

Layers of Accumulation: Reusing a Contaminated Industrial  
Waterfront on Rock Bay, B.C.

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# ABSTRACT

In the process of reusing urban industrial waterfronts, large remediation efforts are almost always necessary because of the high content of toxic material produced through industrial processes. These post-industrial sites are often cleaned and sanitized to the point where they no longer serve as a record of previous use and thought.

These sites are filled with problems, but also possibilities. By retaining material forms of matter on the site, reinterpreting and reusing them, a clearer understanding of the site itself, its surrounding community and human engagement with the built and natural landscape is possible. This thesis proposes that an architectural intervention upon an existing post-industrial waterfront space can reveal the sites industrial and polluted past while creating a safe public amenity space.

Rock Bay in the city of Victoria is one of the most contaminated sites in B.C. because of its history of industrial uses, primarily a coal gasification plant. In intervening on the last of three stages of the site's remediation, and creating a public waterfront recreation center, the project can reveal the systems and processes that have drastically affected the site over time. The new recreation center and remediating park will allow people to once again engage with the water and highlight the site's industrial and contaminated past. Both the program and design will emphasize tensions between land and water, dirty and clean, and past and present use.

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# LAYERS OF ACCUMULATION

REUSING A CONTAMINATED INDUSTRIAL WATERFRONT ON ROCK BAY, B.C.





# TABLE OF CONTENTS

LIST OF FIGURES	9
INTRODUCTION	11
LITERATURE REVIEW	17
SITE ANALYSIS	35
DESIGN	53
CONCLUSION	89
BIBLIOGRAPHY	91
FIGURE CREDITS	93



# LIST OF FIGURES

1. 2014 Photo of Rock Bay
2. Map of Victoria, B.C.
3. Map of Victoria, B.C.'s inner harbor
4. "The Ethics of Dust" installation
5. Diagrams of Victoria's waterfront
6. Victoria's inner harbor
7. Ice skating on Rock Bay
8. McCarter Shake and Shingle Mill
9. Fresh Kills in New York City
10. Nanjido Trash Island in Seoul
11. Landschaftspark Duisburg Nord
12. Gas Works Park in Seattle
13. "The Ethics of Dust" installation
14. "The Ethics of Dust" installation
15. 1950s aerial of Rock Bay
16. Rock Bay's natural terrain
17. Early photo of Rock Bay
18. Historic watercolor map of Rock Bay
19. Site changes diagram
20. Capital Mill on Rock Bay
21. Pre-1900 Rock Bay bridge
22. Victoria Gas Co. on wood piers
23. Victoria Gas Co. c. 1940
24. National Electric Tramway and Light Co. Powerhouse
25. Victoria Brewing Co. building
26. Victoria Gas Co. brick building
27. 1902 map of tramlines
28. 1930s map of streetcar lines
29. Current National Electric Tramway and Light Co. Powerhouse
30. Current Victoria Gas Co. brick building
31. 1900 photo of Rock Bay
32. Current Rock Bay panorama
33. Abandoned barge on site
34. Shoreline with rocks and rip-rap
35. Natural/subnatural condition diagram
36. Rock Bay watershed
37. Rock Bay contamination map
38. Rock Bay clean-up stage 3
39. Aerial photo of site on Rock Bay
40. Powerhouse East Elevation
41. Powerhouse interior photo
42. Powerhouse interior photo
43. Program diagram
44. Remediation and recreation
45. Role reversal diagram
46. Site strategy - water flow
47. Rock Bay watershed
48. Flow of water on site
49. Flow of water in section
50. Proposed site plan
51. Shoreline condition
52. Shoreline condition plan
53. Gasometer foundation and wetland
54. Site plan - remediation
55. City and harbor circulation
56. Site plan - circulation
57. Site plan - program
58. Plaza
59. Site plan - plaza
60. Plant selections
61. Planting plan
62. Recreation site section
63. Remediation site section
64. Powerhouse construction and materials
65. Powerhouse - new insertions
66. Powerhouse ground floor plan
67. Powerhouse second floor plan
68. Composite ground floor plan
69. Powerhouse and pool section
70. Powerhouse section perspective
71. Linear lap pools
72. Linear lap pools
73. Sauna in smokestack
74. Mezzanine workout room
75. Kayakers and shoreline pools
76. 2014 photo of Rock Bay



Figure 1: Photo of Rock Bay, 2014

# INTRODUCTION

The waterfront is a place of transformation. Geomorphically, it is a transient territory between solid land and liquid water. As geographic boundaries, urban waterfronts were historically fluid margins between the city and nature, and industry and amenity. Reading the waterfront as a series of transient layers and accumulations, both physical and intangible, reveals new interpretations and opportunities for engagement with this liminal territory.

Since the mid-1970s, urban waterfronts have seen a major shift from underutilized industrial terrain to public places transformed into amenities by the introduction of activities associated with the urban lifestyle.<sup>1</sup> These transformations have appeared as both private and public spaces, but the majority seek to create new

identities for the cities in which they are located.<sup>2</sup> In dealing with their post-industrial waterfronts, some cities have gravitated toward “wiping the slate clean” and creating brand new spaces, demonstrating their ability to grow and progress. Others have focused on the adaptive reuse of their waterfront’s unique history, attempting to represent themselves as a city that remembers as it progresses. Adaptive reuse has been a common method of regeneration for the latter of these two city types, primarily for its ability to physically represent an appreciation of site history, while creating new uses.

In order to reuse industrial waterfronts, major remediation efforts are often necessary because of the high level of toxic material that remains, posing a health risk to the public and causing environmental

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<sup>1</sup> Gene Desfor and Jennefer Laidley, “Introduction,” *Transforming Urban Waterfronts: Fixity and Flow* (New York: Routledge, 2011), 2.

<sup>2</sup> Richard Marshall, *Waterfronts in Post-Industrial Cities* (London, New York: Spon Press, 2001), 4-7.

degradation. These post-industrial sites are commonly “remediated” to the point where they no longer serve as a record of previous use and significance. This cleaning process regularly erases the byproducts of a site’s history as well as its industrial processes. The tangible evidence of the site’s history, the built structures, are cleaned and refurbished, transformed into empty pieces of sculpture. The landscape is similarly returned to a more orderly state that is often considered to appear more “natural.” Writing for *The Society for Industrial Archeology*, Duncan Hay praises the reuse of industrial structures, but laments the feeling that something inherent to the site is always missing at the end of the transformation.<sup>3</sup> The stripping away of the occupation and the layers of accumulation on the site removes the memory of the varied experiences that occurred there. This thesis proposes that an architectural intervention on an existing industrial waterfront space can expose the site’s industrial past while creating an active and protected public amenity.

The site itself is the first and primary subject of investigation and will be used to explore the proposed approach of this thesis. Sitting largely abandoned on the southern shore of Rock Bay in Victoria, British Columbia is The Victoria Gas Company Building, built in 1888, and the adjacent National Electric Tramway and Light Company Powerhouse, built in 1892. The Victoria Gas Company produced coal gas, a source of light and heat, facilitating the city’s growth from a Hudson Bay Company Fort into a thriving modern supply town. The Powerhouse generated electricity for the tram network, the city’s primary public transportation system, until it was converted in the 1950s to produce coal gas. Like many industrial sites, changing technology and the shift to foreign production caused the demise of this waterfront complex. As a result of its over 100 year industrial history, the site is currently considered to be the most contaminated in all of British Columbia.<sup>4</sup> While currently in the midst of a large remediation effort, plans

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<sup>3</sup> Duncan Hay, “Preserving Industrial Heritage: Challenges, Options and Priorities,” *Forum Journal* Vol. 25, No. 3 (Spring 2005).

<sup>4</sup> Andrew Duffy, “Massive Rock Bay Cleanup Years and Millions of Dollars from Finish,” *Times Colonist*, (3 January 2014).

for the future use are still uncertain. This thesis project will investigate the layered history of the built structures and their surrounding landscape on Rock Bay. It will devise methods for intervening that make use of the physical and immaterial accumulations in the transition of the site from a place of industry into one of amenity.

Through a literature review, this thesis will investigate the condition of urban waterfronts as marginal, transitional spaces. Because of the contaminated nature of the site, this thesis will examine the work of authors like Mary Douglas, who have studied the concept of dirt from a theoretical perspective. The literature review will also investigate the concept of “subnature” to understand the condition and possibilities of marginalized forms of matter. Lastly it will research how matter, even though considered “dirty,” can serve as a record and be a material form of memory.

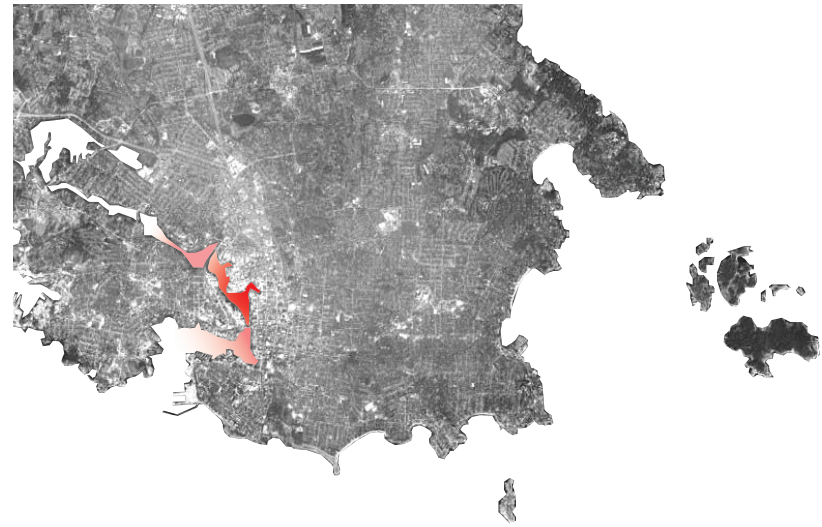


Figure 2: Map of Victoria, B.C. Rock Bay highlighted in red



Figure 3: Map of Victoria, B.C.'s inner harbor

Through site analysis, Rock Bay will be understood as a physically altered site, built up in layers, both in plan and section, from the scale of the city down to the minute compositions of materials. It will be read as a man-made and natural site, a product of industry and subnature.

The design of a public amenity, a water recreation and remediation center will serve as a method for demonstrating how architecture can mediate between a waterfront's past and present, revealing the soiled layers of industrial accumulation while creating a healthful environment for public enjoyment.





Figure 4: "The Ethics of Dust" Installation by Jorge Otero-Pailos, 2009

# LITERATURE REVIEW

## THE SHIFTING WATERFRONT AS LIMINAL, MARGINAL TERRITORY

Liminal spaces are those that are in-between, they are neither one way nor another; they are in transition and at a boundary. Waterfronts are liminal spaces. In their shifting state they create a transitional environment for individuals and societies. This fluctuation is created both by nature and by societies relationship to nature.<sup>5</sup> The understanding of the urban waterfront as a transitional, in-between place is critical to the reading of Rock Bay. The urban waterfront will be examined as a liminal space by investigating the tensions between nature and the city as it shifts from amenity to industry and from clean to dirty.

In *Transforming Urban Waterfronts: Fixity and Flow*, editors Gene Desfor and Jennefer Laidley organize their discussion of the urban waterfront through the

theme of “fixity and flow.” This fixed and yet shifting landscape between land and water is filled with tensions and contradictions. Urban waterfronts are spaces filled with tensions and contradictions because of this fixed and flowing condition.<sup>6</sup> Desfor and Laidley observe that, “these spaces embody the past, and represent opportunities for the future...they are represented as spaces of promise but have often been spaces of oppression, they are planned and unplanned; and of course, they are both natural and artificial.”<sup>7</sup> Urban waterfronts are particularly characterized by their temporal nature because they are situated between the more rooted fabric of the city and the organic movement of the water, making them both built and natural environments.

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5 Gene Desfor and Jennefer Laidley, “Introduction,” 2.

6 Gene Desfor and Jennefer Laidley, “Introduction,” 3.

7 Gene Desfor and Jennefer Laidley, “Introduction,” 3.

In his article, "Deep Water and Good Land," Gene Desfor describes the way in which nature and society interweave to produce urban landscapes, using the development of the waterfront in Toronto, Canada as an example. In 1914, the city of Toronto chose to transform the marshland on the waterfront into more usable industrial land. In order to capture the full potential of nature and propel the city forward, nature needed to be controlled. Nature was seen as "not only inefficient and unpredictable, but also feared, untamed, and outside the bounds of human control."<sup>8</sup> In the aim of progress, the marshland was dredged and filled in order to create an ideal shoreline for industrial processes and the transportation of goods. Desfor also observes that "Toronto's waterfront, by acting as a central delivery, storage, conversion and distribution hub for energy between about 1840 and 1970, was in this respect a central spatial technology of cyborg urbanization, a hybrid liminal space between land and water, city and country, culture and nature."<sup>9</sup>

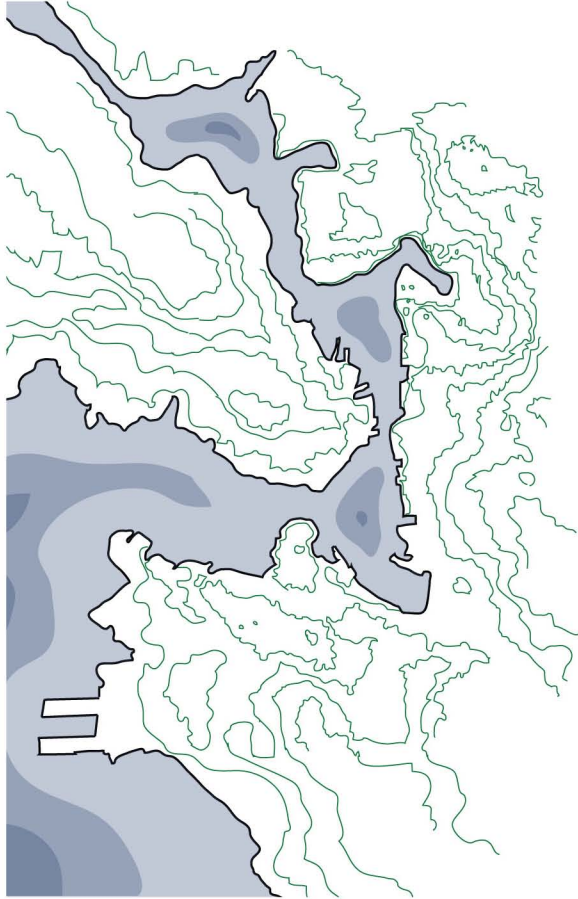
These altered urban waterfronts thus become centralized locations for these dichotomies between history and progress and the organic and artificial in the city.

Rock Bay's waterfront is similarly a marginal space in its tension as a both a place of nature and of the city (Figure 5). The city of Victoria sits on the southeastern tip of Vancouver Island, on the edge of the Strait of Juan de Fuca. Like many urban waterfronts, the form of the shoreline was drastically altered to accommodate the needs of a growing city. Mud flats were in-filled to create what is now the historic city center. The seafloor was also cut deeper to allow larger vessels to enter the port. A substantial stone causeway was constructed along the waterfront, creating a pedestrian promenade along the water (Figure 6). These alterations to the natural shoreline have created a man-made buffer between the city and the water that due to its utilitarian character hinders their spatial engagement.

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8 Gene Desfor, "Deep Water and Good Land: Socio-Nature and Toronto's Changing Industrial Waterfront," *Transforming Urban Waterfronts: Fixity and Flow* (New York: Routledge, 2011), 192.

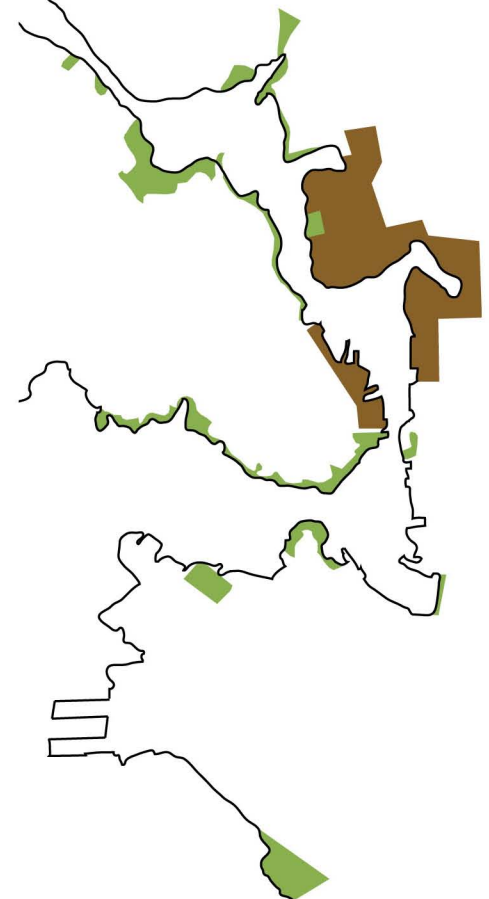
9 Desfor, "Deep Water and Good Land," 197.



WATER / LAND



NATURE / CITY



AMENITY / INDUSTRY

Figure 5: Victoria's waterfront as a liminal, in-between space

The Victoria waterfront is also an urban edge that is in transition from industry to amenity. Historically, the waterfront was an active place used by the public for commerce, production and leisure. It served as the primary location to distribute food, as the hub of shipping and transportation and as a place that urban inhabitants occupied to experience nature. Historic photographs depict people ice skating and swimming around Rock Bay, using the water as a public space (Figure 7). As the city grew larger and the need for industrial land increased, the waterfront transformed from a place of nature and amenity, to one of industry and utility. Because of the recent decline of industry, spaces of leisure began to reappear along the waterfront. The majority are parks and landscaped pathways, which use the water as both a backdrop and focal point.

The Victoria waterfront records this history in its material state, the juxtaposition of cleanliness and contamination.

The water of the bay evokes the pure state of nature; a compliment to the stately historic buildings that surround the inner harbor and a contrast to the dirty, bustling industry. However the water around and north of Rock Bay is actually highly contaminated as a result of its industrial past and not safe enough to swim in or use. The condition of the land and nature as clean versus dirty is therefor more ambiguous than it first would seem.

The paradoxes present in the space of the shoreline are endless, as it sits in between habitable land and inhabitable sea. Tricia Cusack observes that the water's edge can represent the declared boundary of a nation, or the distant horizon, representing opportunities for exploration and a better life. It can be simultaneously a fearful, unpredictable landscape and one of comfort and reflection. As a symbol of ownership and escape, the waterfront is a place of conflicting viewpoints, giving it a unique potential. When these spaces at the water's edge

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10 Cusack, "Introduction: Exploring the Water's Edge," 6.

have a history of industrial occupation, these cycles of change must be read in order for their possibilities to be revealed.



Figure 6: Photo c. 1905 depicting the newly constructed causeway and in-filled mudflats of Victoria's inner harbor



Figure 7: Photo c. 1916 of people ice skating on Rock Bay

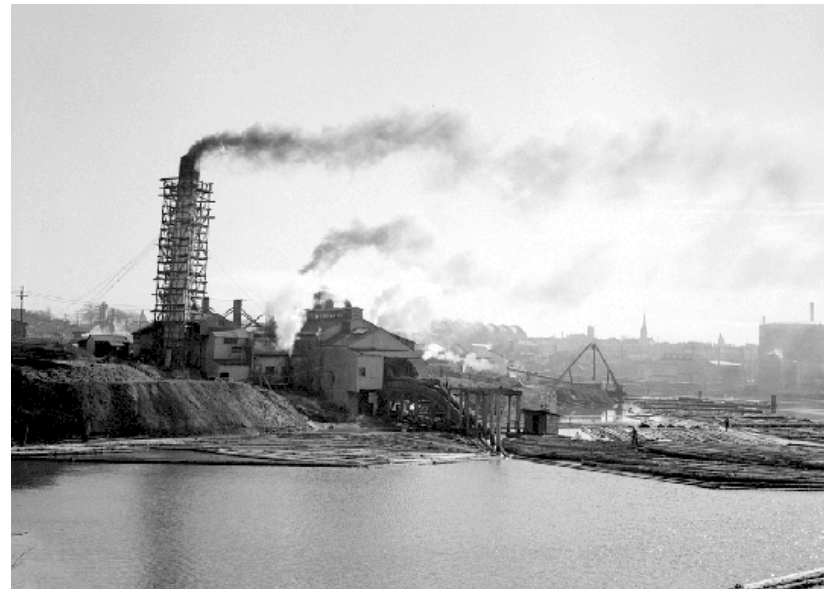


Figure 8: Photo c. 1905 depicting the McCarter Shake and Shingle Mill on Rock Bay

## LAYERS OF ACCUMULATION - MATTER OUT OF PLACE

Once the marker of technology and progress, the billowing factory smokestack is now a symbol of pollution and degradation. The pollution caused by industry around the world has contributed to a global crisis. These signs of contamination, whether they are still active or not, are still potent reminders of the imminent repercussions.

Most industrial sites are dirty. The soil and groundwater, the natural and the built surfaces, must be cleaned of contaminants for the sake of human and ecological health. On the waterfront, this remediation must expand to include the natural waterways connected to the land. When a post-industrial site is reused, the structures are usually either demolished or sanitized, involving the removal of soot left from production and dust from

abandonment. The goal in this kind of preservation approach is for the structures to appear as they did when first built. But this strategy of removing “dirty” surfaces in fact ignores an essential layer of the site’s history: the sediments of its past.

The motivation for this impetus to clean is at once complex and intuitive. First, it is important to examine what it means for something to be “dirty.” Mary Douglas, a social anthropologist, has described dirt as simply “matter out of place.”<sup>11</sup> She argues that cleanliness is a social construct based on a cultural perception of things falling outside a set system, being considered dirty. Elaborating on Douglas’ ideas further, William A. Cohen states, “nothing is inherently dirty; dirt is simply ‘matter’ that, within a particular framework, appears in the wrong location, and so violates a sense of the order of the world.”<sup>12</sup> He proposes that dirt does not fit into the order we have constructed as a society, so we

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11 William A. Cohen, “Introduction: Locating Filth,” *Filth: Dirt, Disgust and Modern Life* (Minneapolis: University of Minnesota Press, 2005), x.

12 Cohen, “Introduction: Locating Filth,” xi.

attempt to make sense of it by cleaning, or re-ordering it. When dirt is thought of as matter that happens to be in the wrong location, its accepted negative connotations can be challenged, allowing for an examination of the possibilities of the displaced matter.

It is important to make a distinction between types of dirt and waste in order to see their regenerative possibilities.

In *Filth: Dirt, Disgust and Modern Life*, Cohen distinguishes between two types of waste by stating:

Filth, in both its literal and figurative senses, covers two radically different imaginary categories, which I designate polluting and reusable. The former – filth proper – is wholly unregenerate, contaminating, even toxic, and demands to be rejected and denied. But when polluting or filthy objects are thought of as trash, waste, junk, or refuse, they become conceivably productive, the discarded sources in which riches may lie, and therefore fecund and fertile in their potential (x).

The significant difference between toxic waste that is dangerous and junk is that the latter holds possibilities for reimagination. So while a post-industrial site must be cleaned of its toxic refuse, it also contains resources in its discarded built remains. While often thought of

as “dirty” and useless, industrial structures lie in the category of waste that is regenerative. The specific nature of each form of material matter can be considered according to two categories, providing a strategy for assessing existing sites in a reuse project.

Dirt has a clear impact on the perception of the built environment, influencing societal debates over what is worth saving, reusing and cleaning, but it also influences architecture in other ways. The necessity of keeping structures and their occupants physically and perceptually clean have influenced the form and material of architecture through history. While to go into detail on this statement is outside the scope of this thesis, the understanding of the influence that dirt holds over architecture is vital to consider. In their book *Dirt: New Geographies of Cleanliness and Contamination*, Ben Campkin and Rosie Cox state, “notions of dirt and cleanliness can be said directly or indirectly to influence the arrangement and occupation of all interior and exterior spaces,

informing the minutiae of human behavior and actively influencing relations between people.”<sup>13</sup> Architecture’s response to dirt directly affects how people feel about waste and the cleanliness of spaces, and vice versa.

#### MARGINALIZED MATTER - SUBNATURE

Dirt is also threatening to architecture, particularly in relation to the natural environment. Although primarily the products of human occupation, pollution and dust also contain natural elements. These natural, but altered forms of nature can be understood as subnatural.<sup>14</sup> Subnature, as defined by David Gissen, is the “peripheral and often denigrated” forms of nature that are “envisioned as threatening to inhabitants or to the material formations and ideas that constitute architecture.”<sup>15</sup> They are often looked down upon by society because of their unpredictable and uncontrollable nature, or at least our misunderstanding of them.<sup>16</sup> In this way, in order to dissect the multifaceted nature

of subnatures, Gissen categorizes these subnatures as atmospheric, living, and most important to this thesis - material.

These subnatures have evolved into the forms we recognize today because of their link to humans. The atmospheric subnatures of gas and smoke, for example, are naturally occurring and existed long before humans, but have been altered by society into undesirable forms. Social, political and even architectural factors have led to the creation of subnatures that are as much a part of our environment as trees, clouds and water.<sup>17</sup> Gissen argues that even though many works of architecture claim to engage with nature, they do not engage with all forms of nature, only those they find pleasant.

Dust is seen by Gissen as a form of subnature that holds value in spite of its damaging effects on other forms of nature. He states that “[b]y addressing dust, we can

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13 Ben Campkin and Rosie Cox, *Dirt: New Geographies of Cleanliness and Contamination* (London: I.B. Tauris, 2007), 4.

14 David Gissen, *Subnature: Architecture’s Other Environments*. (New York: Princeton Architectural Press, 2009), 92.

15 Gissen, *Subnature*, 92.

16 Gissen, *Subnature*, 92.

17 Gissen, *Subnature*, 92.

confront its particular physical and emotional power, its connotations as a historical register, and its existence as a form of matter that moves with calamities and in the most banal moments of time.”<sup>18</sup> The neglect of these subnatures, means the loss of a critical aspect of urban life, perpetuating the idea that there is only one limited, proper natural environment. While, as Gissen notes, humans are innately attracted to natural architecture, this does not preclude an appreciation for the subnatural. Subnatures force society to examine our most prevalent relationships and associations with nature and the environment overall.<sup>19</sup> The appreciation of these more sordid environments of nature opens up new possibilities of engagement.

In his article, “The Architectural Reconstruction of Nature,” David Gissen questions the current trend of transforming post-industrial sites into natural ones “without any overt historical sense or aesthetic.”<sup>20</sup> The

literal reworking of “brown” urban sites into non-polluted and literally green forms returns the ground to a form sans industry – to a form before the destructive effects of industrial urbanization...a historical mentality, however idealistic and hidden, is at work here.”<sup>21</sup> He believes that these types of architectural responses value only the pre-human and pre-industry version of nature and ignore the site’s existing natural and subnatural condition. He discusses two reused landfill sites, the proposed 2001 design for Fresh Kills in New York City by James Corner Field Operations and the 1993 Nanjido Trash Island in Seoul, South Korea as examples of this (Figures 9 and 10). In these designs, he argues, “architects impart a novel return of the urban environment to a partially pre-modern and pre-industrial state: Images and experiences of nature appear where they should not appear anymore.”<sup>22</sup> When the distinctive post-industrial condition of a site is ignored in its reuse, the project fails to hold deeper meaning.

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18 Gissen, *Subnature*, 92.

19 Gissen, *Subnature*, 211.

20 David Gissen., “The Architectural Reconstruction of Nature,” *Landform Building: Architectures New Terrain* (Baden: Lars Muller, 2011), 456.

21 Gissen, “The Architectural Reconstruction of Nature,” 456.

22 Gissen, “The Architectural Reconstruction of Nature,” 460.

There are however many reuse projects that have successfully transformed post-industrial sites into places of public engagement, as well as toxic memory. One such example is the Landschaftspark Duisburg-Nord in Germany, designed in 1991 by Peter Latz (Figure 11). The park emphasizes the return and triumph of nature over industry through the incorporation of a landscape which overtakes the ruins of an ironworks. The park is successful in its effort to memorialize industry, and incorporates landscape in a way that reinforces how it is a later addition to the site, one post-industry. Gas Works Park in Seattle, designed by Richard Haag Associates and completed in 1975, is a park created on the site of a former coal gasification plant (Figure 12). The park's retention of industrial structures and contaminated soil respects the site's industrial past, as well as its subnatural condition. In her article "Landscapes of Industrial Excess," author Thaisa Way describes that "Haag's design proposes that where the history of a site is disturbing, where the reality of the site analysis suggests human



Figure 9: Proposal for Fresh Kills in New York designed by James Corner Field Operations



Figure 10: Nanjido Trash Island - now Haneul Park in Seoul, South Korea

vulnerability and a tenuous relationship with natural processes, one should engage in complex narratives of place.”<sup>23</sup> This approach is seen in the creation of a clearly man-made hill on site, which contains the leftover debris and contaminated soil from the plant. The hill’s dominating presence is a reminder of the past and symbolic of the entire park’s deference to the site’s unique industrial, as well as natural, history.



Figure 11: Landschaftspark Duisburg-Nord designed by Peter Latz

Although the reuse of dirty industrial sites can serve to retain site history, preserving the soiled matter itself is critical to collective memory as well. Jorge Otero-Pailos, a preservationist and artist, has created a series of works titled “The Ethics of Dust” which reveal the importance of dust as a signifier of history (Figures 13 and 14). Borrowing the name of his work from the similarly titled 1865 “The Ethics of the Dust,” Otero-Pailos uses author John Ruskin’s idea of the value of dust to create a discussion about pollution’s critical place in our history.<sup>24</sup>



Figure 12: Gas Works Park designed by Richard Haag and Associates

23 Thaisa Way, “Landscapes of Excess: A Thick Sections Approach to Gas Works Park,” *Journal of Landscape Architecture* 8:1, 28-39.

24 Jorge Otero-Pailos, Eva Ebersberger, Daniela Zyman, Thordis Arrhenius, Thyssen-Bornemisza Art Contemporary (Foundation); et al, *Jorge Otero Pailos: The Ethics of Dust*, (Köln :Verlag der Buchhandlung Walther König ; New York, NY : dist. by Art Publishers, 2009).

Both these works use a method of “preserving” dust that involves a process of applying latex to a building’s surface. In his first piece of the series, Otero-Pailos works with the wall of the ex-Alumix factory, an aluminum-smelting factory in Bolzano, Italy and his second work, with a wall of the Doge’s Palace in Venice, Italy.

The process involves carefully applying latex to a wall and then peeling it away from the surface, removing and capturing the dust in thin latex sheets. These dried sheets are then hung a few feet from the wall, creating a sort of ghostly image of the original surface. Otero-Pailos asserts that the dust, or pollution, on the wall is as worthy of preservation as the wall itself. Pollution, he states, is a part of our cultural heritage; while unintended, it is vital to preserve.<sup>25</sup>

Otero-Pailos is conserving the pollution itself, separating it from its initial resting place but still connecting it to



Figure 13: “The Ethics of Dust” installation in Bolzano by Jorge Otero-Pailos

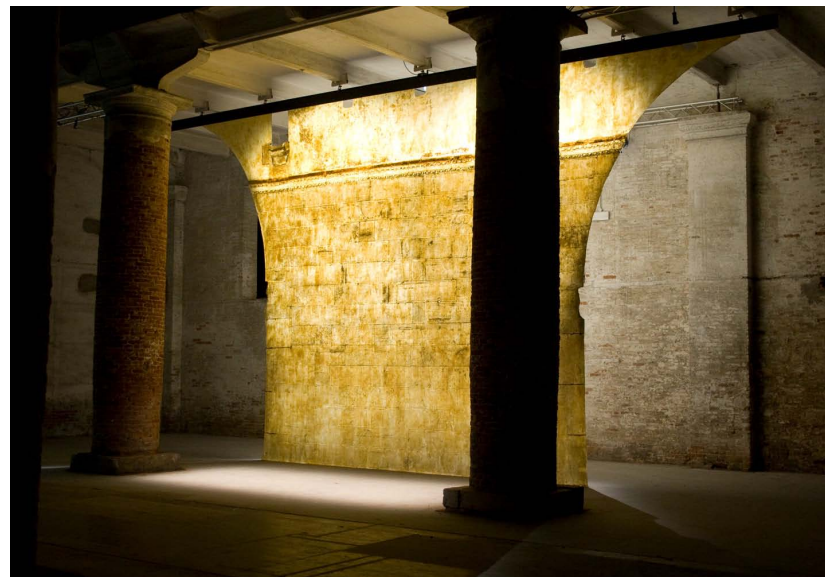


Figure 14: “The Ethics of Dust” installation in Venice by Jorge Otero-Pailos

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25 Otero-Pailos, *The Ethics of Dust*.

that place by the imprint of the wall left in the latex. Yet, when the latex artifact is finally removed from the site a critical element of the artwork is gone – having lost its connection to the once dirty wall. While this impermanence is the nature of temporary works of art, a direct intervention into the wall itself has the potential of a more truthful expression. This thesis proposes that a permanent architectural installation can similarly use pollution and decay as a design tool and use the cleaning process as a signifier of site history.

The soiled condition of underutilized or abandoned industrial sites is usually the byproduct of the industrial process and/or of its subsequent abandonment. The grime is not just evidence of the passing of time but it is also a sign of industry. Industrial sites are, by their nature, built in order to produce, this process is the most important consideration in their design. This manufacturing process that is the primary focus of the

site needs to be commemorated in a reuse project in order to preserve its history.

This thesis argues that the layered build-up of subnatural matter on an industrial site is a crucial physical characteristic that is integral to its character. In a similar way, the altered surfaces of the waterfront site itself are vital to the integrity of this post-industrial landscape. All these forms of accumulated matter, be they structures and debris or surfaces of dirt and land, are part of the site's history and worthy of preservation.

## FINDINGS AND CONCLUSIONS

Urban waterfronts are unique, liminal territories that are characterized by their tensions of functions and juxtapositions of form. Reading the past and present shifts of the water's edge allows the possibilities of these conflicts to be revealed. The layered subnatural and natural condition of industrial waterfront sites defines their integrity as physical representations of cultural heritage. The dirty/clean dichotomy of these post-industrial sites is simply another one of the ways in which the water's edge has become a marginal, in-between territory, which deserves further exploration.

By examining the basic meaning and value of those dirty aspects of nature that are deemed lesser, or unwanted, this thesis seeks to understand our bias against the subnatural and to reveal how architecture can engage with the environmental conditions it has created. Dirt and dust have a place in our cultural heritage, as do

the symbols and structures of blemished industry. The design intervention will take advantage of the in-between character of the urban waterfront to reveal its polluted, industrial past as it is transformed into a living public amenity.



## METHODS AND GOALS

This thesis uses a method of reading the post-industrial site; one that interprets its natural and social history through an examination of the layers of its accumulated matter. This thesis will analyze the site in a chronological sequence; from its natural geography, through its industrialization and use, and finally to its current state of obsolescence and contamination.

In valuing and utilizing the accrued subnatures of the site, the thesis will expose ways in which architecture can redefine the city's relationship to 'nature' at the water's edge. By engaging with the dirt and debris, rather than erasing it, a balance can be found between honoring the history of the urban waterfront and reactivating it for future use.

This thesis attempts to reveal how the perception of what is 'clean' and what is 'dirty' is a social construct, and when the boundary between these two conditions is blurred, a new synthesis between our natural and built environment is possible. A water recreation center will serve as the program for this architectural intervention in order to create a safe public space while revealing the site's industrial past.





Figure 15: Aerial Photo c. 1950 of Rock Bay

## SITE ANALYSIS

This site analysis section will analyze the Rock Bay site in its historical and environmental layers. This examination is critical to the development of the general design approach and the specific architectural response. Rock Bay will be analyzed in chronological sequence, from its natural to subnatural condition, as a physical terrain and as accumulated matter.

### EARLY HISTORY - NATURE AND INDUSTRY

A natural formation, Rock Bay was named for the many islets it contained, small rocky islands with little vegetation<sup>26</sup> (Figures 16 and 17). An 1842 map of the Victoria region broadly outlines the organic contours of land and water in watercolor, identifying natural zones of



Figure 16: Early to Mid-1800's photograph of Rock Bay. Note the rocky shoreline, islets and wooden settlements nestled into the shoreline



Figure 17: Early photograph of Rock Bay, note the islets and coniferous trees.

26 "History of Rock Bay," Burnside Gorge Community Association, [http://rockbay.burnsidegorge.ca/sub2\\_History-of-Rock-Bay.html](http://rockbay.burnsidegorge.ca/sub2_History-of-Rock-Bay.html).

forests, plains and marshes (Figure 18). Although rough, the outline of Rock Bay in this very early map is distinct, surrounded by a dense forest shown in green. In early photographs, the shoreline is clearly defined by solid rock formations with small pockets of vegetation including grasses and coniferous trees. Diagrams of the shoreline show that a creek on the east end of Rock Bay once discharged the runoff from swamplands to the northeast (Figure 19). In 1888 the creek was filled-in and the water rerouted into pipes and an underground brick culvert, which continue to discharge into the east end of the bay.<sup>27</sup> The natural conditions of the protected inlet provided a safe and stable terrain for settlement, although the hard edge of the rocky shore sometimes proved challenging.

Since its settlement, the land of Rock Bay has been used for primarily industrial purposes. The first major industry located on the shoreline was a sawmill, occupying a large part of the northwestern edge of what

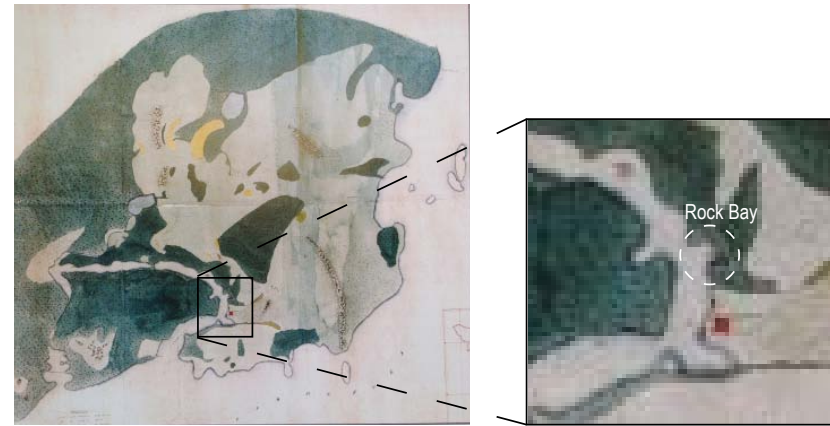


Figure 18: 1842 watercolor map created by James Douglas and Adolphus Lee Lewis while surveying land to recommend a location for Fort Victoria (shown in red). Yellow indicates marshland, light green indicate plains and dark green indicates forested area.

would become the Victoria Gas Company site (Figure 20). With downtown Victoria to the south serving as the civic and governmental heart of the city, Rock Bay served as the manufacturing center, close to water transportation and natural resources. In order to facilitate industrial operations on the bay, bridges, elevated walkways, docks and piers were constructed along the water's edge (Figures 21 and 22). This shoreline infrastructure was built out of the most readily available and cost efficient

27 "History of Rock Bay," Burnside Gorge Community Association.

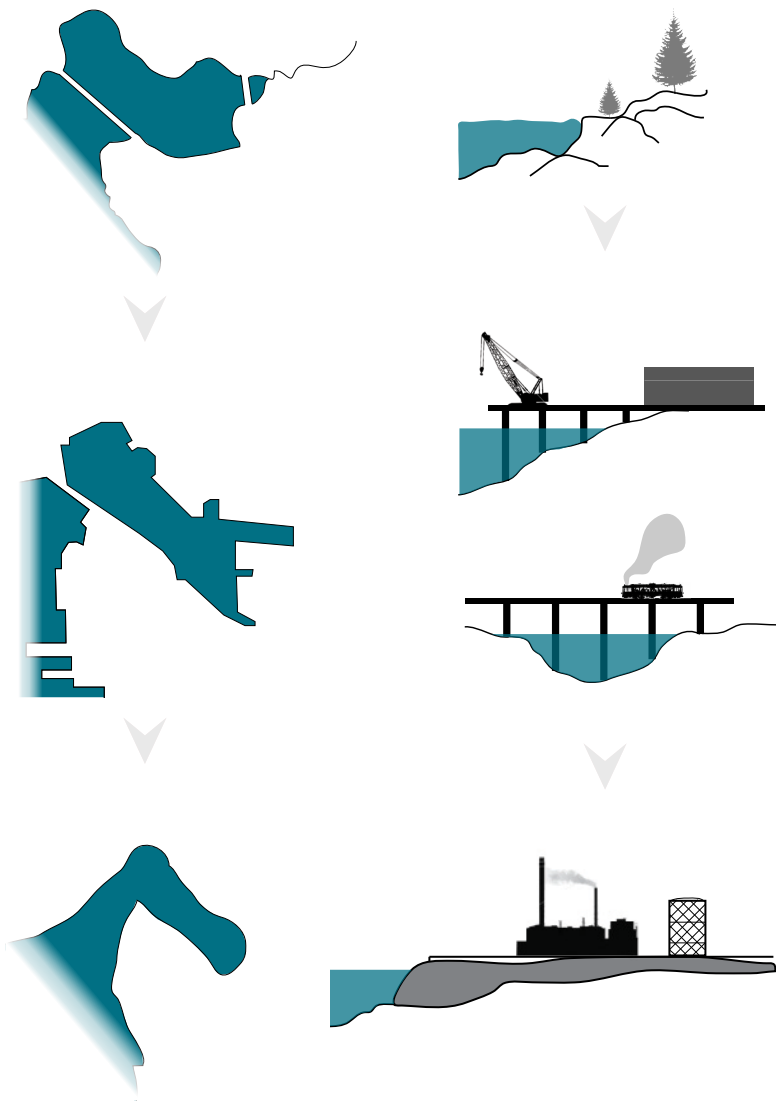


Figure 19: Site changes: shoreline form, water's edge and use.



Figure 20: Photo of the Capital Planing Mill on Rock Bay



Figure 21: Pre-1900 Rock Bay Bridge

material, wood. This man made expansion of the water's edge changed the shape of Rock Bay, regularizing its profile and reducing the area of water (Figure 19).

As the city of Victoria grew and became more industrialized in the 19th century, the shoreline condition continued to evolve towards a constructed environment in its form and appearance. As the materials of brick and concrete became more readily available, the site again changed in appearance and form. The formation of the Victoria Gas Company in 1862 supplied the town of Victoria with coal gas, which provided heat and light for its inhabitants.<sup>28</sup> Located on the southern shore of the bay, the company primarily consisted of a coal gasification plant, housed in a complex of brick warehouses and steel framed gasometers. (Figure 23) The typical nineteenth century industrial building type of an institutional character and solid construction of brick and stone can be seen in heavy structures built for the National Electric



Figure 22: Photo of the Victoria Gas Co. on Rock Bay, note the wood piers

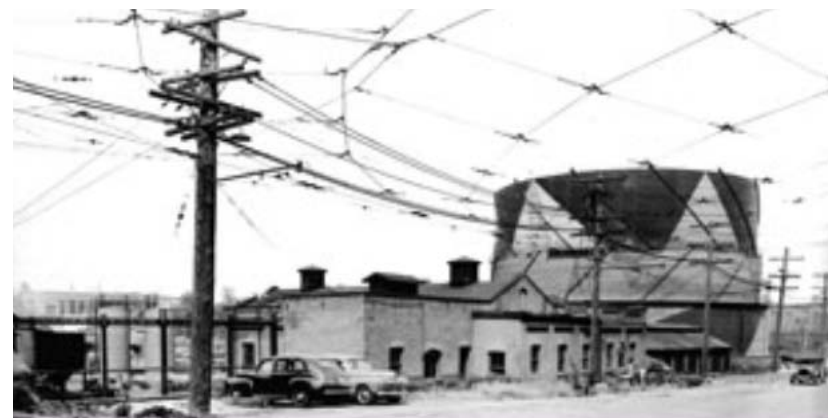


Figure 23: Victoria Gas Co. circa 1940. Note the tram lines above and the large gasometer

28 "Victoria Gas Company," Canada's Historic Places, Parks Canada, <http://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=6339&pid=0>.

Tramway and Light Company Powerhouse (Figure 24), the Victoria Brewing Company (Figure 25) and the Victoria Gas Company (Figure 26). As the built fabric of manufacturing became more permanent and civic, the shoreline also became increasingly structured. The byproducts of production, such as coal tar and other debris, were used as infill along the bay, replacing the wooden docks and piers and expanding the usable industrial area. Rock Bay had become a dense manufacturing zone, its edge fully ringed by industrial complexes and related infrastructure.

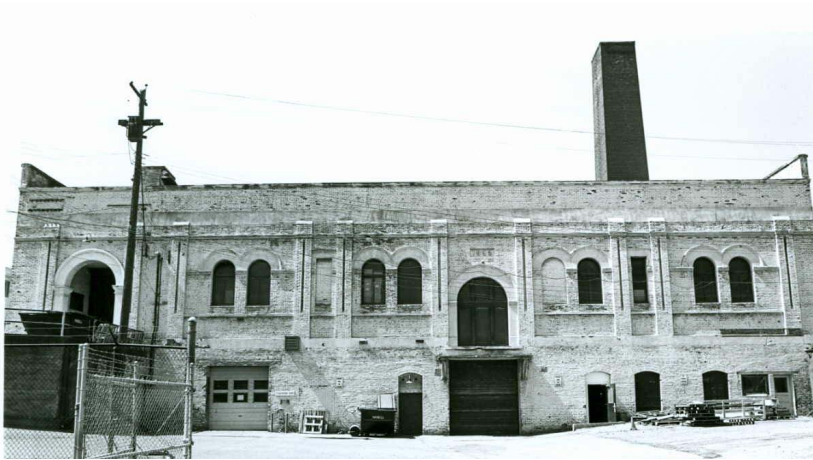


Figure 24: National Electric Tramway and Light Company Powerhouse, built in 1892.



Figure 25: Victoria Brewing Company Building, designed by John Teague, built in 1892, was adjacent to the powerhouse



Figure 26: Victoria Gas Co. building photo. Building originally constructed in 1888.

Rock Bay was at this point in time not only the provider of transportation power and equipment, but was a transportation center in itself. Two wooden bridges on piles served as access points to and from downtown. Elevated tramlines ran over the industrial site, several of which ran directly alongside it. In 1902 the tramline cut through and above the site on Store Street (Figure 27), and then subsequently moved one block further east to Government Street, shown on a 1930s streetcar route map of Victoria (Figure 28). People traveling through the city of Victoria passed by the site, making it a highly visible part of the city.

Among the first known built structures on the proposed site were the tram storage and maintenance brick warehouses located to the south of Pembroke Street, which still exist today. Because the power, equipment and the trams themselves were kept on or near the site, Rock Bay played a major role in of the overall

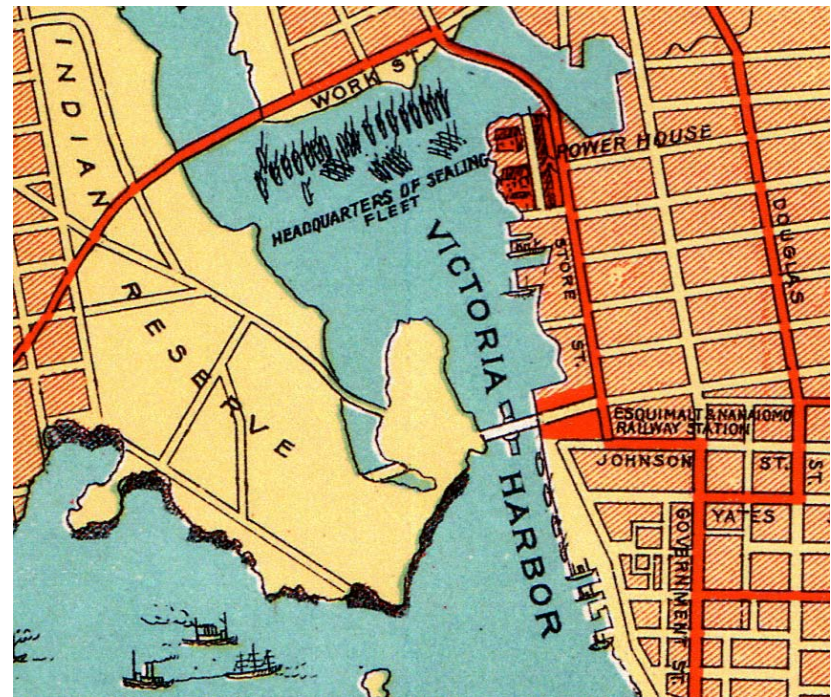


Figure 27: 1902 map of tram lines in Victoria

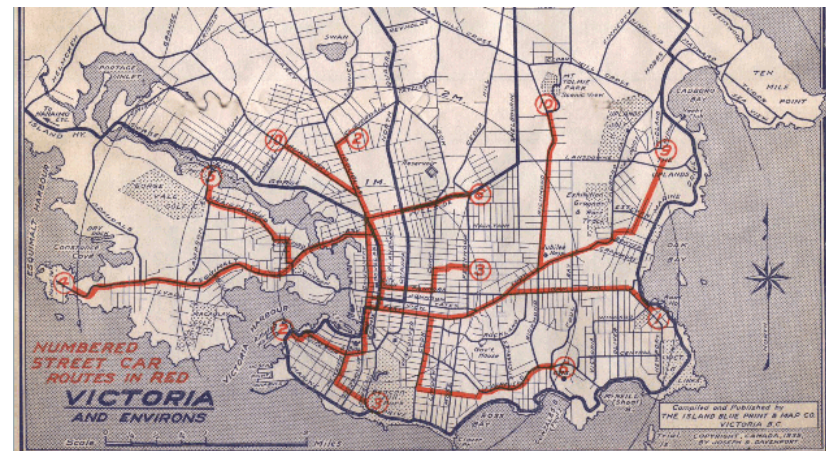


Figure 28: 1930s Map of streetcar lines in Victoria

transportation system of the city. However, by 1948 trams lost popularity and were completely replaced by motorbuses. The center for transportation moved offsite and Rock Bay no longer served as a transportation hub.

In the latter half of the twentieth century, many of the heavy industries of Rock Bay, became obsolete due to evolving technology and the move to offshore production. When the Victoria Gas Company was closed in 1954, many of the site's structures were demolished. The Powerhouse and one brick building from the Victoria Gas Company are the only buildings that remain on the site (Figures 29 and 30).

Rock Bay's industrial nature has been reinforced by the visual presence of symbols of industry, primarily the smokestack. The industrial shoreline of Rock Bay is clearly visible from both the water itself and from the parts of the city that lay west, across the water. In historic



Figure 29: Photo of the current National Electric Tramway and Light Co. Powerhouse



Figure 30: Photo of the current Victoria Gas Co. brick building

illustrations and photos, Rock Bay is clearly marked by a number of smokestacks billowing smoke (Figure 31). Today, one smokestack remains, on the Electric Tramway and Light Co. Powerhouse. Although no longer in use, it still stands out as a strong symbol and visual presence along the shoreline and overall skyline of the city (Figure 32).

A gravel company is still currently operating on the site, but will soon vacate the property as remediation efforts on site continue. Other built evidence of the industrial complex remain in the form of wood pilings, barges and other industrial relics (Figures 33 and 34). This debris has provided the basis for the slow accumulation of natural



Figure 31: Photo of Rock Bay and Victoria c. 1900

matter as the forces of the subnatural return to the site (Figure 35). The current conditions of the land/water relationship are shown in Figure 19.



Figure 32: Panorama of the current site

As industry started leaving the area, Rock Bay's position as a transportation hub also vanished. The streets around Rock Bay that once connected directly to the shoreline are now cut off. Numerous barriers in the form of fences and barricades make it difficult to catch even a glimpse of the water from land, and impossible to physically reach the shoreline without trespassing on private property. Cut-off from the rest of the city, Rock Bay is now isolated, forming a barrier between the public and their waterfront.



Figure 33: Photograph of an abandoned barge on the site



Figure 34: Photograph of the rocky shore underneath rip rap.

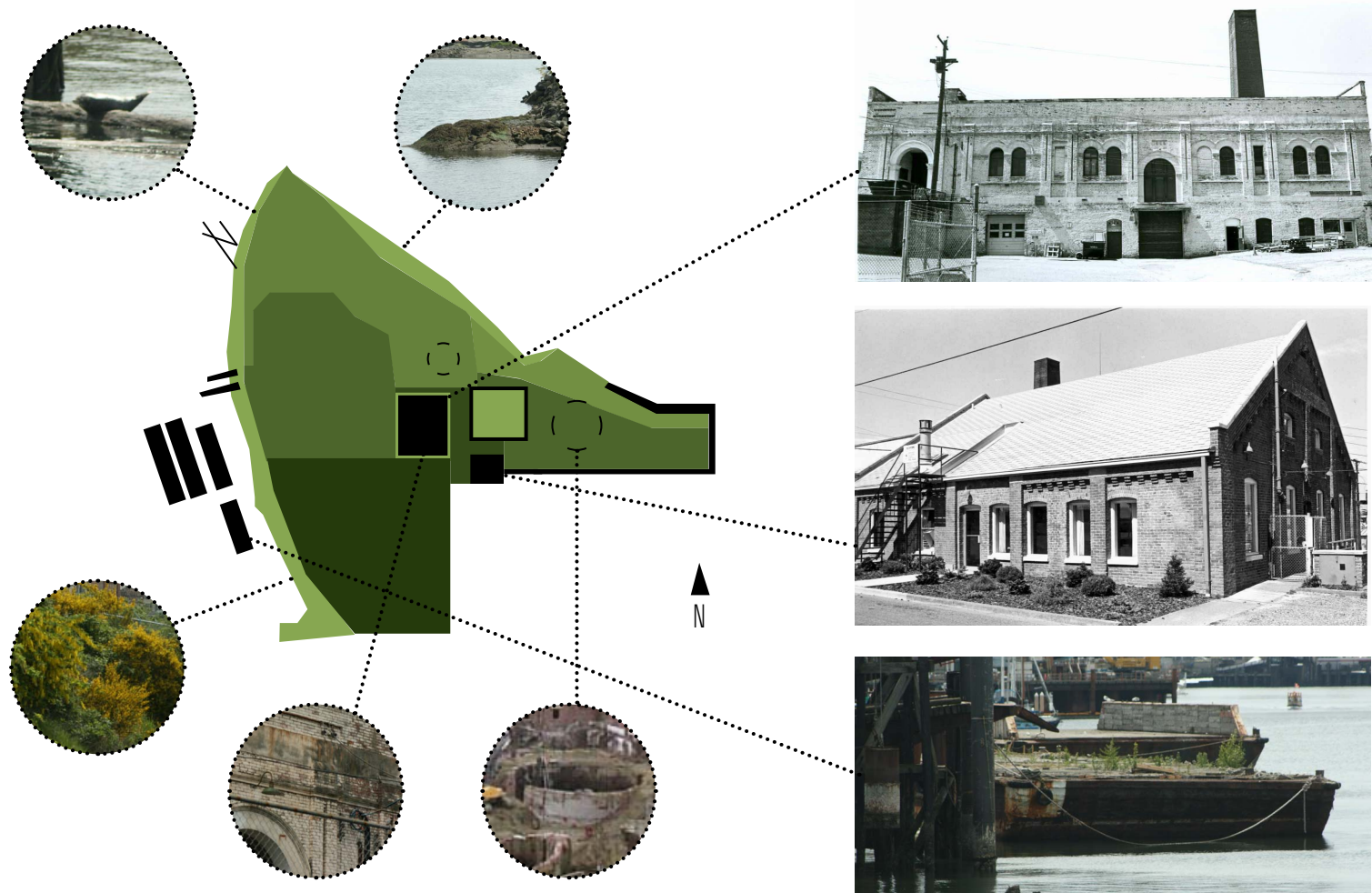


Figure 35: Natural/subnatural and man-made condition of the site.

## ENVIRONMENTAL HISTORY - SUBNATURE

Local environmentalists and politicians have identified Rock Bay as the most contaminated site in British Columbia.<sup>29</sup> The former Victoria Gas Company site is one of several sites in the area that is undergoing remediation coordinated by its current owners, BC Hydro and Transport Canada. The contaminated nature of the site is both a reality and a perception that is pervasive in the minds of the public.

Rock Bay continues to serve as the receptacle of the contaminated discharge from the city of Victoria.<sup>30</sup> The Rock Bay watershed (Figure 36) covers over 22% of the city of Victoria and contaminated runoff flows into the bay. Water quality testing has shown high levels of metals, such as lead, copper, silver and zinc, and PAHs (polycyclic-aromatic hydrocarbons).<sup>31</sup> While these contaminants in the water are a direct result of run-off, those in the soil are due to industrial processes. (Figure 37).

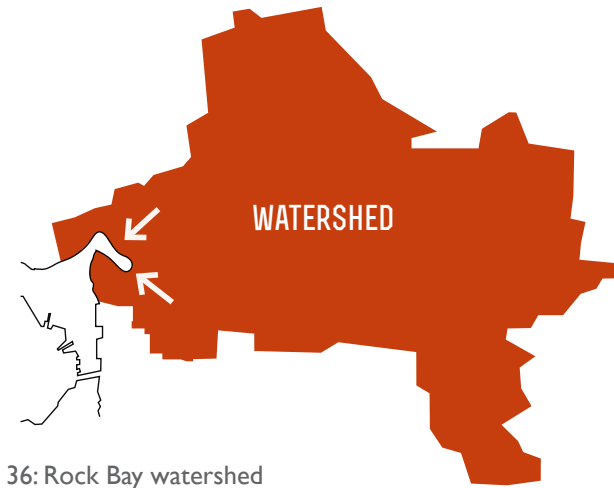


Figure 36: Rock Bay watershed



Figure 37: Rock Bay contamination map - assumed condition

29 Duffy, "Massive Rock Bay Cleanup," *Times Colonist*.

30 "Rock Bay: Problems and Solutions," Burnside Gorge Community Association, [http://rockbay.burnsidegorge.ca/sub2\\_Problems-&-Solutions.html#water%20quality](http://rockbay.burnsidegorge.ca/sub2_Problems-&-Solutions.html#water%20quality).

31 "Rock Bay: Problems and Solutions."

The Victoria Gas Company's practice of burying capacitors underground released large amounts of PCBs (polychlorinated biphenyls), a toxic material, directly into the soil of Rock Bay.<sup>32</sup> Each subsequent industrial process conducted around the waterfront has released contaminants of some kind into the water and its surrounding soil, particularly through the practice of dumping the byproducts of production into the water. The Victoria Gas Company's primary byproduct, coal tar, was used as fill around the bay, resulting in a large presence of PAHs. Fuel, PCBs, and DNHPL (dense non-aqueous phase liquid) are also prevalent around and in the water because of byproduct dumping.<sup>33</sup>

Stages 1 and 2 of the Rock Bay remediation plan have already concluded and stage 3 is now in process (Figure 38). In stages 1 and 2, almost 200,000 tonnes of contaminated, hazardous and non-hazardous soil has been excavated and removed from the site.<sup>34</sup> Buried concrete foundations, wood and brick debris were also

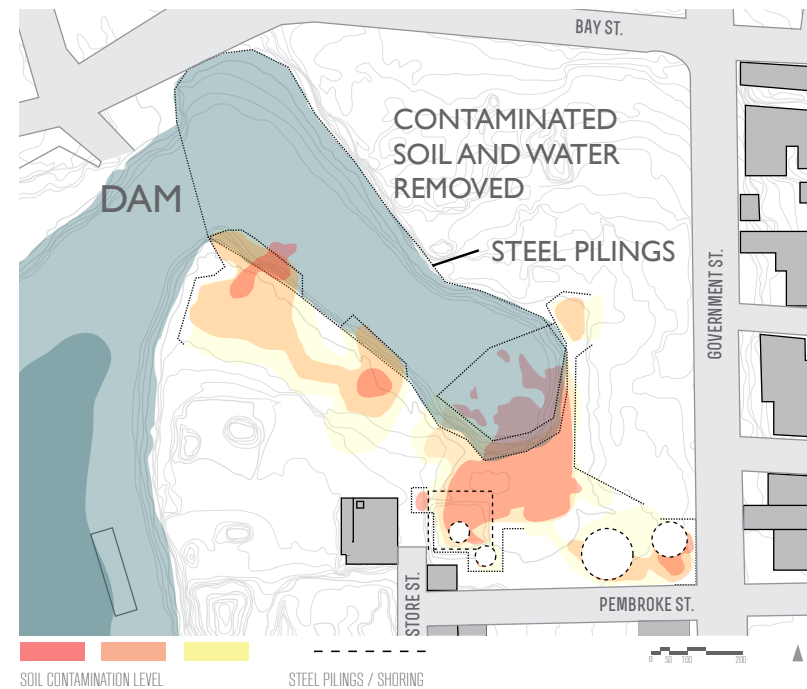


Figure 38: Rock Bay cleanup stage 3 diagram

removed from the area and at least one 20-meter diameter gasometer foundation was taken out. A brick Victoria Gas Works Building, originally constructed in 1860, was demolished in the cleaning process. Four gasometer foundations were compacted with clean soil and left underground however, providing the possibility for revealing another layer of accumulated matter in the future.

32 "History of Rock Bay," Burnside Gorge Community Association.

33 "Rock Bay Remediation Project Review - Stage 2 and 3," Worley Parsons, <http://www.worleyparsons.com/Projects/Pages/RockBayRemediationProjectReviewandStage2and3RiskandOptionsAnalysis.aspx>

34 "Rock Bay Remediation Project, Transport Canada," Federal Contaminated Sites Portal, <http://www.federalcontaminatedsites.gc.ca/default.asp?lang=En&n=9009D23F-1>

Stage 3 includes plans to construct a dam across Rock Bay to enclose and remove approximately 70,000 tonnes of sediment and soil. A large amount of water will also be drained directly from the Bay. Because it is difficult to foresee the extent of contamination in underground soil and the amount of buried debris, it is hard to anticipate what non-hazardous matter will be removed in this stage.

The site for the proposed design is approximately 10 acres in size and is bounded by the shoreline, Government Street to the east, Pembroke Street to the south and Bay Street to the north. For reference, the eastern half of the site, stretching from Pembroke Street to Bay Street is approximately 1,000 feet in length. Remaining structures on the site are highlighted in Figure 39. The Powerhouse, officially known as the National Electric Tramway and Light Co. Powerhouse, is the largest and most important structure remaining on the site (Figures 29 and 40). The building was built in 1892 and designed by architect John Teague, who was also the mayor of Victoria and designed

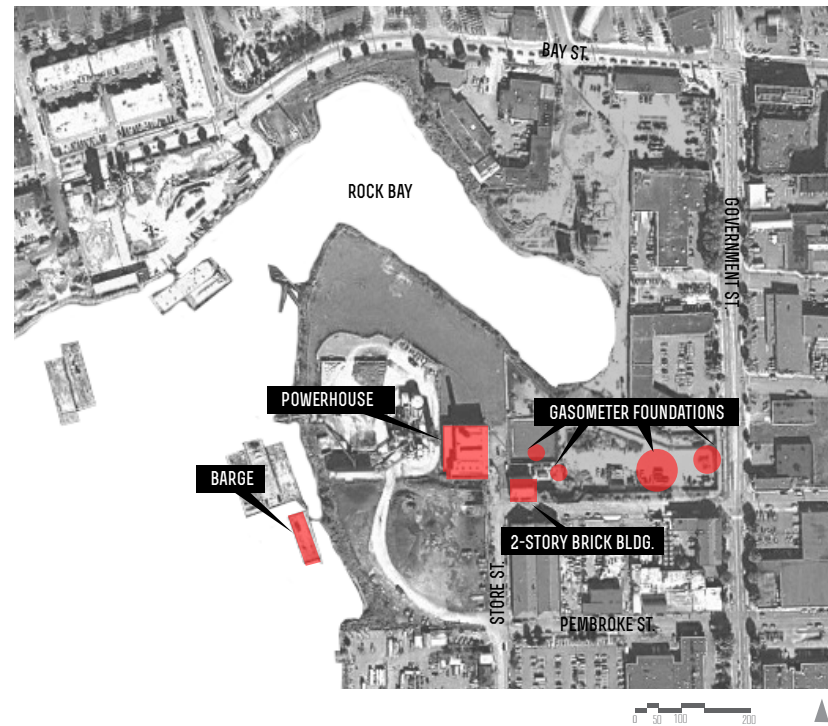


Figure 39: Current aerial map of Rock Bay



Figure 40: East elevation of the powerhouse building

Victoria's City Hall. It is primarily a load-bearing masonry building in a Heavy Romanesque style. The eastern elevation of the building is the most ornate, with corbeling and arched windows. It is approximately 100' x 130' in plan and approximately 3-stories tall. It was originally built as a steam generation plant, but was then converted to produce coal gas. It was listed on the Canadian Register of Historic Places in 2004.

Overall, it is clear that Rock Bay is in a hazardous and toxic condition and requires continued extensive remediation in order for both people and wildlife to safely occupy the site. The design will aim to reveal rather than cover up the site's condition as a place between dirty and clean, and between industry and nature. It will highlight the site's subnatural conditions rather than subverting or removing them, emphasizing the tension between dirty and clean present on the site. The intent of this thesis is ultimately to incorporate the remediation of the site into the creation a public amenity that will exhibit its layered state.



Figure 41: Powerhouse interior

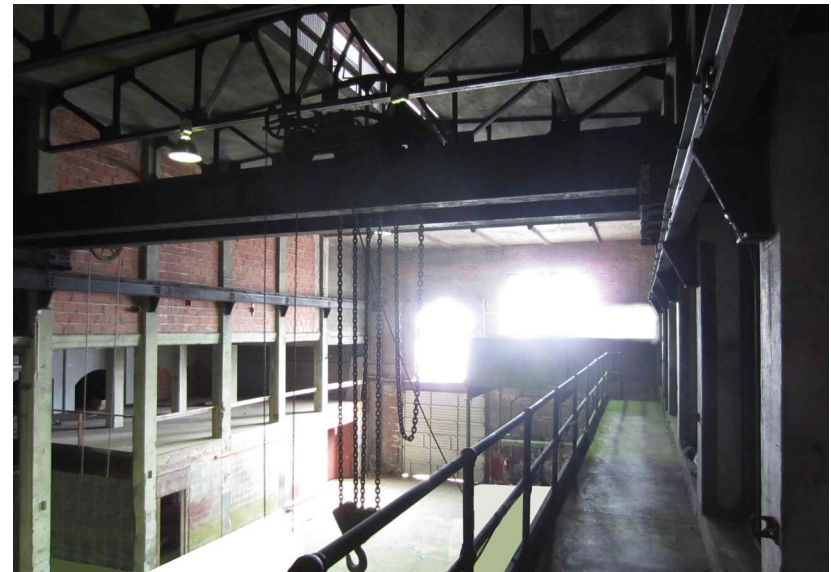


Figure 42: Powerhouse interior - main volume of space

## PROGRAM OF SPACES - RECREATION AND REMEDIATION

The program aims to reflect the varied facets of the condition of the site. The program should expose the juxtapositions of its urban waterfront location, its layered history and fabric, as well as its contaminated nature. The primary focus of the program is a place of public recreation, but it will also incorporate an aspect of remediation, in order to challenge what an “amenity” in this post-industrial context can be. (Figure 43) By incorporating the act of cleaning, the program accepts the site’s contaminated state and makes it visible to the public. It also seeks to push the boundaries of how one interacts with “nature” in a post-industrial urban environment.

The new water recreation center will allow the public to engage with the water of Rock Bay, not only visually, but in a spatial and tangibly kinetic manner. This program will reveal the unique condition of the in-between space

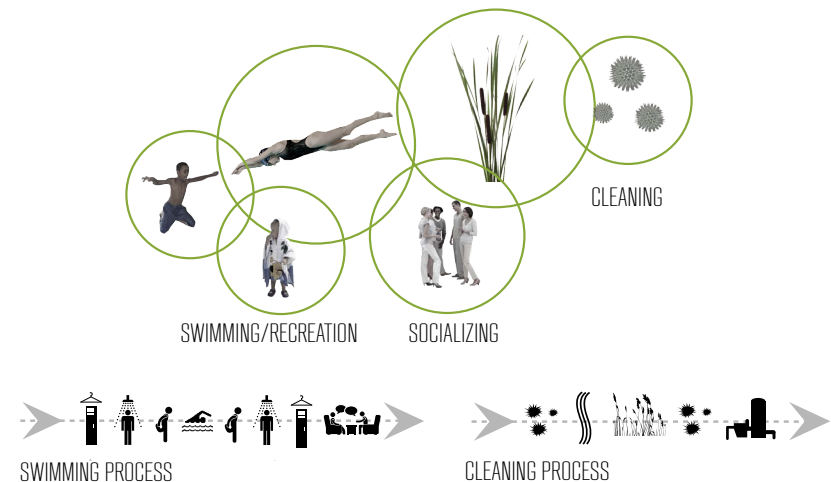


Figure 43: Program Diagram

of land and water at the water’s edge, highlighting the tension between dirty and clean. While natural bodies of water are most often associated with purity and cleanliness, those that have come in close contact with industry, like Rock Bay, are in fact contaminated and harmful to people. While cleaned through artificial means, swimming pools offer an aquatic space that is free from these dangerous chemicals, where a ritual

of cleaning is required. This dichotomy between clean and dirty will be explored through spatial and material architectural form. The sequences from land to water, from public to private and from exterior to interior will be explored through the activities of water recreation.

Spaces for systems, both artificial and 'natural' will act as cleaning agents for the water and soil surrounding Rock Bay and in the waters of the man-made complex. The use of subnatural forms of matter for aesthetic and functional ends will find expression in the architecture, making these systems visible and clear. The processes of cleaning of the past structures and the present bodies can overlap to bring awareness of the place of society in this urban environment. Ultimately, the program will bring people back to the waterfront and allow them to engage in water activities and the continued remediation of the site itself.

## DELIMITS AND LIMITS

Although taking on the reuse of two historic structures on the Rock Bay site, the design does not seek to conduct a historic preservation project following the guidelines outlined by governing legislation in British Columbia, Canada. It will however use the governing legislation as a guiding tool. This thesis interprets the Victoria Gas Company building and the National Electric Tramway and Light Co. Powerhouse structures as they relate to the overall theoretical framework in order to contemplate new methods of interpreting their significance.





Figure 44: Remediation and recreation

## DESIGN

The architectural intervention aims to not only remediate the site so that it once again can become a place of public amenity and engagement, but to reveal unique aspects of the site's history and resulting contaminated condition.

Architecture, as well as landscape architecture, serve as the means of intervening into the site and create opportunities for a dialogue with users.

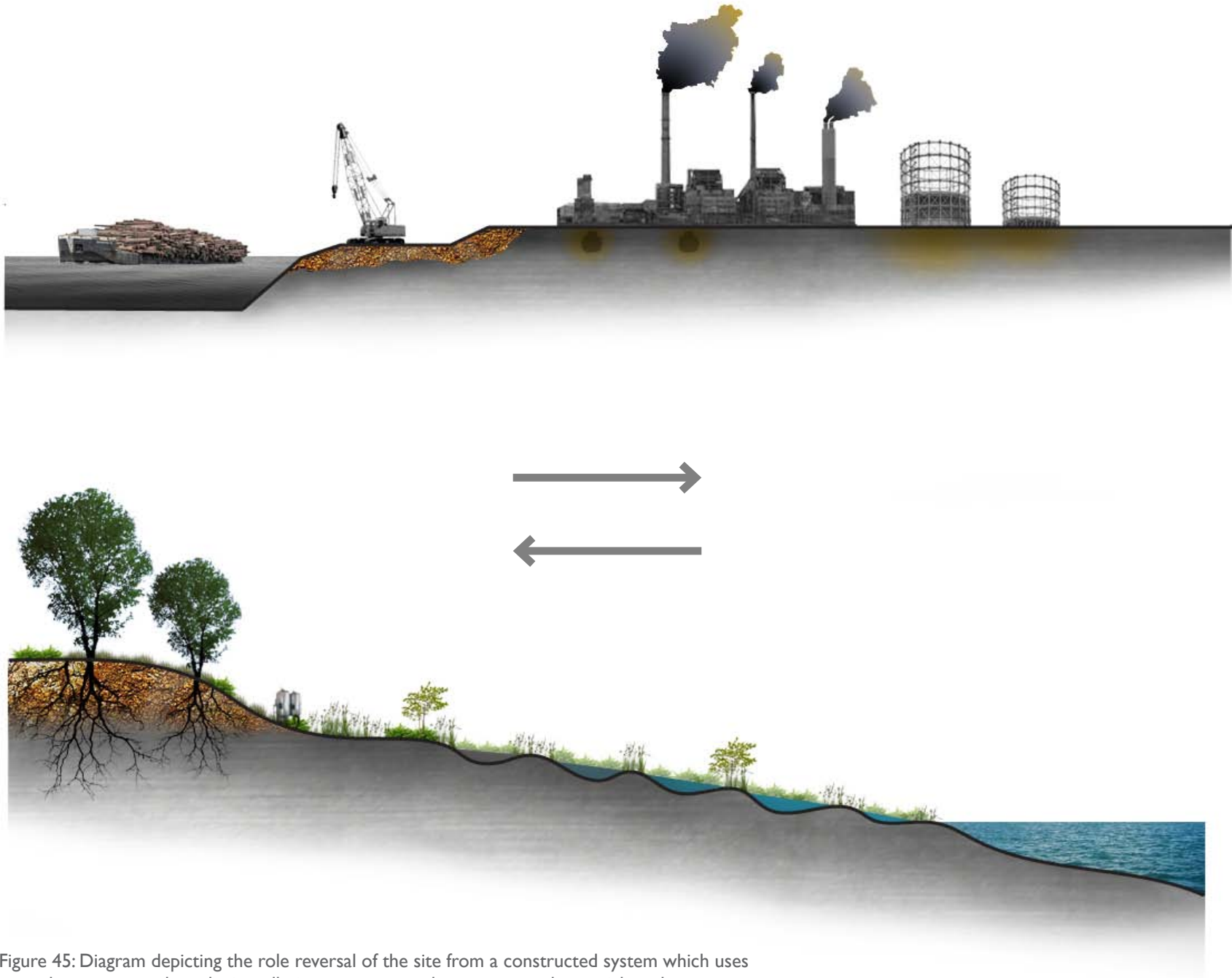


Figure 45: Diagram depicting the role reversal of the site from a constructed system which uses natural resources and results in pollution, to a system that uses natural material to clean.

## SITE STRATEGY - WATER

Rock Bay's unique condition as a post-industrial waterfront calls for an architectural response which values its distinctive qualities. The design question for the project became how to approach a site such as Rock Bay, which requires cleaning for safety and ecological needs, but should retain memory of its history as a polluting industrial site. The concept for the project and its overall site strategy focuses on a role reversal. Industry originally used natural resources in a constructed process, which polluted the city. The site can reverse however and use a constructed system of natural material to now clean the city. This role reversal not only serves to clean the contaminated site, but creates a continued dialogue about the role of the built and natural environment within the city.

Water flows and processes are therefore extremely important in facilitating the cleaning role of the site and are the driving force for the project's design. Recreation

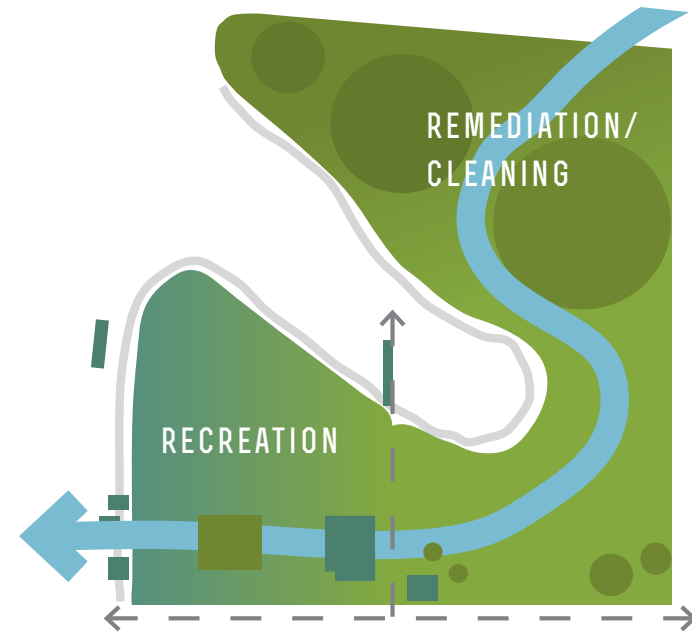


Figure 46: Diagram of overall site strategy - water flow

and remediation are both prioritized as programs, one on each half of the site, but the two programs overlap in order to create meaningful moments of interaction. The points of primary focus in the project are where an interface of water, people and existing site material and structure occur.

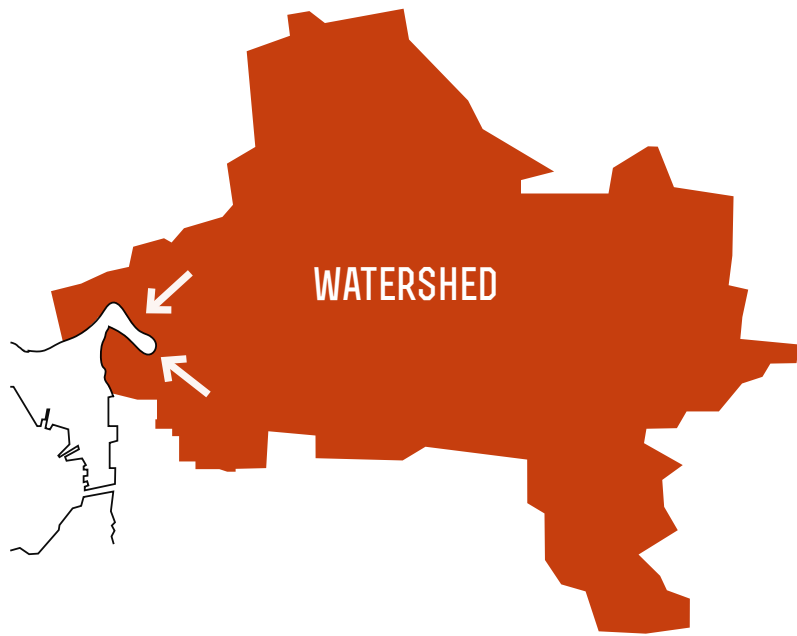


Figure 47: Currently, stormwater from surrounding neighborhoods flows into Rock Bay

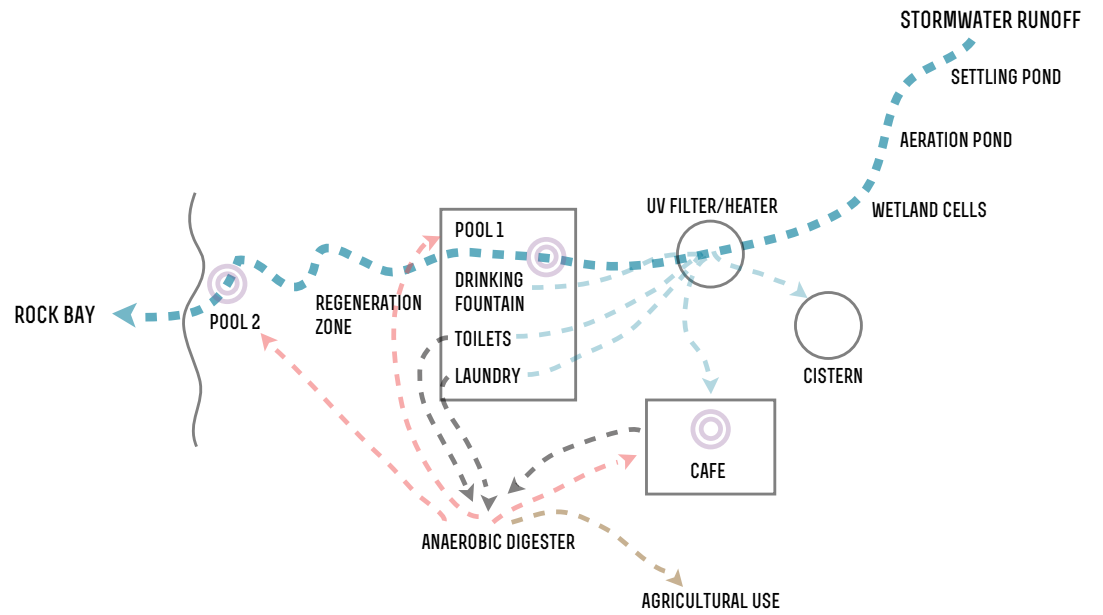


Figure 48: Proposed flow of water on site

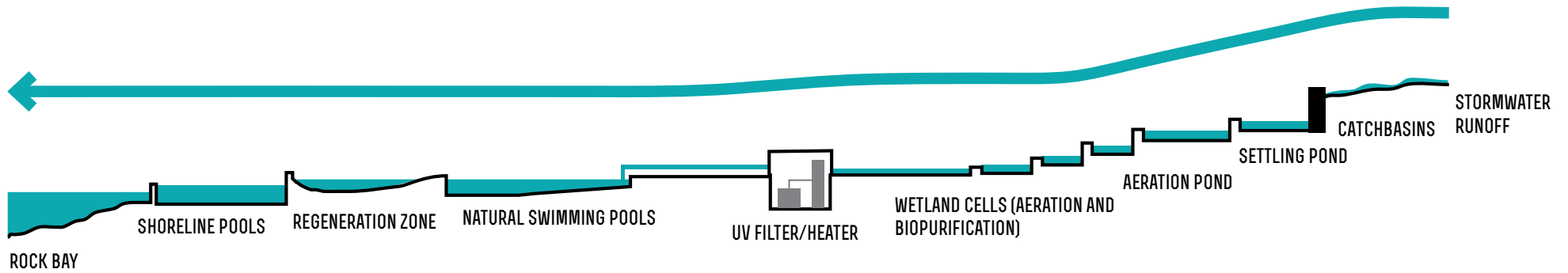


Figure 49: Sectional diagram depicting the proposed flow of water on site

## WATER FLOW

Currently, water flows from the surrounding neighborhoods in a combined sewer system into Rock Bay. In the new design, the water will flow from the northeast corner of the site through a series of constructed wetland cells until it reaches the center of the site, where an ultraviolet filter and heater, housed inside an existing gasometer foundation, filters the water to drinking level quality. The clean water is then either piped into the brick building for use in the structure's café and administration offices, or into the powerhouse, where it will be used for swimming pools as well as secondary uses such as showers, toilets, laundry and drinking fountains. After passing through a series of swimming pools the water will be cleaned in natural regeneration zones for use in additional swimming pools before being allowed to flow into the Bay. Greywater will be allowed to cycle back into the constructed wetland cells from both the powerhouse and brick building, while blackwater will be sent to an anaerobic digester, located in the same gasometer foundation as the ultraviolet filter and heater, for conversion into heat for the swimming pools, cooking fuel for the café and biomass for agricultural uses off-site.



Figure 50: Proposed site plan

## SITE PLAN

The proposed site plan uses the flow of water, as well as the health of the shoreline, as the primary forces dictating the site's layout.

The shoreline edge is reshaped to allow for a slope more conducive as habitat for native plant and animal life. The adjustment of this slope creates additional zones of habitat, and encourages sea life and vegetation, such as bivalves, barnacles and eel grass, to clean the water naturally.

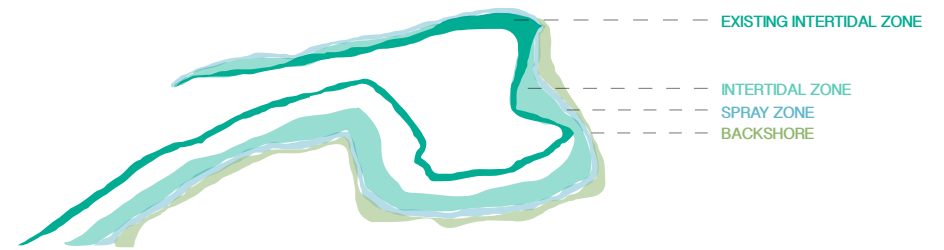


Figure 52: Shoreline condition diagram

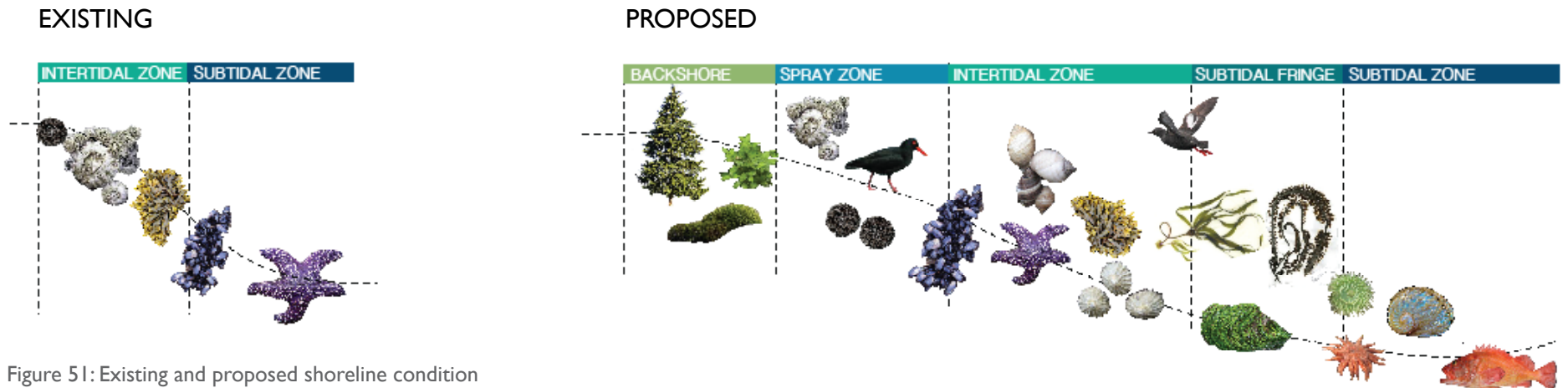


Figure 51: Existing and proposed shoreline condition



Figure 53: A U-shaped steel structure provides a safe interface between people and existing material, on the remediating portion of the site.

## REMEDIATION

In keeping with project goals to respect and utilize existing site material, contaminated soil is kept and remediated on-site in three mounds. The mounds contain bioremediators and are covered in bioremediating plants. Clay barriers keep the mounds from contaminating groundwater. Contaminated soil is also remediated inside the site's two largest gasometer foundations.

A mix of poplar and aspen trees further detoxify the soil within the gasometer foundations and act to regain the verticality of the former gasometer structures. A U-shaped steel structure provides a pathway through the contaminated soil, allowing visitors the opportunity to safely come in contact with existing site material.



Figure 54: Remediation mounds and gasometer foundation locations



PRIMARY ACCESS  
 PEDESTRIAN HARBOR PATH  
 FERRY

Figure 55: City and harbor circulation

## CIRCULATION

The circulation for the site responds to larger urban design patterns in the city. A proposed harbor pathway by the city of Victoria, highlighted in purple in Figure 55, will become the major connector to the site, particularly for recreational visitors. Government Street is the major existing connector for both vehicular and pedestrian traffic, and will continue to be utilized as an entry path to the site.

A new pedestrian bridge connects over the bay in the same location as the historic trestle bridge. Pembroke and Store Street are extended toward the water, reconnecting the public space of the street with the open space of the water. New mid-block connections further the connection of the site to its surrounding neighborhood and create a permeable site. Collectively, this network connects people to program throughout the site as well as being a connector in a larger network of movement around the harbor and city.

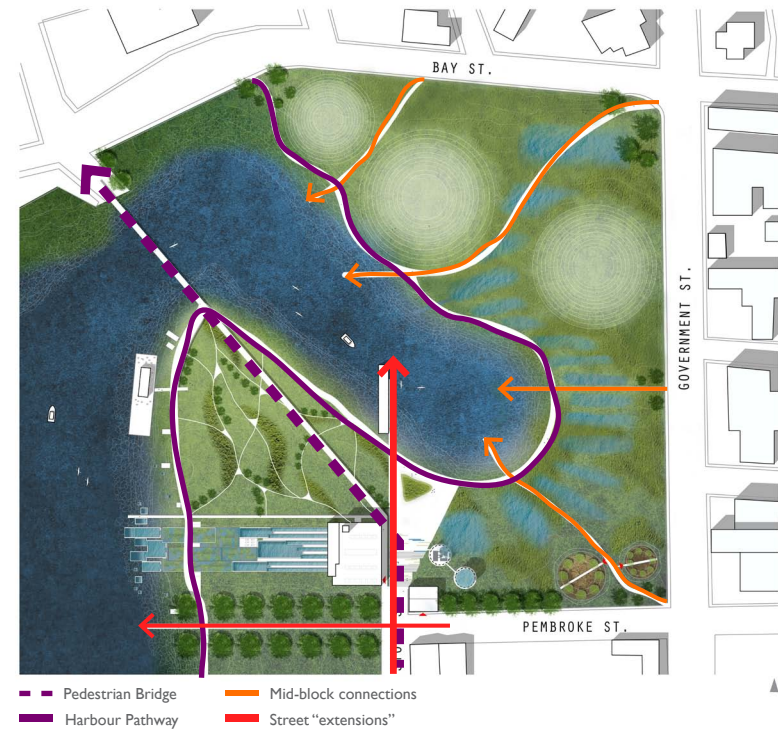


Figure 56: Circulation paths on site



Figure 57: Site plan with program

## PROGRAM

Reused structural material is the primary point of major programming. An event space is created on the existing abandoned barge, the powerhouse is used as a swimming facility, and the two-story brick structure is utilized as administrative offices and a cafe. The gasometer foundations are used for either remediation or to house mechanical equipment and a cistern for water processes. A new boat launch and water taxi stop are constructed on the shore, on axis with Store Street and adjacent to the pedestrian harbor pathway.



Figure 58: A plaza becomes the intersection point between the remediating and recreational halves of the site

## PLAZA

A plaza becomes the intersection point between the remediating and recreational halves of the site. It is also the continuation of Store street and aligns with the boat launch and water taxi stop, making the plaza a critical place of overlap and interaction.

The plaza represents the point where water is cleaned to a drinking level quality and sent into the existing structures for use by people. The pedestrian bridge hugs the eastern wall of the powerhouse and its structure aligns with the rhythm of the existing elevation, respecting and reflecting the powerhouse as an important piece of existing site material.



Figure 59: Location of plaza

## WETLAND / REGENERATION ZONE:



## REMIEDIATING:



## BACKSHORE:

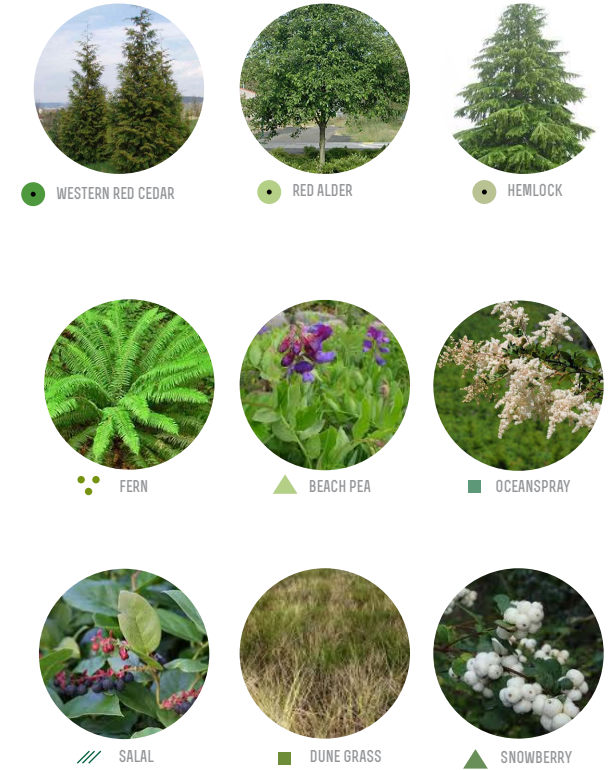


Figure 60: Plant selections

## PLANTING

The planting for the site focuses on three categories of plants: remediating, wetland, and backshore. Remediating plants were carefully selected based on their ability to absorb known contaminants on site. The plantings are clustered primarily on the remediating (eastern) half of the site, on the remediating mounds and in the remediating gasometer foundations. Wetland plants are designated for use in the constructed wetlands and regeneration zones. Groupings of three types of wetland plants: emergent, submerged, and floating, are designated for each wetland cell, creating a pattern that reinforces the constructed nature of the wetland. Backshore plantings are made up of native plants which can thrive on a waterfront site and create additional habitat. These backshore plants are grouped on the western half of the site, closest to the harbor, and create a more recreational environment for play and exploration.

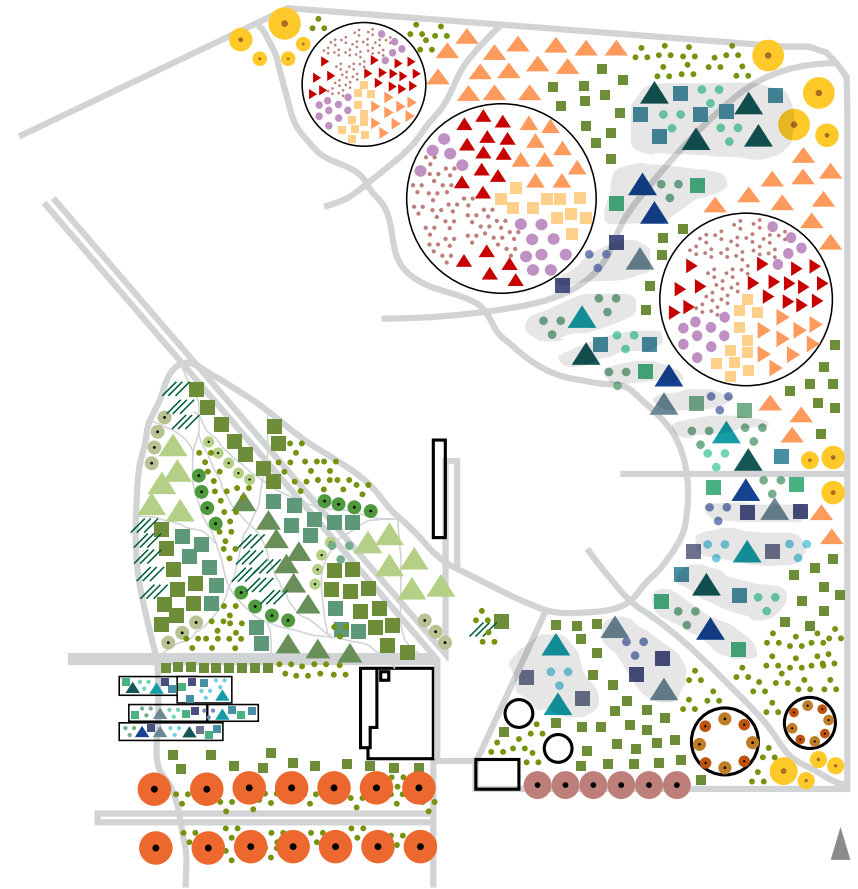


Figure 61: Diagrammatic planting plan

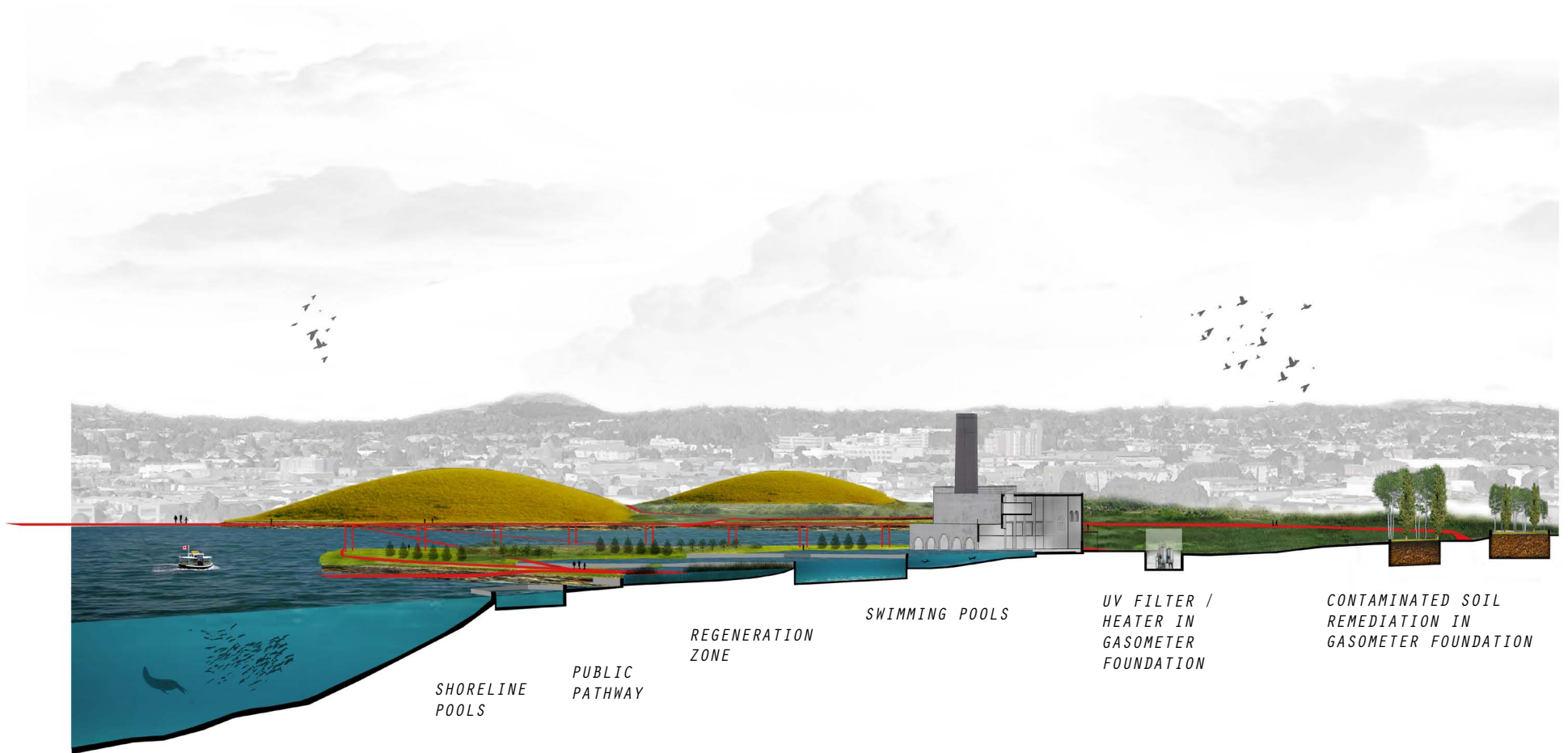


Figure 62: This east-west site section depicts the more recreational activity on site. Water flows from the UV filter and heater into the powerhouse, through swimming pools, the regeneration zone, under the public pedestrian pathway, through the shoreline pools and out into Rock Bay.

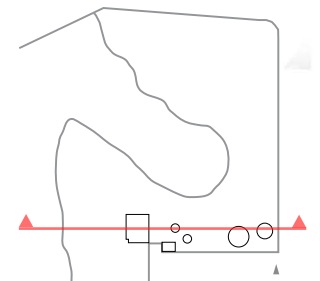
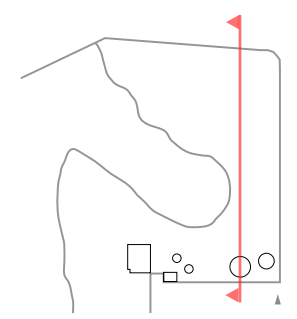




Figure 63: This north-south site section depicts the remediating activity on site. Water flows through the constructed wetland cells, while contaminated soil is treated in the remediating mounds and inside the gasometer foundations.



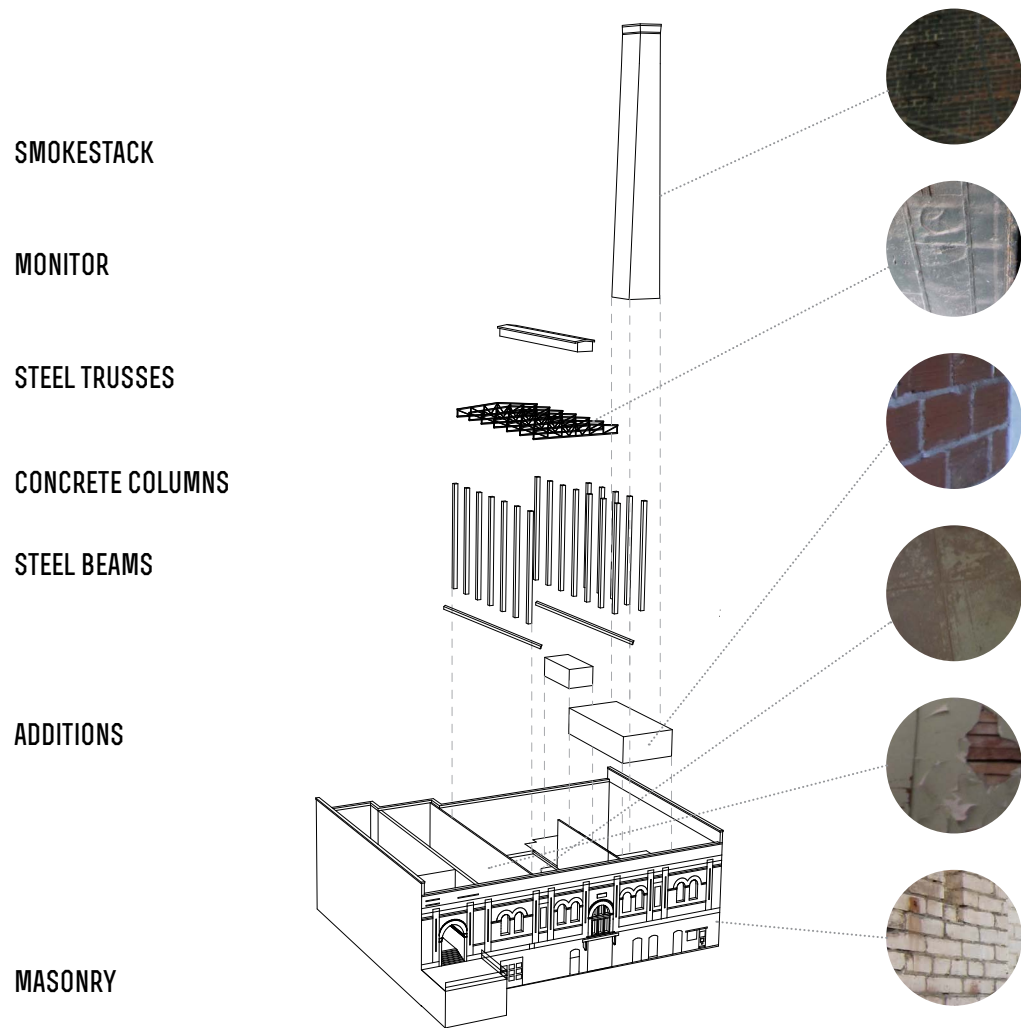


Figure 64: Powerhouse building exploded axonometric drawing, explaining the construction and materials of the structure.

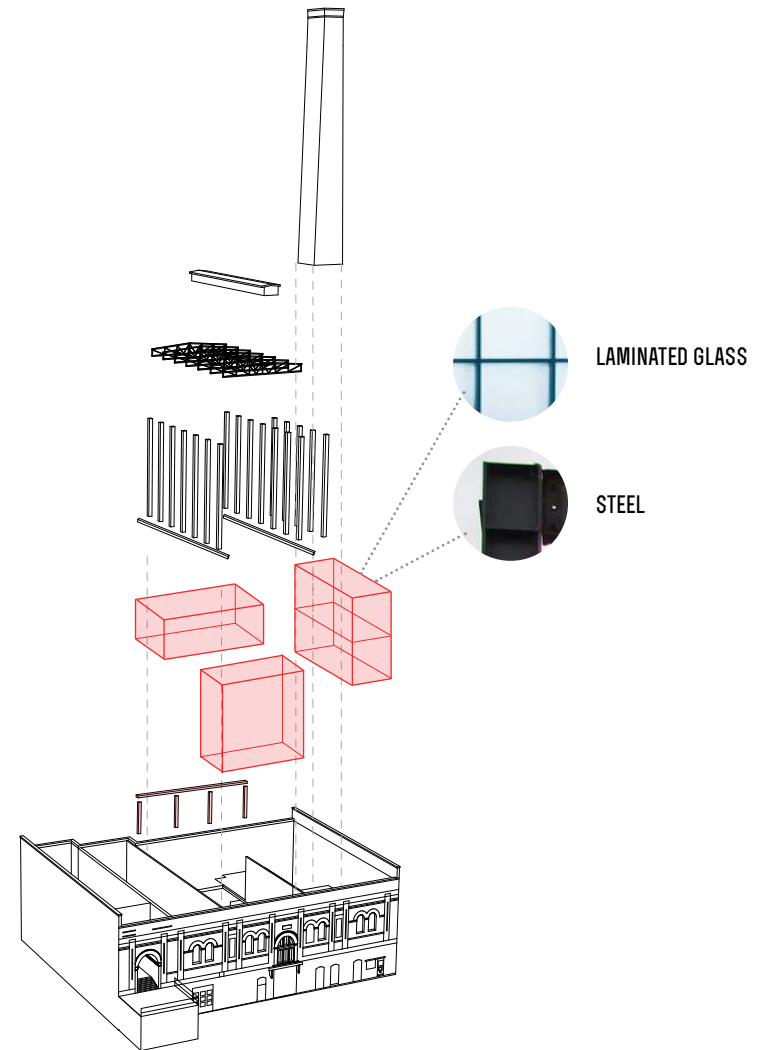


Figure 65: Concept for new insertions within the powerhouse

## POWERHOUSE - CONCEPT

The powerhouse is conceptualized in a way that draws from its existing conditions. Historically, new additions to the structure were built inside the masonry shell when new programs or uses arose. The proposed intervention again respects the existing masonry shell and creates new contrasting additions within the powerhouse.

These additions are constructed of primarily steel and laminated glass to contrast with the load-bearing masonry, concrete columns and steel trusses. The new insertions are conditioned spaces for workout rooms and showers.

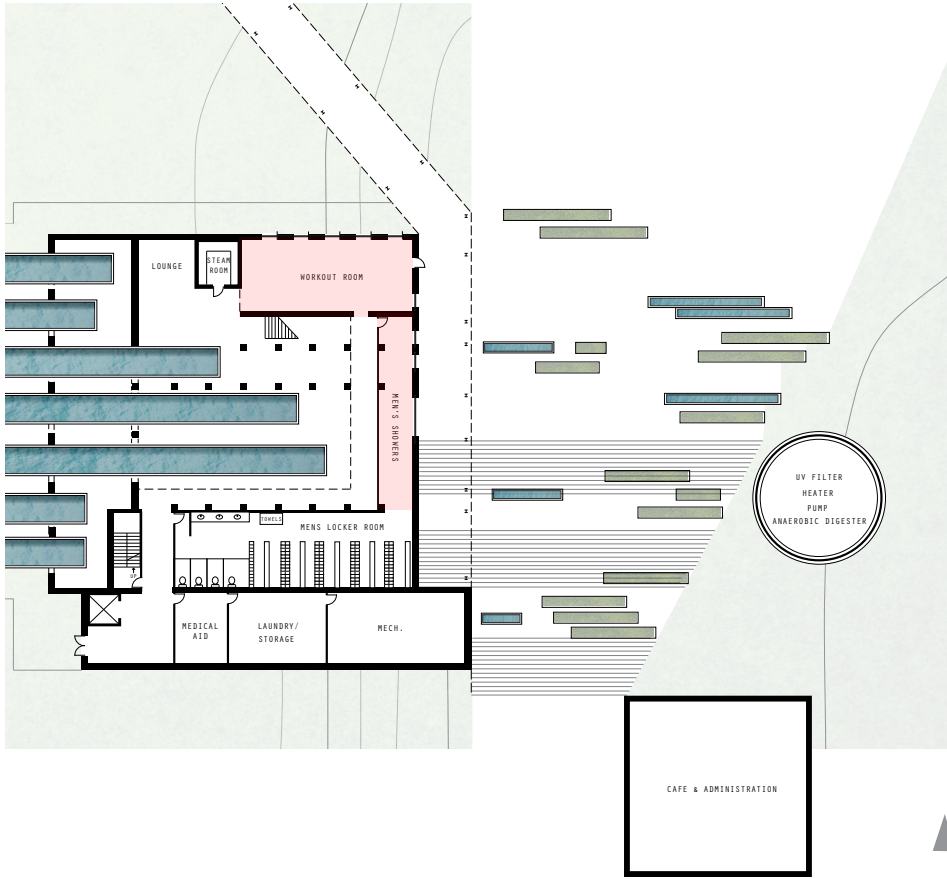


Figure 66: Powerhouse Ground Floor Plan. New insertions highlighted in red.

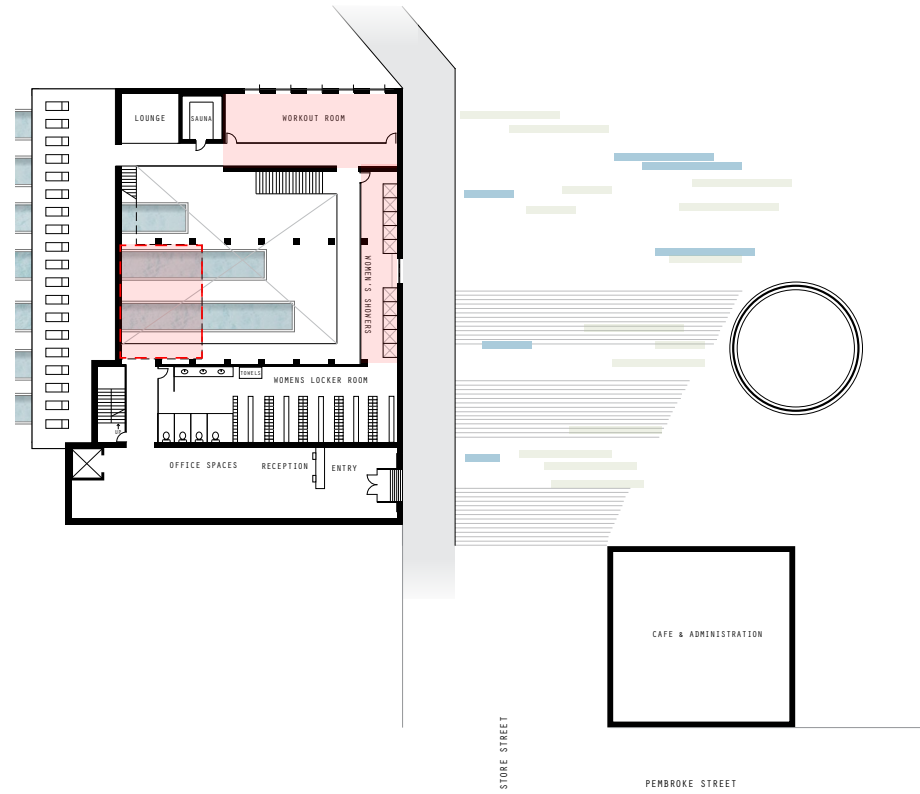


Figure 67: Powerhouse Second Floor Plan. New insertions highlighted in red.

## POWERHOUSE AS SWIMMING FACILITY

The entry to the powerhouse swimming facility is on the second floor, directly off of Store Street. A reception area and offices are the first spaces visitors encounter. From there, visitors can either enter the women's locker rooms on the second floor or descend using a stair or elevator to the ground floor. Women's showers, a workout room, outdoor deck and the sauna are all accessed via the second floor catwalks. On the ground level are the men's locker rooms and showers, an additional workout room, a steam room, lap pools, as well as services and storage. A new workout room will also sit within the large volume of space in a mezzanine above the second floor.

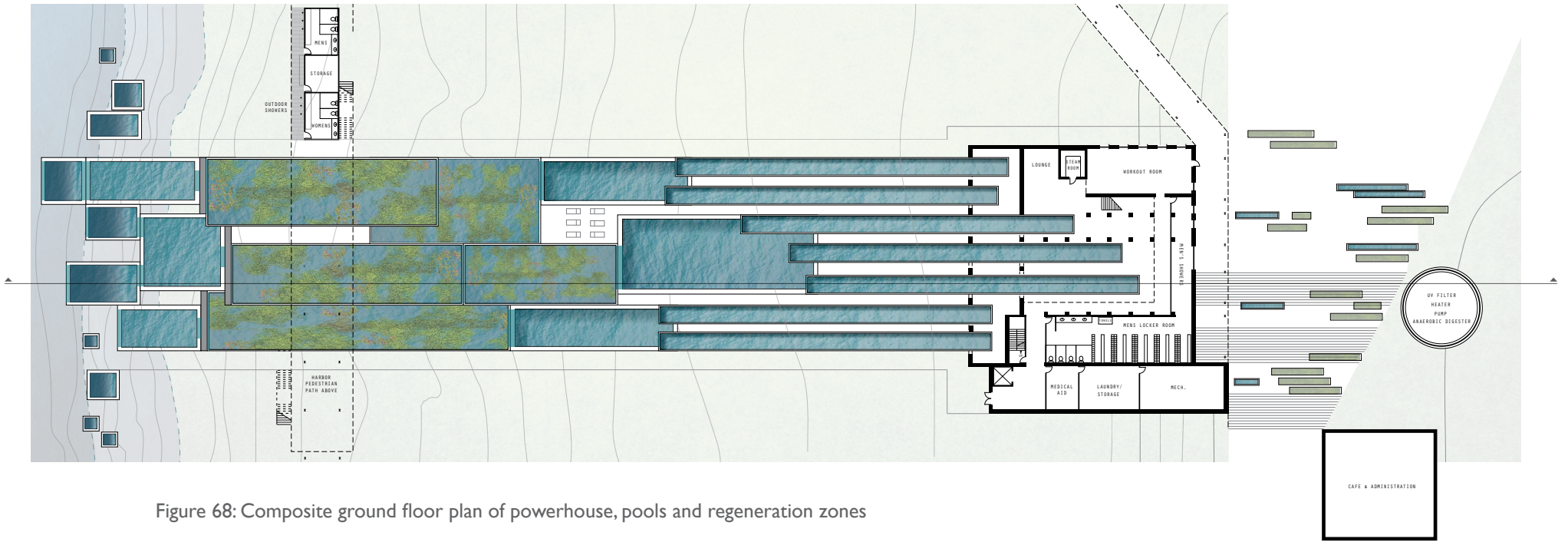


Figure 68: Composite ground floor plan of powerhouse, pools and regeneration zones

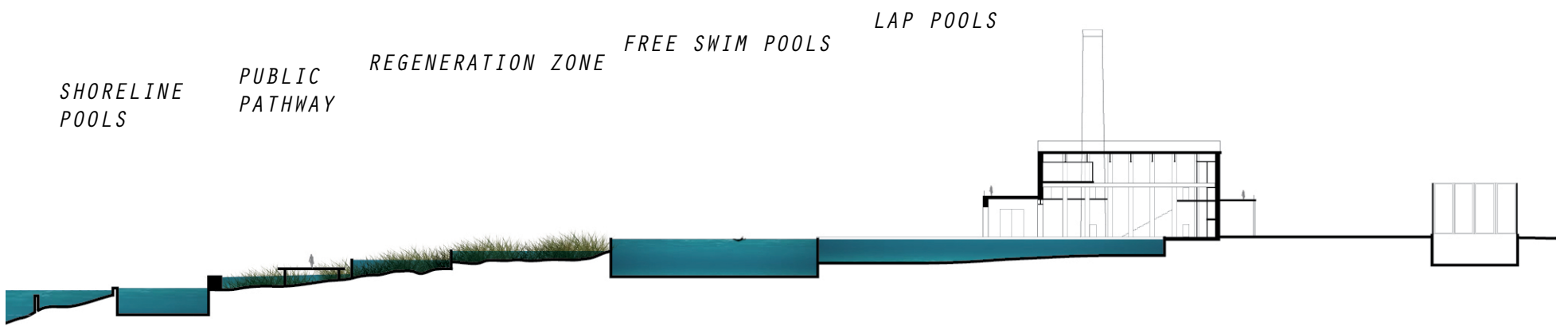


Figure 69: Section east-west through powerhouse, pools and regeneration zones

## POOLS AND REGENERATION ZONE

Water flows through the powerhouse building and into the swimming pools from east to west. From the linear lap pools, water flows into the free swim pools, then regeneration zone, under the public pedestrian pathway, into shoreline pools and into Rock Bay. Storage, restrooms and showers are tucked under the harbor pedestrian pathway.

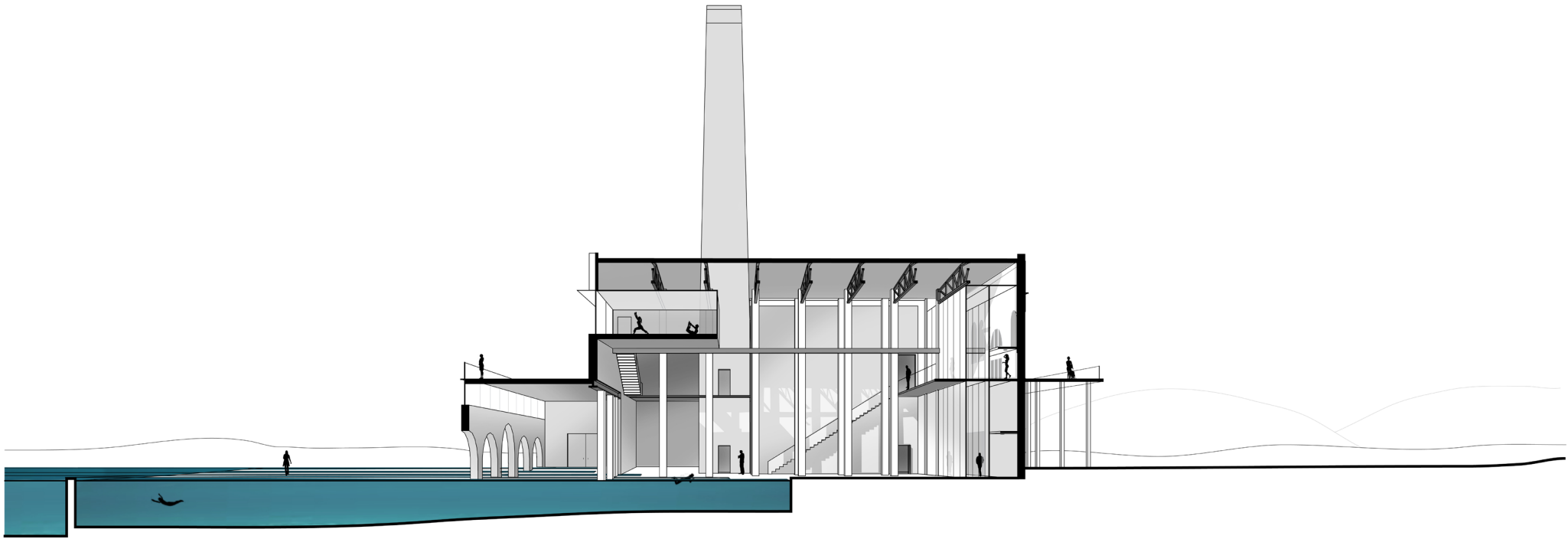
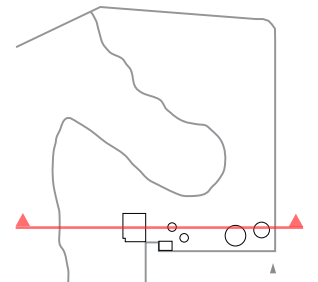
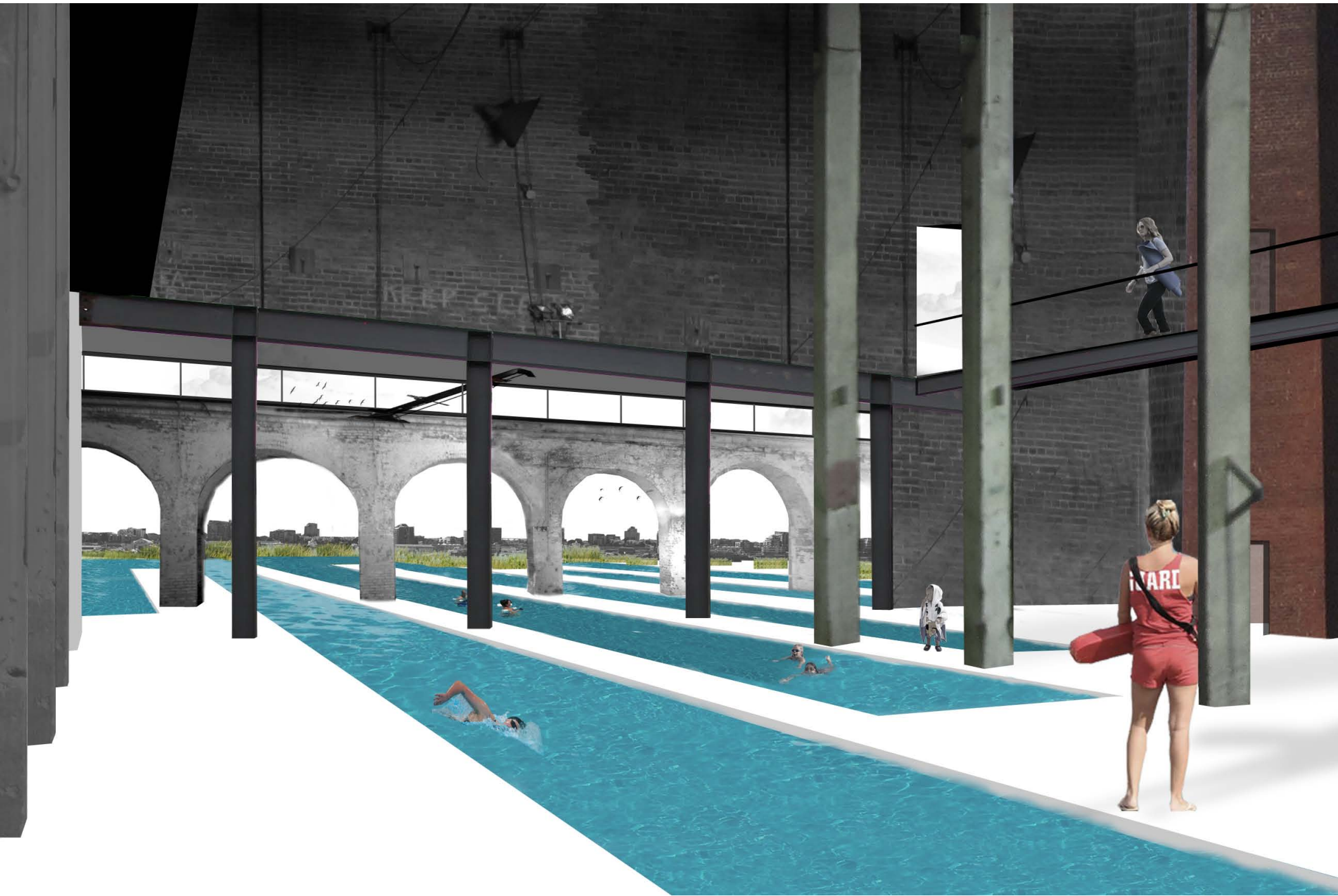


Figure 70: East-west section perspective through the powerhouse and linear lap pools



## POWERHOUSE - NEW INSERTIONS

The new inserted glass boxes utilize the large volume of space within the powerhouse and allow people to experience the space in a way not previously possible. New catwalks are added to those already existing, creating inhabitable spaces throughout the powerhouse and providing connections between programmatic spaces within the powerhouse facility.



## POWERHOUSE - LINEAR POOLS

The linear lap pools are the length and width of an Olympic swimming pool lane, serving a programmatic need for athletic swimming spaces, but they also respond to the existing seven arches on the powerhouse's west façade. The new linear pools celebrate these arches, where material was historically brought in and out of the structure. The linear language of the pools reflects the historic utilitarian flow of water on the site.

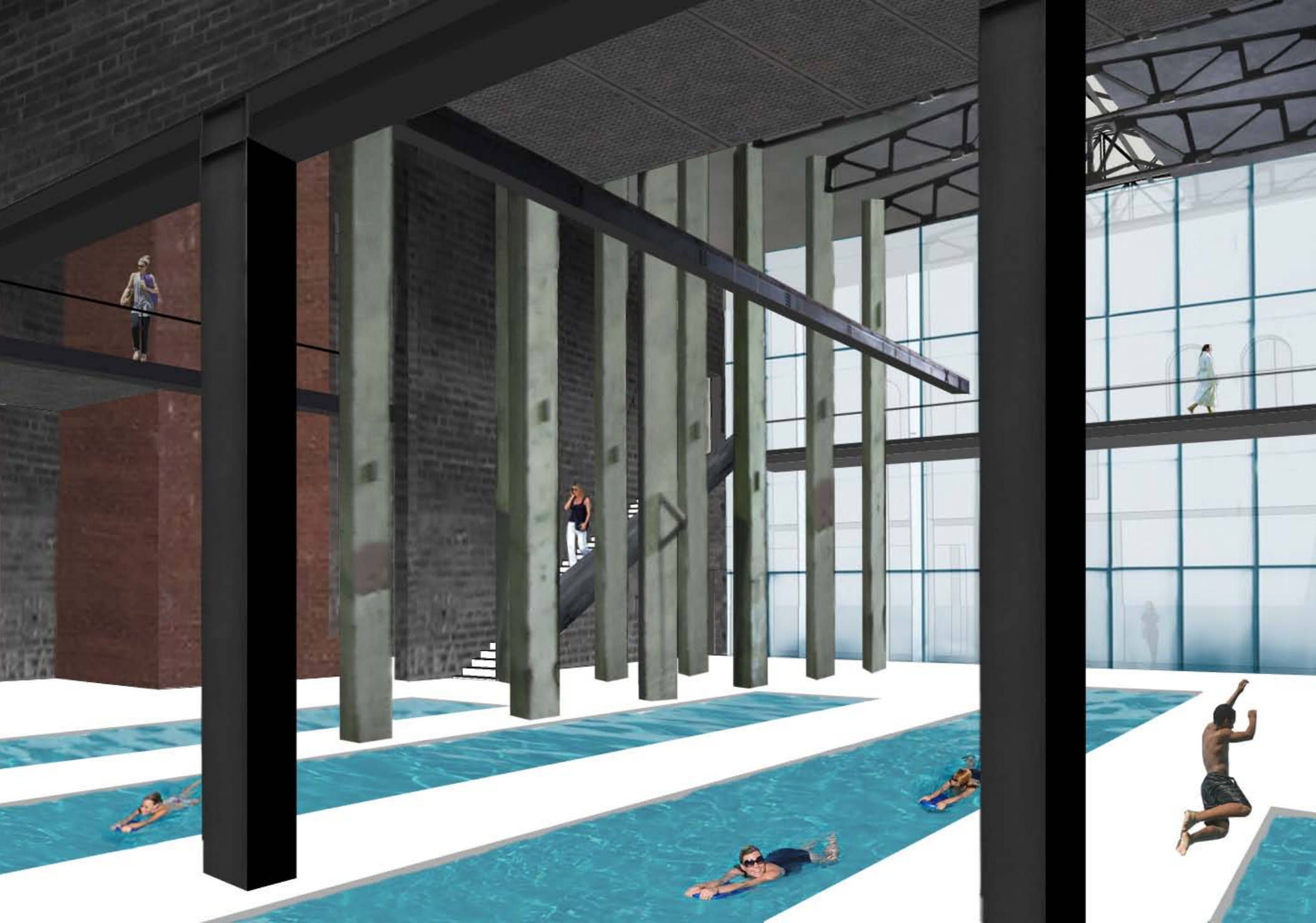


Figure 72: View of the linear lap pools, shower enclosure and smokestack within the powerhouse swimming facility

## POWERHOUSE - MATERIALS

The new clean-feeling steel and glass inserted spaces, such as the shower enclosure, contrast with the dirty existing powerhouse materials and allow light into the space. The contrast of new material to existing material is intentionally juxtaposed, highlighting the contrasts between new and old, as well as dirty and clean.

The smokestack is used as a steam room on the ground floor and a sauna on the second floor. These spaces allow people to inhabit an immensely dirty space within the powerhouse. A new wood lining as well as glass skylight keep the space clean enough to use, and are in contrast to the filthy masonry of the smokestack.

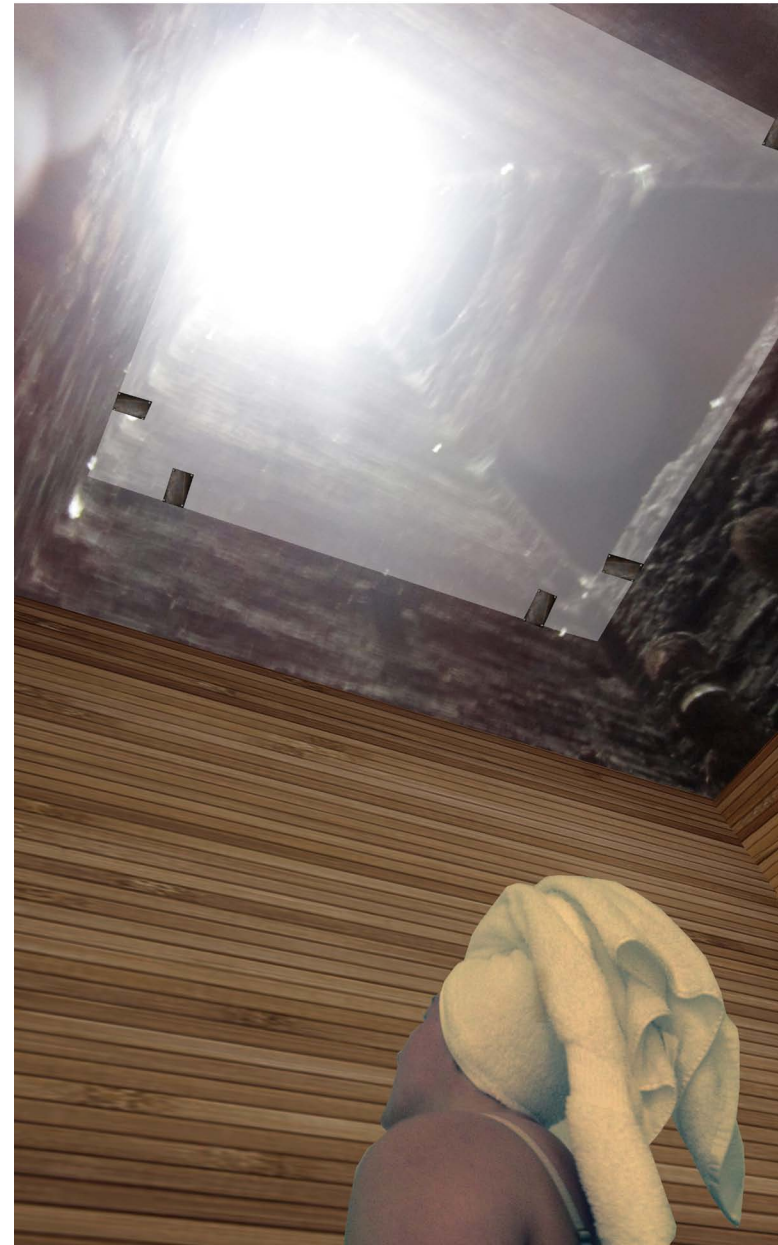


Figure 73: Sauna in smokestack



Figure 74:View of the second floor mezzanine workout room, which looks out toward Rock Bay

## POWERHOUSE - VIEWS

The second floor mezzanine workout room looks back into the main volume of the powerhouse, but also out, toward the pools as they flow into the bay. The glass and steel enclosure of the room also allows users to come in close contact with the historic structural members of the powerhouse, primarily the steel trusses and beam crane.



Figure 75:View from Rock Bay toward the shoreline pools, powerhouse and remediating mounds

## SITE RELATIONSHIPS

Recreational uses on the site spill out from inside to outside, but also have a larger connection on the harbor and within the city. Kayakers, paddleboarders, sailors and other small water craft use the site as a launch point to explore the rest of the city and its waterways. This connects people back to the site and allows them to see the site in its context. This creates an opportunity for the project to be a catalyst for other waterfront sites in the city to undertake remediation and transformation into public amenities.



Figure 76: Photo of Rock Bay, 2014

## CONCLUSION

Over the past few decades, urban waterfronts have seen a major shift from underutilized industrial terrain to public places transformed into amenities by the introduction of new activities. These post-industrial sites, because of their toxic state, often require remediation as well. These transformations create new design problems, as well as possibilities. Architects and landscape architects alike have the opportunity to beneficially influence remediation and reuse projects by providing new and innovative solutions, which are born of a respect for site history.

This thesis explores the idea of creating a role reversal for the polluted post-industrial site. Where a site once used natural resources in a constructed system, which resulted in the pollution of the city, the site can reverse its role and now clean the city through a constructed

system using natural material. Water becomes the key factor in the cleaning role of the site and the driving force behind the project's design. This thesis argues for a coordinated approach that addresses both landscape and building, rather than considering either in isolation. The interweaving of these is most evident in the way the site is planned to handle water, which can be cleaned to a sufficient degree to be used in swimming pools.

The focus of the thesis is on the reuse of leftover industrial sites, particularly those sites that have been heavily polluted. The thesis argues that although remediation is necessary to deal with toxins, sites like this should not be overly sanitized so that their history is lost. Thus for example, to the extent feasible, the powerhouse building and the other structures should retain their

patina. They should not be made to look like new. In fact not erasing the industrial patina will heighten the contrast between the existing and new transformations, enhancing the awareness of both.

In the Chapter “Toxic Memory” from Daniel Bluestone’s book *Buildings, Landscapes, and Memory: Case Studies in Historic Preservation*, he explains how “if former buildings and landscapes on Superfund sites were adapted to new uses and interpreted for the public, rather than being destroyed during redevelopment, we would retain an important material framework for better understanding both the sites themselves and their surrounding communities.”<sup>35</sup> The considered reuse of polluted sites can create a dialogue with users about not only a site’s past industrial use, but the relationship between the built and natural environment in the city.<sup>36</sup>

The architectural choices made in the project are therefore made based on an ethic of reuse and preservation,

introducing new uses and elements that recover key historical elements of the site and creating juxtapositions between new and old.

The result of these ideas is the provision of a new recreational space for the city of Victoria that will simultaneously introduce users to the possibilities of reuse, ideas of remediation, and the history of their own city.

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35 Daniel Bluestone. *Buildings, Landscapes and Memory: Case Studies in Historic Preservation*, (New York:W.W. Norton & Co., 2011), 257.

36 Bluestone, *Buildings, Landscapes and Memory*, 257.

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