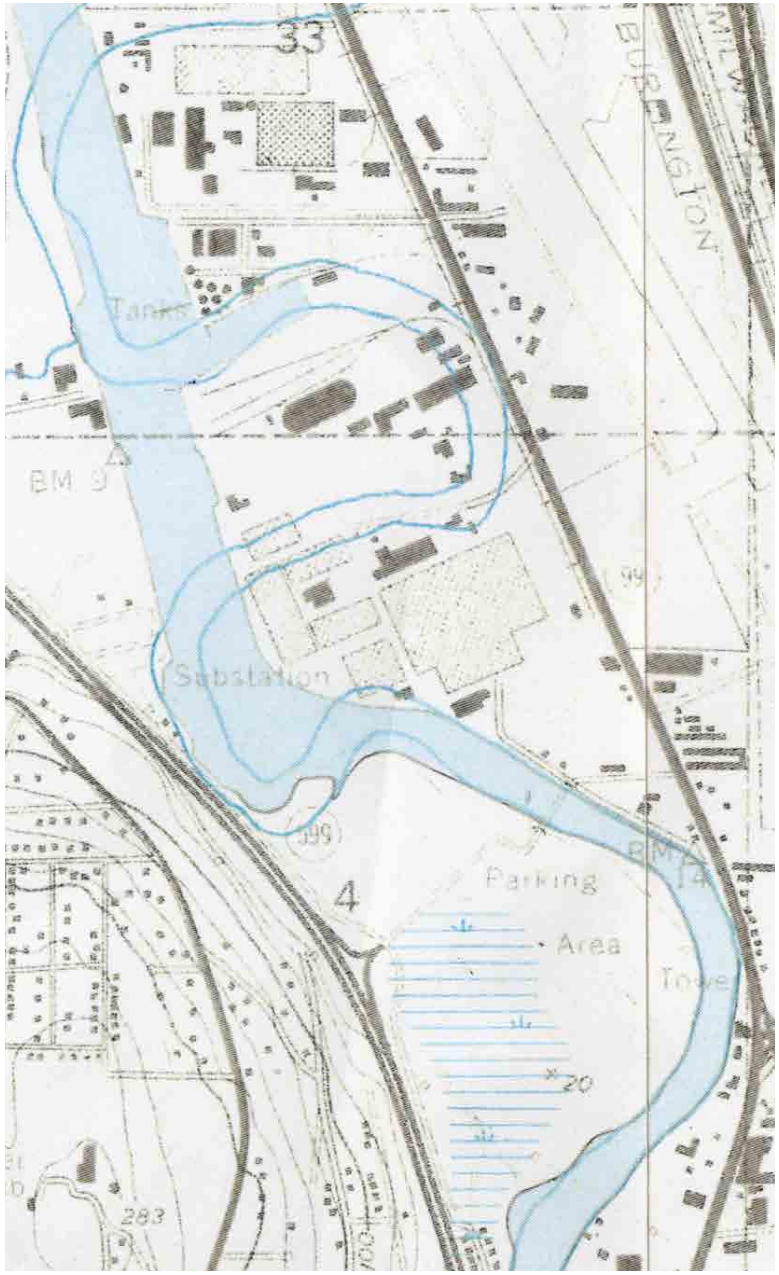


Figure 44: Map of Duwamish River, layering both original location and the current channel.

Part 6: Public Disconnection From Water and Green Space

The following design proposes a new floating community along the Duwamish River in the South Park neighborhood. Currently, South Park is disconnected from the waters edge after years of industrialization. Municipalities and residents recognize this issue and are currently advocating for a reconnection to the river, proposing a river-walk in conjuncture with street ends (public right of way that terminates at the waters edge). This design intends to integrate a new floating urbanism as part of the neighborhood, adding public access to the river environment, while adding floating homes to the neighborhood.

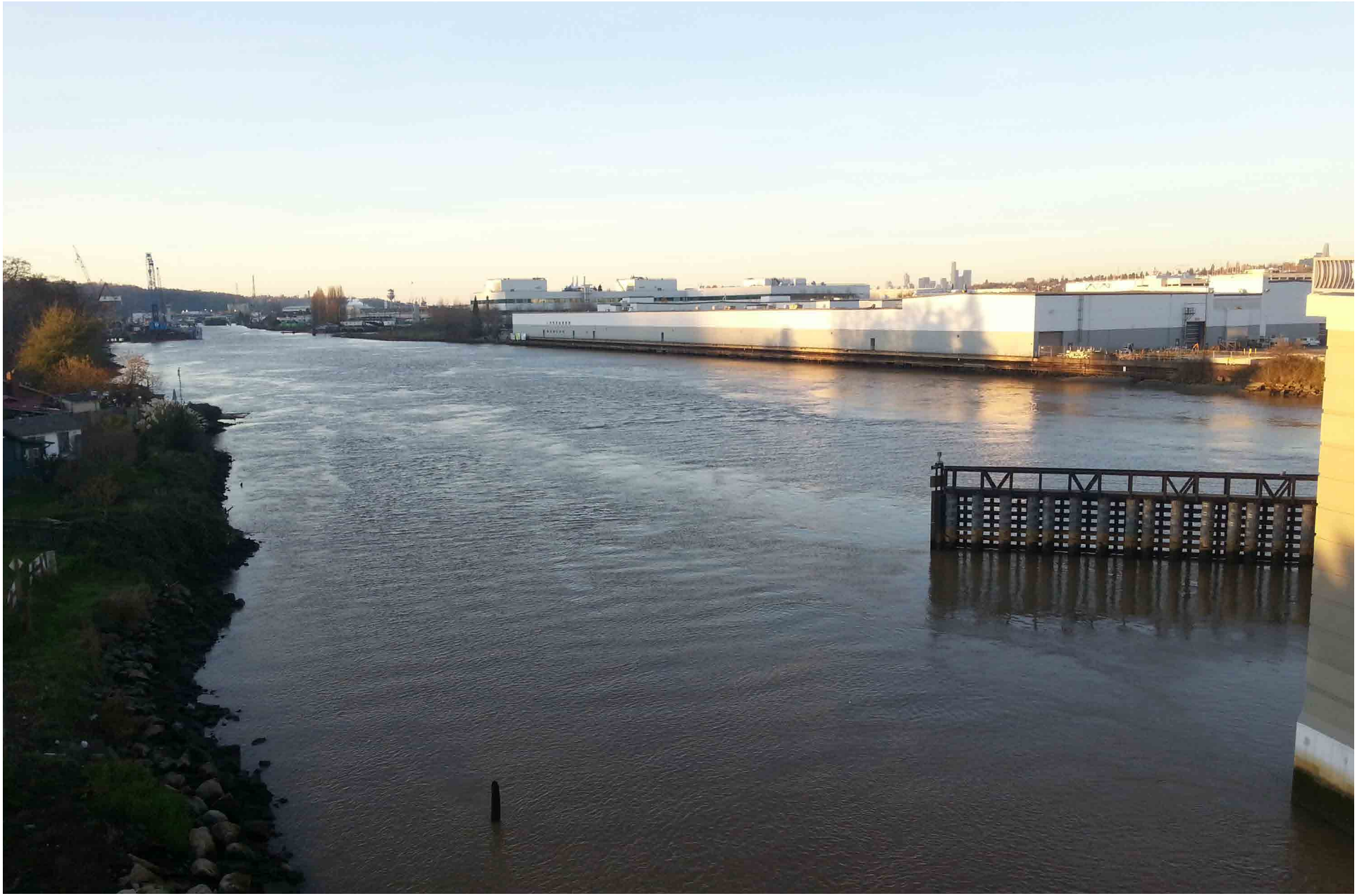


Figure 45: Duwamish River in the South Park neighborhood

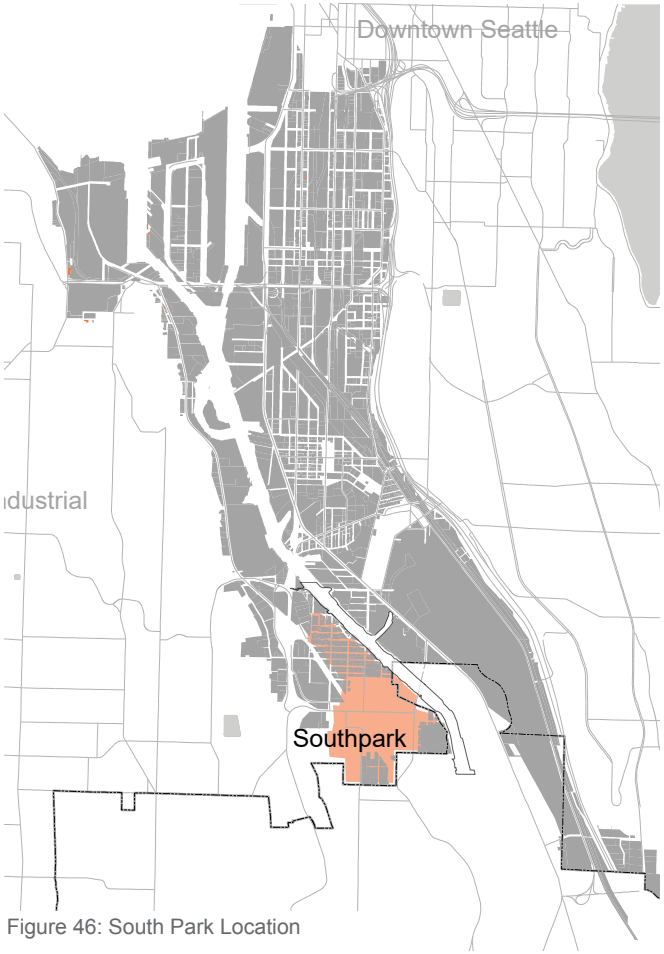


Figure 46: South Park Location

The Duwamish River and South Park Community:

The Duwamish river is a 12 mile long waterway that is part of the lower part of the green river terminating in the heart of Seattle. In the past century it has been radically altered by industrial growth, and is today a listed Superfund site under the Comprehensive Environmental Response under Compensation and Liability Act (CERCLA).

South Park is located at the end of an industrial zone, a neighborhood mixed with both residential and industrial uses. Unfortunately many of these industries are located on the river edge, effectively cutting off the neighborhood from the Duwamish. These buildings create “forgotten edges”, shoreline defined by commercial buildings, factories and heavy industry. Together they form an aggressive urban wall that stands in stark juxtaposition to the water.[1]

1South Park Green Space Vision Plan. Rep. Seattleparksfoundation, June-July 2014. Web. 10 Oct. 2015. <https://seattleparksfoundation.org/2014-pages/step-up/south-park-green-spaces.

Figure 47: Duwamish River in the South Park neighborhood

Neighborhood Disconnection:

Non-industrial use is held back from the Duwamish edge; homes and downtown South Park are cut off from experiencing the water. This figure -ground map highlights this disconnect from the river. Industrial buildings are red, and residential buildings are black.

Figure 48: Industrial and residential use diagram

Figure 49: Industrial shoreline environment of the Duwamish.

Today, the South Park neighborhood is in greater need of public space than any other neighborhood in Seattle. The turbulent history of social, environmental, and industrial history has made it one of the most undeserved populations, in respect to public parkland, green space, and environmental justice.

Historically, this was not always the case. Before industrialization and straightening of the meandering river channel, the community supported tribal settlements and subsistence agriculture. The Duwamish basin provided healthy soils for faming, which attracted early settlers for use as apple orchards and greenhouses. However, as Seattle experienced growth, the Duwamish valley became increasingly urbanized.[1] Over time the meandering river was straightened to it current form and largely armored at the shoreline to better serve industrial uses. These changes have come at a cost for the South Park neighborhood. Vacant shipyards and airplane factories have left a toxic legacy on the landscape; many of these site are so polluted they have been targeted as Superfund sites by the Environmental Protection Agency under CERCLA. Industrial activities have polluted the air, as well as water and sediments, endangering people, fish and wild life. South Park residents have a life expectancy of less than eight years than the average resident in King County. Trucking and other forms of freight transport have contributed to health risks, and have also thwarted neighborhood attempts to create safe biking and walking infrastructure.[1]

After years of industrialization, a dissidence of open public space has occurred, prompting community action for better parks and green space. Public green space is now a top priority for new public projects.

1 South Park Green Space Vision Plan. Rep. Seattleparksfoundation, June-July 2014. Web. 10 Oct. 2015. <https://seattleparksfoundation.org/2014-pages/step-up/south-park-green-spaces.

Part 7: Street Ends and Water Access

Green space and Shoreline Connection:

South Park has embraced these concerns and is organizing a 5 year urban strategy called The Green Space Vision Plan, which aims to create healthier public spaces and improve air, water, and soil quality. The plans propose the creation of new connected public spaces in South Park, including park trails, green ways, sidewalks, and recreation spaces.

Street Ends:

While much of the Duwamish is private industrial land, there are seven points of public water access. These points or access are shoreline street ends, and are public right of way where any street meets the shoreline. However, many are underdeveloped with poor site conditions including litter, dangerously steep banks, shoddy rip-rap, and overgrown vegetation. Private encroachment has also rendered many of these spaces unavailable for public use.

Figure 50: Rose Street ending at the Duwamish river in South

Figure 51.

Green Space and Street End Map:

The Green Space Vision Plan proposes a connection between street ends, green streets, and existing parks to form a “Green Way Loop” in South Park.

Figure 52:

Proposed South Park River Walk:

Under the South Park Green Space Vision Plan, the streets along the river edge of the green way are a proposed “river walk”. The plan proposes a connection between eight street ends, and enhancement of existing street end conditions. The plan allocates new programmatic features in the landscape, including: habitat restoration, cultural history, environmental education, and improved signage. The goal is to create a better experience of the few points of public water-access.

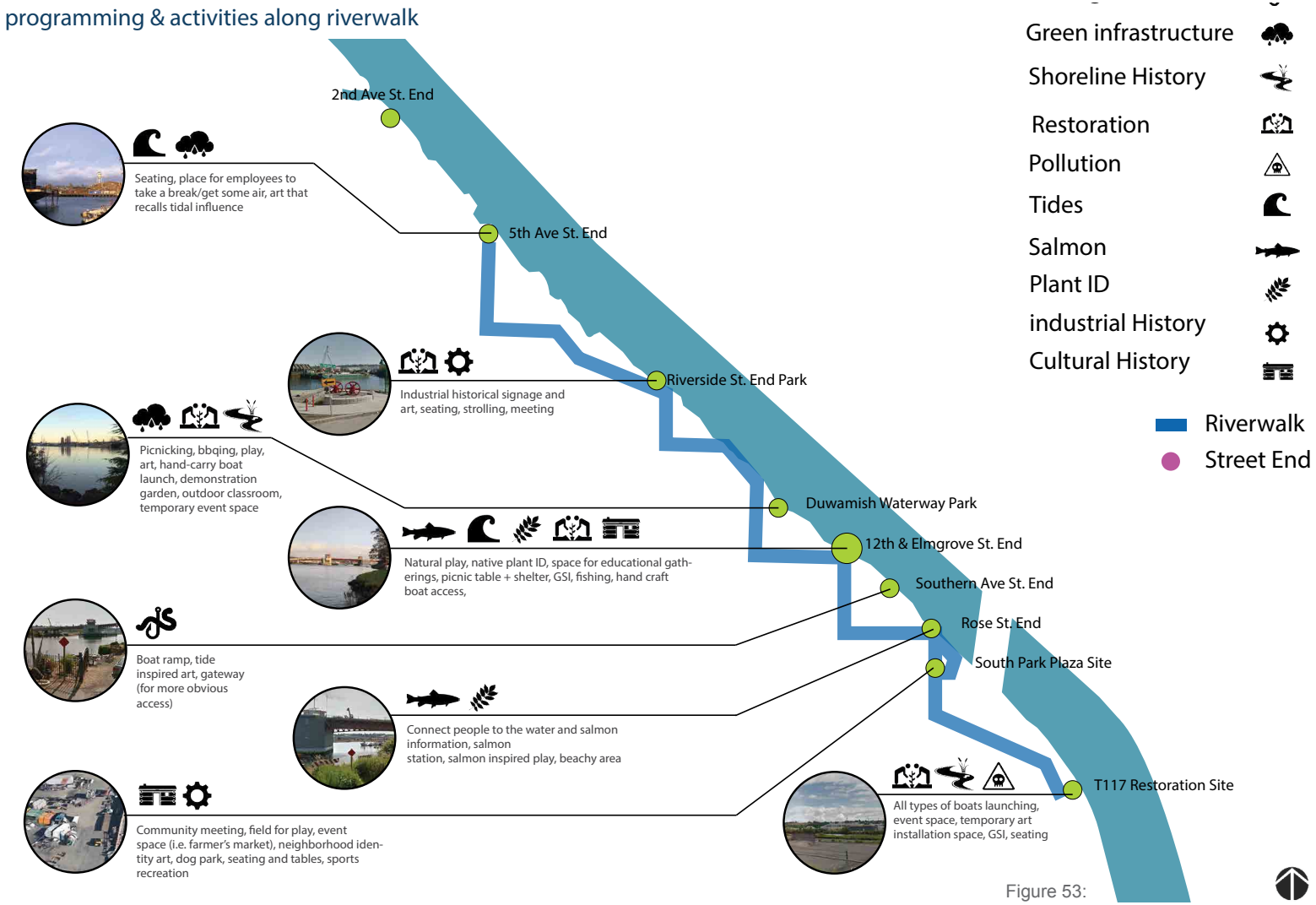


Figure 53:

Figure 54:

Part 8: Master Plan

Connecting Back to the Neighborhood:

A new floating community will incorporate South Park's plans for urban improvement. Building upon the Green Way Loop, this project proposes connecting back to the land using the street ends, and maximizing the function of these spaces as a means of public water access. Coupled with a desire for more open public space, the new floating community adds urban housing while giving South Park a new public edge.

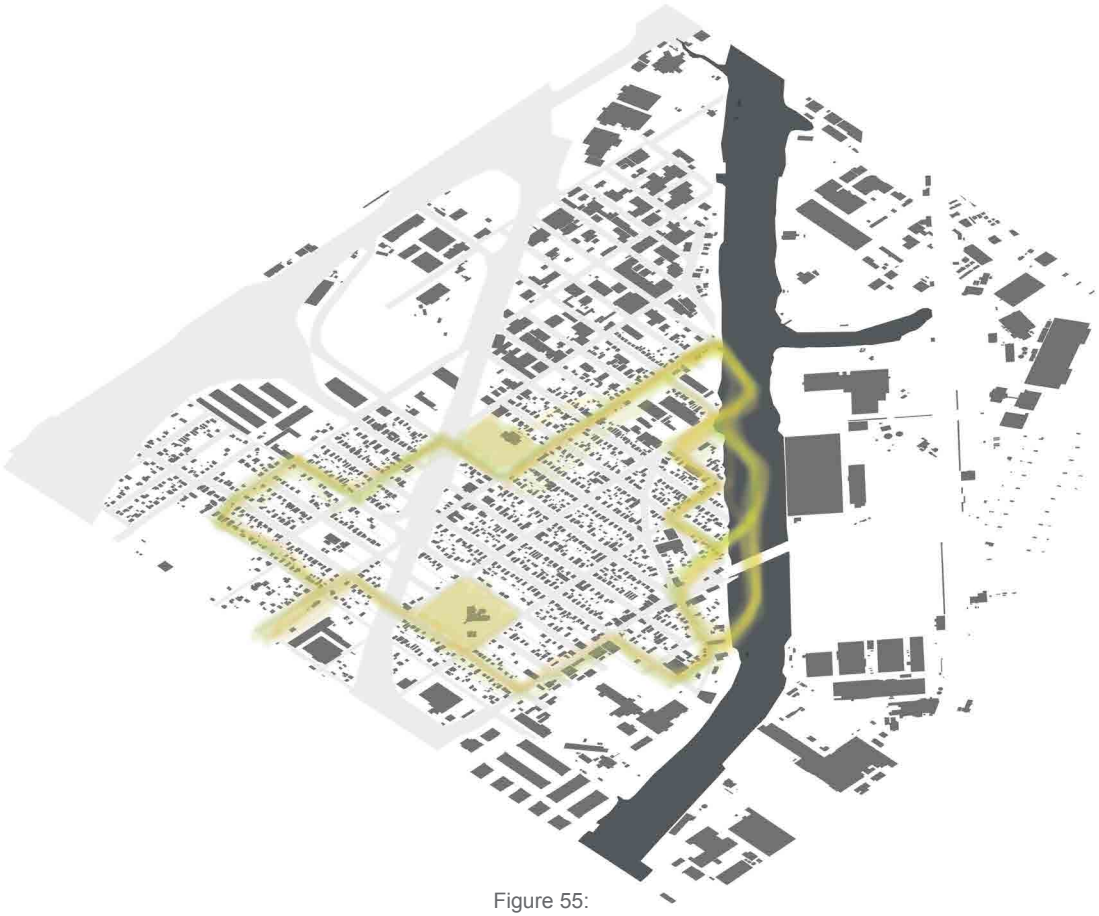


Figure 55:

Figure 56:

Creating a Master Plan:

Public access is achieved through a network of pedestrian docks, which create porous relationships between the floating homes and culminate in a public water edge. This proposed master plan connects street ends together, extending the proposed river walk to further enhance water access. The design utilizes forgotten edges and street ends, linking floating urbanism between the existing public access, linking both land and water urbanism. The plan respects existing water dependent uses, such as the duwamish waterway park, and a scrap metal yard, and adds both floating homes and new shoreline for the public.

Part 9: Floating Community at 10th Ave South

Figure 57:

Using the Forgotten Edges:

This project highlights a portion of the master plan, and capitalizes on empty water space; Positioning itself in defiance of this barricaded industrial edge, and makes a new public realm. However while the edge is extended, water access is not limited to this edge space. Instead there is a porosity of open water, enhancing a inclusive relationship with water for both residents and the public alike. Furthermore the community intersects with the Duwamish Waterway park, connecting with and enhancing existing public infrastructure.

Placing itself next to the scrap metal yard, the project co-exists within neighborhood industries. Reading the section we observe how the project inserts itself into the “forgotten edges”, and adds spaces that would other-wise be rendered inaccessible. However the design is respectful of shoreline industry, while occupying this “dead” space, it dose not hinder ships and barges on the navigation channel.

Section A

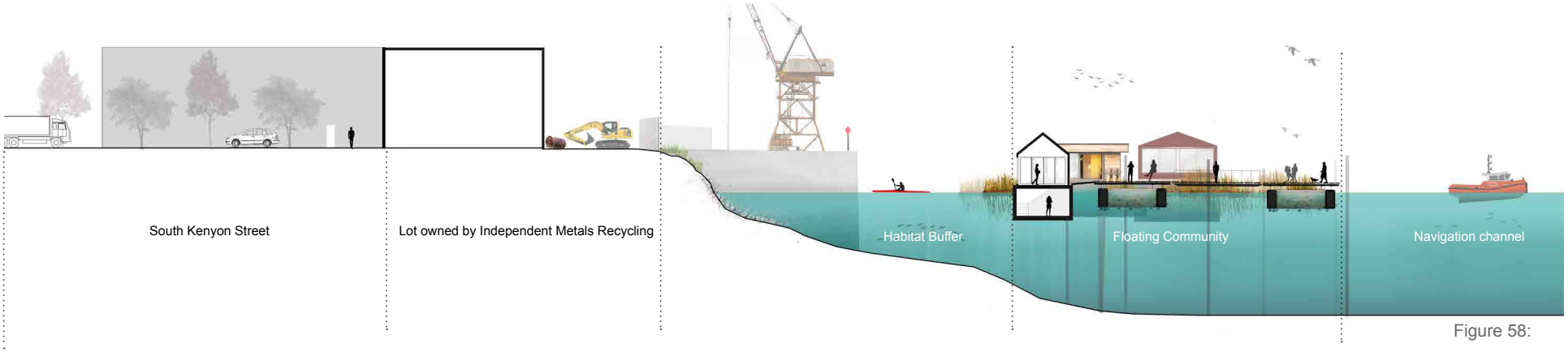


Figure 58:

Becoming a Part of the Shoreline Landscape:

Unlike traditional floating homes, this community becomes a landscape across the waters, becoming a fusion of both the urban and natural environment. In this proposal floating homes and docks are used for remediation of the duwamish, this is achieved through the implementation of floating wetlands. These floating Eco-systems provides the river with much needed habitat and also “soften” the hard edges of floating urbanism. The wetlands break up and buffer the floating homes providing a sense of separation between public and private realms, this design strategy is important for creating a sense of pace that is inclusive to both home owners and the public.

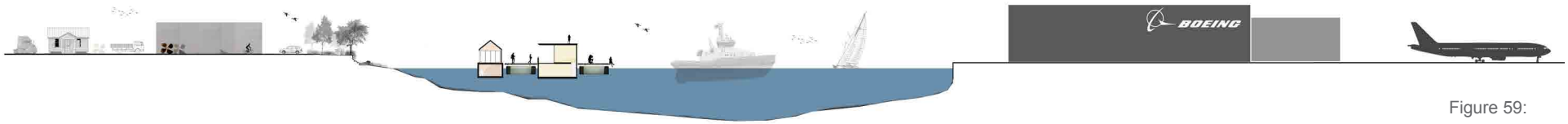


Figure 59:

Section A: close up view

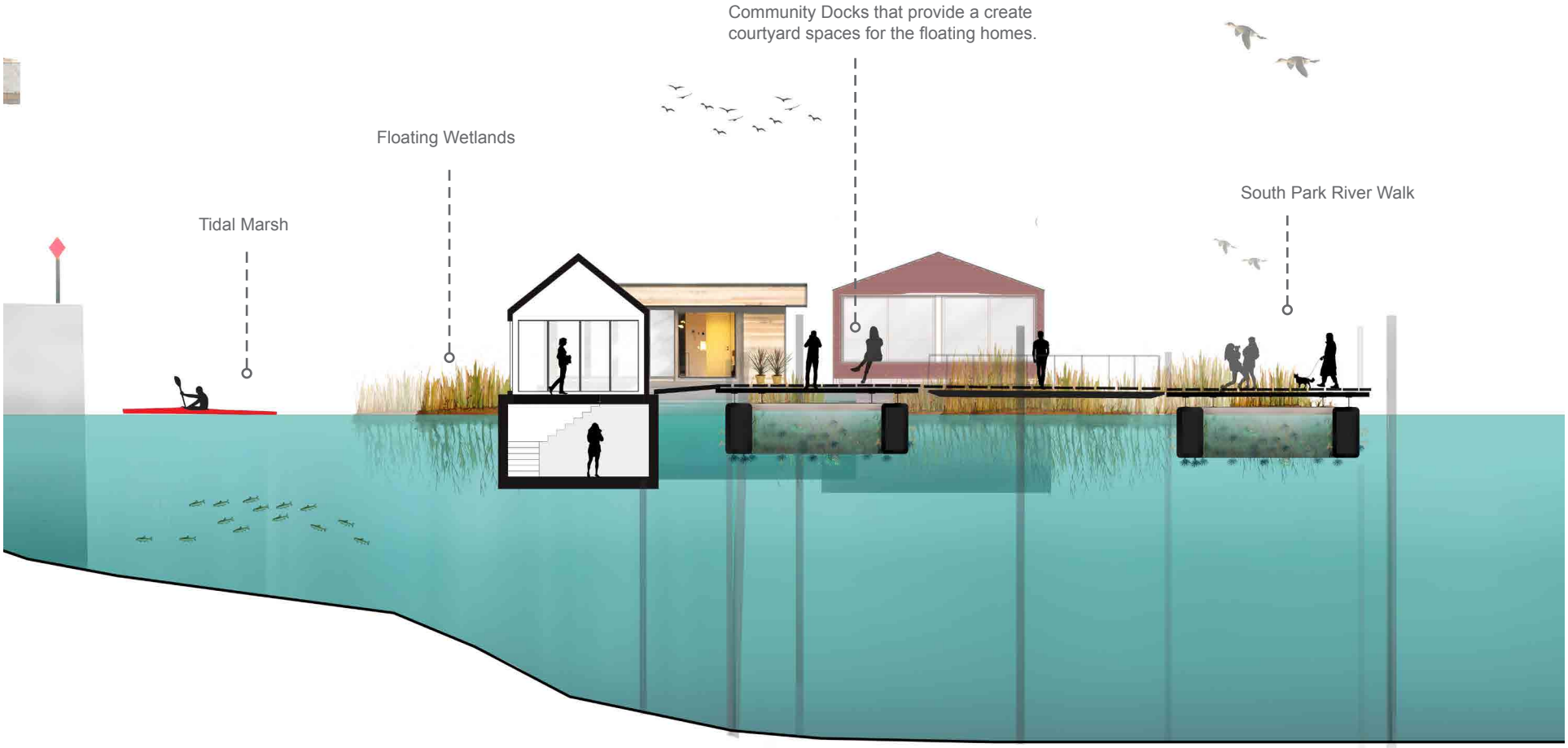


Figure 60:

Section B

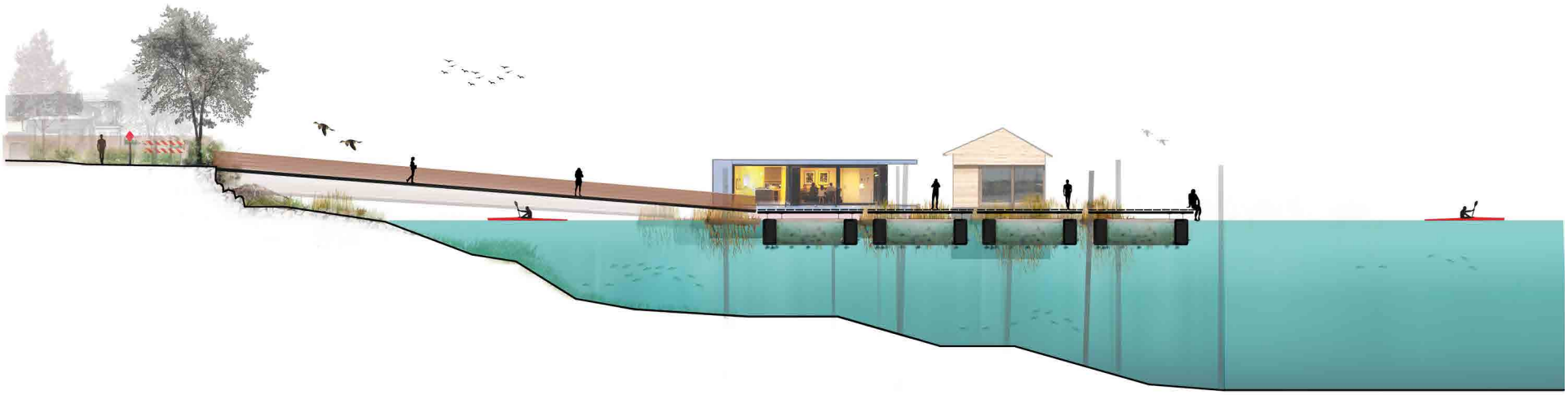


Figure 61:

The street-ends are used as an entry to the floating community, acting as portals between land and water environments. Pedestrian ramps, extend the right-of-way and bridge out into the floating neighborhood. Use of a bridge allows for a habitat buffer to occur between the floating community and the Duwamish shoreline. Placing the floating community offshore of the existing shoreline allows for the creation of new coves, and restored beach. The inclusion of ramps also maximize accessibility for all users. Between the 10th Avenue community and the beach, a habitat buffer is created; this tidal marsh protects Duwamish the sea life, such as salmon and eel grass. Unlike the current precedent of floating communities, this “buffer” zone encourages the natural shoreline to thrive uninterrupted by floating homes and docks. While respecting the Duwamish ecosystem, these spaces also create human habitat, and allow visual and physical connection back to the beach. At this particular site, the public is able to experience an edge of the Duwamish blocked by heavy industrial use, which in its current state can only be viewed or experienced via the water.

Figure 62.

The pedestrian bridges are designed to be wide and welcoming, acting as a public space unto themselves. From this bridge view-point, people are able to have visual connection with the water, leading them to the river walk.

This design moves towards a multi-use configuration, the new floating community becomes a network of various programs and activities; places for both public and private use that include both the human and natural world. This network is manifested as floating docks and bridges which create nodes and connectors between spaces, and overall contribute to a diverse range of urban spaces for floating homes and spaces for the public water access. The homes cluster around some of these “nodes” acting as small courtyard spaces diverging off of larger public realms. Public areas are assembled from large clusters of docks, these create open spaces with greater surface area, and are more appropriate for areas of public use.

This entire community is made from a floating dock infrastructure, and these floating docks are composed of a 20’x20’ floating squares, referred to as a “lily pad.” Each lily pad contains the needed infrastructure for supporting both homes and pedestrian use, including: electrical, water, sewer and pathway lighting.

These lily pad docks can used in a variety of plan arrangements. If a new program demands change, or if the population expands or declines, the lily pad structures can be floated into new network configurations, created changing and dynamic urbanism over time.

Figure 63:

Figure 64.

Figure 65: Render of Coffee shop and boat launching dock.

At the South end of the community is a space called “the cove,” a public space for launching small water crafts such as kayaks and rowing-shells. The community of South Park has expressed a need for a small boat launching sites; steep site conditions at street ends currently makes this activity difficult. The cove functions as the most intensely public community program. It also includes a small coffee kiosk, activating the space and attracting a variety of users from the whole neighborhood. The cove is deliberately placed in proximity to the Duwamish Water Way Park, seeking to enhance an existing adjacent public space.

Figure 66: Render of river walk at dusk.

South Park residents can experience the River Walk as an public edge uninterrupted by upland or floating homes, which are strategically held back from the walkway. This new public edge moves users out over the water, and provides panoramic views of the river. This buffer also contains floating wetlands, which provide habitat for birds and fish as well as and much-needed water treatment benefits. The wetlands also enhance the sense of spatial separation between the river walk and floating homes, creating a small buffer between the public realm and the private dwelling.

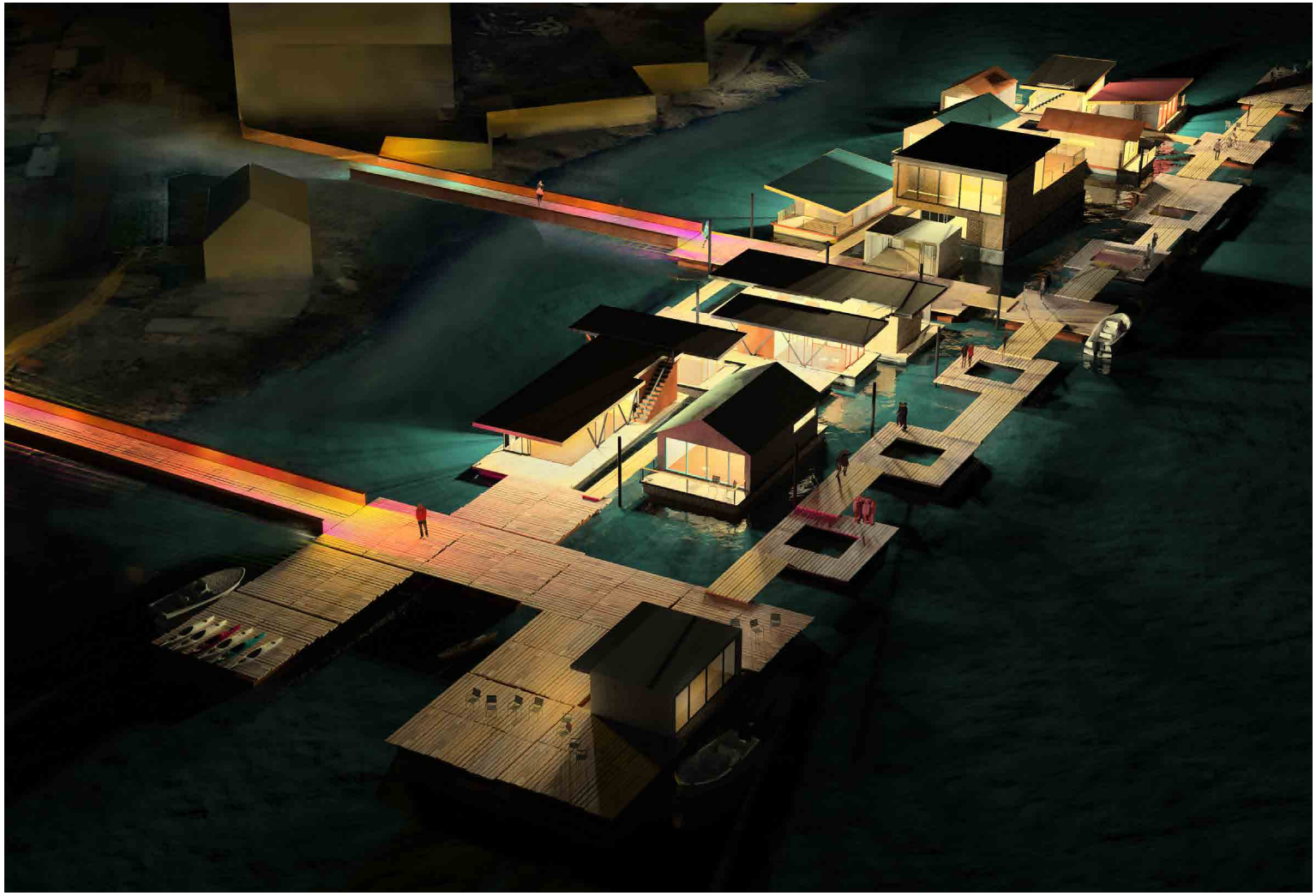


Figure 67: Render of community at night

Conclusion:

In completing this thesis, I have learned the rich history of Seattle's existing communities. Although it is easy to dismiss these spaces as elitist and perhaps even frivolous, there are many positive social qualities of the communities that make them welcoming and supportive to the people who live there. I have spent time in floating home communities in the Portage Bay and Eastlake neighborhoods, and talked to people with a collective wealth of knowledge who have contributed greatly to my research. I have realized that while this historic architecture has had a turbulent past, there is something to be learned from its people, and its important role in Seattle's urban history.

There are many design approaches for new floating communities. However, there is one fundamental design objective that should always be employed, which is to design for equitable use. Spatial and programmatic qualities should invite all types of people, and allow the place become something more than just houses. This whole thesis talks about floating homes, but what it's really about is connecting people to water in an urban context. It's less about the floating home as a building and more the infrastructure as a landscape that merges the aquatic and urban realms.

List of Figures

Figure 1: Watercolor sketch.
Figure 1A: Floating homes near Eastlake, 1960.
Figure 2: A water color sketch by the Author.
Figure 3: Floating homes in portage bay, 1938.
Figure 4: Schahn family on their floating cabin at Rainier-Beach, 1902.
Figure 5: Home near the University of Washington's Union Bay shoreline,1907.
Figure 6: Floating homes on Lake Union in 1963.
Figure 7: Floating homes on Lake Union, 1931.
Figure 8: This home on the Duwamish river in 1954 .
Figure 9: Rainier Beach floating homes, date unknown.
Figure 10: Floating homes on Lake Union in 1960.
Figure 11: Floating homes at Roanoke street,1953.
Figure 12: Urban issues diagram.
Figure 13: Private floating community in EastLake
Figure 14: Roanoke Reef present day.
Figure 15: Floating home no trespassing sign.
Figure 16: Private community sign.
Figure 17: Eastlake private community gate
Figure 18: No trespassing sign.
Figure 19: Gated community.
Figure 20: Gated community.
Figure 21: no trespassing sign.
Figure 22: Floating community, a social place.
Figure 23: An older wood dock in a Eastlake floating community.
Figure 24, top: Shared mailbox near a floating community dock.
Figure 25, bottom left: A community garden.
Figure 26, bottom right: A community storage shed.
Figure 27: A floating community entrance in Portage bay.
Figure 28: Dock.
Figure 29: private stoop.
Figure 30: Relationship between private and public space in floating communities.
Figure 31: Urban density diagram.
Figure 32: Eastlake Google Earth image.
Figure 33: IJburg floating neighborhood.
Figure 34: IJburg floating neighborhood.
Figure 35: IJburg floating neighborhood.
Figure 36: IJburg floating Neighborhood plan view.
Figure 37:Glasgow floating village.
Figure 38: Buoyant Starts floating housing.
Figure 39:Buoyant Starts floating housing.
Figure 40: Water color sketch by the author.
Figure 41: Lily pad urbanism model, a network of public and private urbanity.
Figure 42: Extending the edge condition.
Figure 43: A Publicly porous model for floating communities.
Figure 44: Map of Duwamish river, layering both original location and the current channel.
Figure 45: Duwamish river in the South Park neighborhood.
Figure 46: South Park location.
Figure 47: Duwamish river in the South Park neighborhood
Figure 48: Industrial and residential use diagram.
Figure 49: Industrial shoreline environment of the Duwamish.
Figure 50: Rose street in South Park.
Figure 51: Shoreline at a typical street end.
Figure 52: Proposed South Park green way.
Figure 53: Proposed street end and river walk program map.
Figure 54: Water color sketch by author.
Figure 55: Floating community urban connection.
Figure 56: Floating community master plan.
Figure 57: Floating community plan at 10th Ave and south Kenyon Street.
Figure 58: Floating community Section looking through the Duwamish River and scrap metal yard.
Figure 59: Section through floating community and larger urban fabric.
Figure 60: Section A , close up view.
Figure 61: Section of floating community cutting through street end.
Figure 62: Floating community render looking down pedestrian ramp.
Figure 63: Pathways between floating homes.
Figure 64: Courtyard spaces.
Figure 65: Render of coffee shop and boat launching dock.
Figure 66: Render of river walk at dusk.
Figure 67: Render of community at night.

Figure Credits

Figure 1: Seattle Municipal Archives Photograph Collection, Item No: 11726, Description: Houseboat with sailboat. Orig No:
Date: May 10, 2001 Department: DCLU Collection: Fleets and Facilities Department “Imagebank” Collection
Record Series 0207-01 Neg/Pos:

Figure 3: Seattle Municipal Archives Photograph Collection, Item No: 38728, Description: Houseboats [in Portage Bay] Orig No: 15479
Date: Nov 9, 1938, Collection: Engineering Department Photographic Negatives, Record Series 2613-07 Neg/Pos: N Location: 180

Figure 4: Seattle Municipal Archives Photograph Collection, Item No: 66254, Description: Schahn family. Rainier Beach. Orig No: Date: 1902, Collection: Erlyn Jensen Rainier Beach Collection
Record Series 9940-01 Neg/Pos: P Location: 1, Original format: Silver Gel Print.

Figure 5: http://pauldorpat.com/2010/09/26/seattle-now-then-union-bay-boathouse/

Figure 6: Seattle Municipal Archives Photograph Collection, Item No: 63791, Description: [Lake Union] North view from above outboard end of Lake Union Shipyard showing GSA area in lower right hand corner and present moorage and houseboat development from East Newton to Roanoke Street (Cadranell). Orig No:Date: Sep 1962

Figure 7: Seattle Municipal Archives Photograph Collection, Item No: 4939 Description: Aurora Bridge Under Construction, Orig No: 10107 Date: May 7, 1931 Collection: Engineering Department Photographic Negatives Record Series 2613-07, Neg/Pos: N

Figure 8: Seattle Municipal Archives Photograph Collection, Item No: 45984, Description: First South Bridge, Slum House Boats, Orig No: 18484, Date: Oct 4, 1954
Collection: Engineering Department Photographic Negatives Record Series 2613-07, Neg/Pos: N

Figure 9: Seattle Municipal Archives Photograph Collection, Item No: 66245, Description: Houseboats. Rainier Beach [Pritchard Island in background] Orig No: 7 Date: [No Date] Collection: Erlyn Jensen Rainier Beach Collection Record Series 9940-01

Figure 10: “Seattle Municipal Archives Photograph Collection.” . N.p.,n.d. Web. 30 May 2015. Item No: 63597 Description: Planning Photographs, Miscellaneous Streets [E. Lynn St. Sewer Right of Way.] Orig No: 63597 Date: Feb 11, 1960 Collection: Engineering Department Photographic Negatives.

Figure 11: “Seattle Municipal Archives Photograph Collection.” Seattle Municipal Archives Photograph Collection. N.p.,n.d. Web. 12 May 2015. Item No: 45984 Description: First South Bridge, Slum House Boats Orig No: 18484 Date: Oct 4, 1953 Collection: Engineering Department Photographic Negatives.

Figure 22: http://www.seattleafloat.com/the-seattle-floating-homes-association-floating-homes-tour-wrap-up/

Figure 32: https://www.google.com/maps/place/Google+Seattle/@47.6381966,-122.3284605,263m/data=!3m1!1e3!4m2!3m1!1s0x54901506e4e1c263:0x79576ab382d8ddaa!6m1!1e1

Figure 33: http://www.archdaily.com/120238/floating-houses-in-ijburg-architectenbureau-marlies-rohmer/5013ba9128ba0d3963000c58-floating-houses-in-ijburg-architectenbureau-marlies-rohmer-photo

Figure 34: http://www.archdaily.com/120238/floating-houses-in-ijburg-architectenbureau-marlies-rohmer/5013ba9928ba0d3963000c5a-floating-houses-in-ijburg-architectenbureau-marlies-rohmer-photo

Figure 35 http://www.archdaily.com/120238/floating-houses-in-ijburg-architectenbureau-marlies-rohmer/5013ba8e28ba0d3963000c57-floating-houses-in-ijburg-architectenbureau-marlies-rohmer-photo

Figure 36: http://www.archdaily.com/120238/floating-houses-in-ijburg-architectenbureau-marlies-rohmer/5013bac528ba0d3963000c67-floating-houses-in-ijburg-architectenbureau-marlies-rohmer-plan

Figure 37:http://inhabitat.com/baca-architects-and-zm-architecture-design-worlds-first-floating-village-for-glasgow/baca-architects-canting-basin-floating-village-4/

Figure 38: http://images.adsttc.com/media/images/561d/200a/e58e/ce94/b800/03c3/large_jpg/NLAHousing_BacaArchitects_BuoyantStarts_3.jpg?1444749285

Figure 39: http://images.adsttc.com/media/images/561d/2061/e58e/ce0d/5a00/03d7/large_jpg/NLAHousing_BacaArchitects_BuoyantStarts_5.jpg?1444749395

Figure 44: http://www.duwamishrevealed.com/wp-content/uploads/2014/08/old-new-duwamish-mapblue-crop.jpgFigure

Bibliography

Beatley, Timothy. Blue Urbanism: Exploring Connections between Cities and Oceans. London: Island-press, 2014. Print.

Droege, Peter. Floating Shelter. First ed. Cambridge Massachusetts: School of Architecture and Planning, MIT, 1978. Print . Page 80.

Gabor, Mark. Houseboats. First ed. Vol. 1. Books: Ballantine, 1979. Print.

Mendleson, Susan Lamarche. Living on the Water: Introducing Floating Homes as a New Housing Type to an Existing Waterfront Community. Seattle: U of Washington, 1991. Print.

“The Seattle Floating Homes Association (FHA) Is a Nonprofit Organization That Serves the Interests of the FHA Members and Its Surrounding Communities.” Seattle Floating Homes. N.p., n.d. Web. 18 Dec. 2015. <http://seattlefloatinghomes.org/>.