Still Waters Run Deep:
Mobilizing Architecture through the Art of Quilting along the Lachine Canal

by

Ashleigh Elaine Abraham

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APPROVED/APPROUVÉ

Thesis Examiners/Examinateurs de thèse:

Shannon Bassett
(Thesis Advisor / Directeur(trice) de thèse)

Claire Weisz
(Thesis Second Reader / Deuxième lecteur(trice) de thèse)

Menna Agha
(External Examiner / Examinateur(trice) externe)

Approved for the Office of Graduate Studies
Approuvé pour le Bureau des études supérieures
Tammy Eger, PhD
Vice-President, Research (Office of Graduate Studies)
Vice-rectrice à la recherche (Bureau des études supérieures)

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Still Waters Run Deep

Mobilizing Architecture through th Art of Quilting along the Lachine Canal

Figure 1 *Approaching Lachine Canal lock #5, from the north east*

How may architecture mobilize water as an agent to contribute to community empowerment and stewardship?

Abstract

The nature of Montréal's relationship with water and the way it is used is a direct result of policies, technical decisions, and environmental transformation. *Through the greenifying of the post-industrial Lachine Canal as a National Heritage Park, critical histories of residents,* neighbourhoods, and industrial workers have been neglected. Only through oral histories have their narratives lived on, acknowledging a fraught yet rich and diverse history of Montréal's industrial era. Through the intersection of interdisciplinary theory and place-based investigation, this thesis explores how architecture might utilize water as an agent to challenge existing power structures to offer cultural inclusivity and stewardship. The craft of quilting is used as a methodology for employing oral histories and establishing a framework for equitable access to the Lachine Canal. The framework is applied to one of the canal's discarded industrial sites, addressing spatial injustices and opportunities for community engagement within the realm of public space.

Keywords: Water Heritage, Public Space, Deindustrialization, Eco-Gentrification, Oral Histories, Spatial Justice, Stewardship, Montréal

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I extend my sincere gratitude to the following individuals whose contributions have led me to complete my thesis research.

Figure 2 *Members of Union United Church sitting on the stage. Photograph by Graeme Clyke*

Acknowledgements

To Shannon Bassett, my thesis advisor: your guidance, intellect, support, and genuine passion for my research had set me on a trajectory I am proud and grateful to be moving towards, and one that I could have never imagined. To Claire Weisz, my second reader: for your insightful and refreshing feedback, whose own work has inspired my research.

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To my grandparents, Shirley and Marcus Durant: you have exemplified strength and grace in adversity, leaving a legacy of service and proud stewardship of your community. To my, Marcella-Lynne and Carl Abraham and my sister, Aleighsa Abraham: thank you for your never-ending support.

And finally, Montréal; my home away from home: my history, my teacher. Thank you.

Dedicated to my grandfather, Marcus Durant

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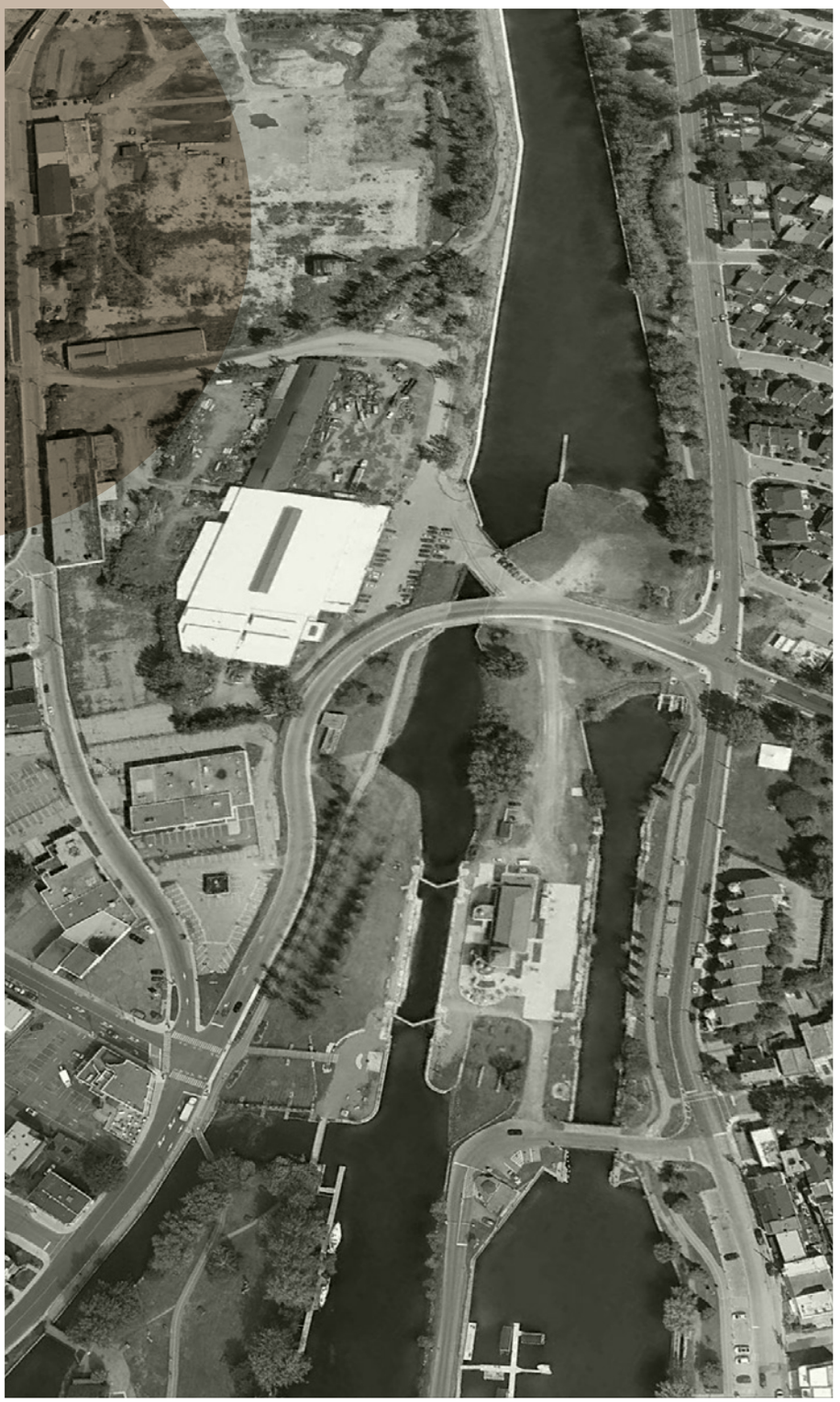

Figure 3 *Areal view of Lachine Canal ; Lachine Terminal, Lock #5 Google Earth Image August19, 2019*

Preface

This thesis was inspired by a walk along the Lachine Canal with my grandfather, during which we discussed the canal's history and the politics that shaped its current state.

My grandparents were born in Montréal to parents from the Caribbean Island of Barbados and witnessed the city's evolution firsthand. Oral histories were essential to their everyday lives. Offering insights into the history and experiences of a community that cannot be found in conventional records. These extraordinary tales included hardship and success, happiness and sorrow, frustration and perseverance.

My Grandmother, in her final years, never lost her sense of place. She would often refer to her "home" as her childhood home on Atwater Avenue, once known as the district of St. Antoine. Her home was no longer standing, and her neighbourhood was unrecognizable. Yet, her memories were as strong and as vivid as they were when she was a young girl. My Grandmother's home was expropriated and destroyed, and her family was forced to relocate to what would never feel quite like "home". Although displaced, she pressed on to maintain strong ties to the people and places she once frequented growing up.

My Grandparents may have been hindered but not defeated by their circumstances. They became leaders within their community, establishing connections to a community torn apart by people and structures who didn't understand their place within the urban fabric of the city.

Figure 4 *The tanker Eastern Shell departs Lock 5.*


EASTERN SHELL
TORONTO

Glossary

Adapt*:* allows contaminated water to enter spaces of cities and communities, prompting the built environment to cleanse the water within proximity to the point of use.[1]

Analytique: generative drawing, carefully composed and drawn to express a solution, emphasizing the relationship of the parts of the whole and details of the overall proportions.[2]

Anthropology*:* the study of the identity of place and how design translates human values into tangible experiences.

Contamination*:* an investigation of water as a medium of transferring unwanted matter.

Deindustrialization: social, economic, and environmental changes caused by the removal of industrial capacity in a region.

Ecological gentrification: the claim of positive environmental impacts in the context of development initiatives that have deleterious social impacts at the local level.[3]

Hybridity: cultural productivity that emerges on the margins of culture between cultures.[4]

Oral Histories: the collection of historical information through preserving and interpreting oral testimonies, memories, and objects of cultural commentary.

1 Seth McDowell, *Water Index: Design Strategies for Drought, Flooding and Contamination* (New York: University of Virginia, 2016).
2 Katie Kingery-Page, "The Post-Modern Analytique," 2009.
3 Claire-Gaelle Champagne et al., "Vert Le Nord, Urban Greening and Green Gentrification," Google Docs, 15 March 2023, https://docs.google.com/document/d/1lS6ql6gqMbFPzK6NjcPdA7uMmuS5Qz8yjVu41mdf5O4/edit?usp=sharing&usp=embed_facebook.
4 Felipe Hernández, *Bhabha for Architects*, (London: Routledge, 2010).

Glossary

Quilting: the craft of sourcing and assembling various materials by layering, stitching, and weaving to produce an object of value.

Skaniatará:ti*:* Kanien'kéha (Mohawk) meaning "across the river" is the place name for Lachine.[5]

Spatial Justice: the equitable distribution in the space of socially valued resources and opportunities.[6]

Tiohtià:ke: Kanien'kéha (Mohawk), meaning "broken in two," is the place name for Montréal.[7]

Stitching: *T*he repetition of piercing and binding simultaneously, both destroying and uniting. An integral process of "stitching" is looping or double backing, a metaphorical and literal mechanism of reflectivity. A progressive movement forward includes a backward movement allowing a space and a time for reflective thought.[8]

Water Heritage: the management and preservation of water environments linked to traditions, rituals, and narratives.

Weaving: a process and a structure. An abstract system that describes the universal co-existence of two axes of symbolic order.[9]

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5 "Montreal in Mohawk," *The Decolonial Atlas* (blog), 4 February 2015, https://decolonialatlas.wordpress.com/2015/02/04/montreal-in-mohawk/.

6 "Definitions," *The Spatial Justice Network* (blog), 11 June 2020, https://spatial-justice.org/definitions/.

7 Jordan Engel, "Montreal in Mohawk" The Decolonial Atlas (blog) 14 February, 2015, https://decolonialatlas.wordpress.com/2015/02/04/montreal-in-mohawk/.

8 Claire Pajaczkowska, "Making Know: The textiles Toolbox: Psychoanalysis of Nine Types of Textile Thinking," in *The Handbook of Textile Culture* ed. Janis Jefferies, Diana Wood Conroy, and Hazel Clark (London: Bloomsbury Academic, 2016), 85–86.

9 Pajaczkowska, "Making Know," 87.

“All water
has a perfect
memory and
is forever
trying to get
back to where
it was.”

-Toni Morrison

Introduction

Introduction

Cities are increasingly willing to revitalize brownfields in response to the growing densification in urban areas.[10] Designated as neglected and contaminated remnants of the industrial era, these sites are at the root of significant urban policy changes and are viewed as engines of utopian economic growth. In Canada alone, there are approximately 35,000 contaminated sites, most of which are in the urban centers of Montréal, Toronto, and Vancouver.[11]

To comprehend the value of repurposing brownfield sites, we can examine the island of Montréal and its historical significance as a once-prominent industrial center. In doing so, it is imperative to explore the history of the Lachine Canal, which catalyzed the city's ascent and demise as Canada's manufacturing center. Constructed in 1825, the canal's purpose was to allow transport vessels to bypass the Lachine Rapids, thus positioning Montréal as a port city with access to the Great Lakes Region. This helped to fortify the city as a primary point in the fur trade industry.[12] The canal was decommissioned in 1970 due to the opening of the St. Lawrence Seaway in 1959, which enabled the transportation of large ocean liners and created a direct connection from Montréal to the Atlantic Ocean and the Great Lakes Regions.[13] The Lachine Canal, being a much smaller artery, became obsolete due to the sheer volume and access the St. Lawrence Seaway could provide. The canal's closure initiated the city's deindustrialization, resulting in extensive social and economic restructuring due to the removal and reduction of manufacturing along the water's edge.[14] Many sites along the canal remain vacant, contaminated relics of a vanished industrial era, prompting the regeneration of the post-industrial landscapes.[15] Reviving these sites has brought to light issues of

10 Francesco Cappai et al., "Socio-Economic Indicators for the Ex-Post Evaluation of Brownfield Rehabilitation: A Case Study," *Urban Science* 2, no. 4 (2018): 100, https://doi.org/10.3390/urbansci2040100.as well as for improvement in the quality of life. The purpose of this article is to evaluate the main objectives and benefits of a rehabilitation project implemented in Canada. The rehabilitation of the brownfield site Lachine-Turcot-Petite Bourgogne in Montréal was analyzed according to four indicators (revenue, average cost of rent, rental usage, and home resale price

11 Cappai et al., "Socio-Economic Indicators for the Ex-Post Evaluation of Brownfield Rehabilitation."as well as for improvement in the quality of life. The purpose of this article is to evaluate the main objectives and benefits of a rehabilitation project implemented in Canada. The rehabilitation of the brownfield site Lachine-Turcot-Petite Bourgogne in Montréal was analyzed according to four indicators (revenue, average cost of rent, rental usage, and home resale price

12 Michèle Dagenais and Peter Feldstein, *Montreal, City of Water: An Environmental History*, *Nature, History, Society* (Vancouver, British Columbia: UBC Press, 2017).

13 Dagenais and Feldstein, *Montreal, City of Water*.

14 Desmond Blick and Pierre Gauthier, "Mobilising Urban Heritage to Counter the Commodification of Brownfield Landscapes: Lessons from Montréal's Lachine Canal," *Canadian Journal of Urban Research* 16, no. 1 (2007): 39–58.{\\i{}Canadian Journal of Urban Research} 16, no. 1 (2007

15 Steven High, "Green Gentrification: Race and Class Exclusion in an Urban National Park," *NiCHE* (blog), 20 October 2020, https://niche-canada.

environmental noxiousness, gentrification, and exclusionary practices enacted by structures of power. In understanding what has led to these issues, it is essential to acknowledge that the impacts of deindustrialization are not only economic in nature but have lasting environmental and social ramifications that must be addressed. This can be applied to Lachine-Est, one of the city's last industrial graveyards.

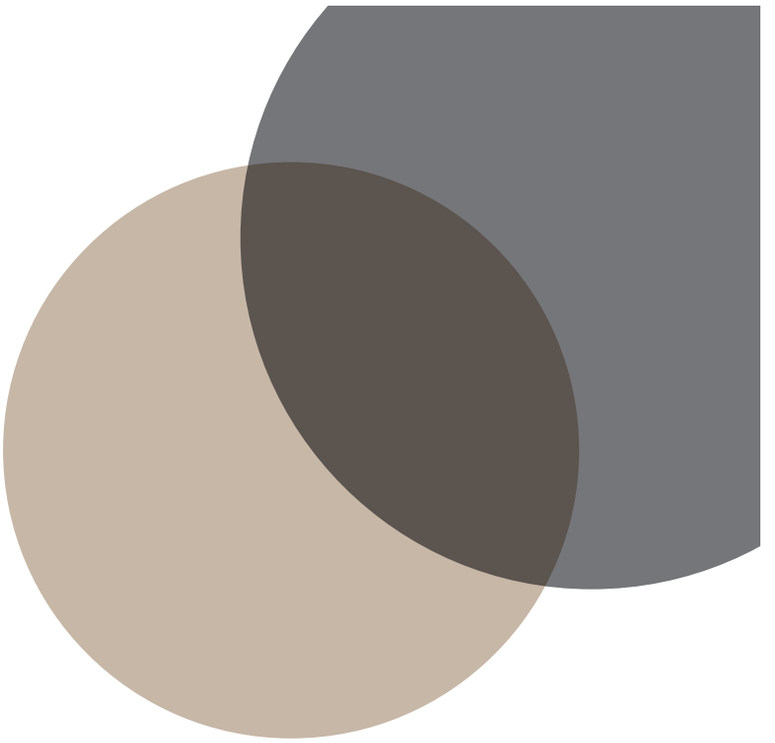
The city of Montréal considers Lachine-Est to be an area of strategic importance. Located along the southern base of the Lachine Canal, meters from the St. Lawrence River. The city plans to revitalize approximately 63 acres of the post-industrial landscape by proposing 7,200 new housing units and an array of urban renewal initiatives and infrastructural developments. Upon examining previous urban renewal endeavours along the canal, there exists a potential threat of gentrification in this community. With a population of approximately 21,400, known for its high rate of individuals living in low-income households, of which 45 % are immigrants,[16] the community's demographics and location make it a prime example of how the effects of deindustrialization create vulnerable communities. The boroughs of Point Saint-Charles and Little Burgundy are relevant examples of communities that have undergone similar revitalization initiatives and experienced transformation through gentrification.[17] Examining these neighbourhoods and the stark contrast in their experiences of the effects of deindustrialization provides insight into how race, class, language, and gender played a significant role in establishing the Lachine Canal as a historical symbol of Canadian prosperity and ingenuity. Through strategic planning and policies, the inauguration of the Lachine Canal as a National Historic Park exemplifies how offering greening initiatives for beautification without diverse input from residents, workers, and neighbourhoods can result in devastating consequences to the social fabric of vibrant communities with little means of defence.

In understanding the inner workings and structures of Montréal, we must

org/2020/10/20/green-gentrification-race-and-class-exclusion-in-an-urban-national-park/.

16 "Territories Served," Centraide of Greater Montreal, 7 December 2020, https://www.centraide-mtl.org/en/territories-served/.

17 Steven C. High, *Deindustrializing Montreal: Entangled Histories of Race, Residence, and Class*, Études d'histoire Du Québec = Studies on the History of Quebec 40 (Montreal: McGill-Queen's University Press, 2022).Residence, and Class}, \\uc0\\u201{}tudes d\\uc0\\u8217{}histoire Du Qu\\uc0\\u233{}bec = Studies on the History of Quebec\\uc0\\u8239{}; 40 (Montreal\\uc0\\u8239{}; McGill-Queen\\uc0\\u8217{}s University Press, 2022



consider the vital role water plays in the city's structural organization, policies, and prosperity. Water not only "carries political, cultural, social, and economic significance," it shapes our environments and defines our connection to a place; such is true in the evolution of the island of Montréal.[18] Through the years, water has served as a crucial means of defence, establishing settlement, navigation, and transportation. Indigenous communities perceive bodies of water as animate beings, sites of ceremonial significance, and arenas for asserting their autonomy and self-government. It is helpful to comprehend the historical relationships between Indigenous peoples, water, and waterscapes, as it offers an inclusive and dynamic expression not represented in the traditional practice of water heritage. Within indigenous communities, water heritage is synonymous with oral histories. The act of recounting oral stories pertaining to water highlights a certain detachment of cultural activities generally seen in traditional governance of water heritage, which is consequently linked to the impacts of colonialism.[19]

The waters of the Lachine Canal are contaminated due to years of effluent discarded by the industrial parks along the water's edge. Understanding contaminated water requires an understanding of various socio-economic issues. Questioning the relationships between water, place, and environment is crucial for determining who has access to water and how that contributes to the health and well-being of the communities it serves. How does water fit into policymaking, and how does it manifest in the context of class, gender, and other social identities? These questions are essential in determining how best to design for vulnerable communities. In regions already vulnerable to social and environmental stresses, such as Lachine-Est, the mismanagement of water can have devastating effects that can lead to poorly sourced neighbourhoods, forced displacement, and poor quality of housing.[20] These factors ultimately lead to more substantial social issues that negatively impact the growth and sustainability of communities.

When we consider access to water, we must first consider its quality. This thesis looks at water through the lens of contamination, seeing water as a medium of

18 Robert Barker and Richard Coutts, *Aquatecture: Buildings and Cities Designed to Live and Work with Water* (Newcastle upon Tyne: RIBA Publishing, 2016), 8.

19 Kenichi Matsui et al., "Indigenous Water Histories I: Recovering Oral Histories, Interpreting Indigenous Perspectives, and Revealing Hybrid Waterscapes," *Water History* 8, no. 4 (1 December 2016): 357–63, https://doi.org/10.1007/s12685-016-0184-8.

20 Ingrid Waldron, *There's Something in the Water: Environmental Racism in Indigenous and Black Communities* (Winnipeg: Fernwood Publishing, 2018).2018

transferring unwanted matter, and will examine how the city, the building, and the landscape are structured to maintain and improve water quality.[21] In this thesis, providing clean water is seen as a design problem that socio-economic policy must parallel; however, it is ultimately the physical environment that contributes to water quality.[22]

Looking to the three-fold design theory and approach: to defend, retreat, and adapt, laid out in Seth McDowell's Water Index,[23] this research examines the intersection of water contamination and the built environment through the lens of adapting; to allowing contaminated water to enter spaces and communities, prompting the built environment to cleanse the water within proximity of the point of use.[24]

The objective is to examine contextual situations such as industrial waste, bacterial sewage, urbanization, and water management, along with looking at the participants in the process, such as the various tiers of government, to provide pragmatic solutions to clean water for leisure activities, agriculture, and to mitigate social and economic inequities of vulnerable communities. This thesis aims to highlight the overlapping of architecture, urbanism, landscape, and social responsibility, encompassing long-term thinking and design solutions that are pragmatic, poetic, and environmentally responsible. This will be achieved through critical theory, anthropology, and pedagogy. The thesis will explore the effects of deindustrialization along the Lachine Canal to challenge power structures and to further understand the policies and stakeholders that significantly impact the deindustrialized communities. The framework will examine ways in which the natural and built environments shape the individuals within communities and unfold future-oriented and ecological visions that radically oppose ideologies of neoliberalism that encourage gentrification in the post-industrial landscapes.

The theoretical framework and methodology of this thesis is directed by two research questions: In what capacity can oral histories transform the discipline of

21 McDowell, *Water Index: Design Strategies for Drought, Flooding and Contamination.*
22 McDowell, *Water Index: Design Strategies for Drought, Flooding and Contamination.*
23 McDowell, *Water Index: Design Strategies for Drought, Flooding and Contamination.*
24 McDowell, *Water Index: Design Strategies for Drought, Flooding and Contamination.*

Figure 5 *Areial Map of Montréal*

Figure 6 *Map of Montréal's Indigenous Territory*

architecture? and How may architecture mobilize water as an agent to contribute to community empowerment and stewardship? To carry out this research, this thesis uses the theories and practices of oral histories and quilting to conduct varying degrees of site analysis. The place of oral history within the histography of modern architecture has yet to be entirely accepted, understood, or theorized.[25] A more extensive discussion is needed to address the epistemological politics of architectural historiographies; however, this thesis addresses the function of oral histories and how they facilitate cultural inclusivity and equitable stewardship of public space as it relates to water heritage. Quilting, deemed "women's work," is generally undervalued as an art form and mirrors the perception of oral histories as a valid form of historical record, rendering both forms invisible. The use of quilting as a methodology has been a driving force in the research of this thesis, both in the theoretical and practical sense. Encompassing the theories of the craft that are emblematic of an object as culture, the practical techniques of quilting have blended with the architectural analysis of place, space, and user experience. The approach of site analysis for adaptive reuse projects is sometimes non-linear. It requires piecing and patching together information from various points in history, demonstrating not only a timeline of function and use but also a timeline of diverse experiences and transformations. The theories, craft, and techniques of quilting allowed for a holistic analysis: stitching and weaving together various experiences and histories of a place and function. This methodology also allows for a symbolic interconnection to narratives of tradition and ritual that tie water heritage to the past, present, and future.

Quilting links to Indigenous heritage and practice of oral history with those of Black immigrants and European settlers, all of whom have traversed and shared the land and water. Mapping will present social, cultural, community, and environmental data to visually compare research studies within the Montréal region

25 Janina Gosseye, Naomi Stead, and Deborah Van der Plaat, *Speaking of Buildings: Oral History in Architectural Research*, First Edition. (New York: Princeton Architectural Press, 2019), 16.

and landscapes occupying the Lachine Canal. Literature reviews of various sources in multi-disciplinary fields are conducted for a well-rounded investigation of factors affecting communities along the Lachine Canal. Precedents and case studies are investigated to explore sound methods of design and building practices to allow for practical and impactful programmatic choices and design interventions for the betterment of future communities. These methods are based on various sustainable measures to address climate challenges, mitigate gentrification, and serve the community's well-being and the natural environment.

This thesis imagines a design intervention that contributes to community empowerment and to strengthening socio-economic relations by establishing access to clean water in the post-industrial landscape of the Lachine Canal. First, a water filtration system will be designed to generate clean water from the site and to the canal, establishing a performative waterscape, and contributing to an ecosystem that has been long forgotten. A master plan for the waterfront will incorporate pedestrian paths and various stations for leisure activities. The site will also serve as a community hub to acknowledge the history of the community and an education center for ecological literacy in maintaining clean waterways. Second, this thesis will utilize the methodology of oral histories through quilting to bridge and highlight the complexities of social exclusion as an effect of deindustrialization. The design of a bathing space will be introduced within the site to symbolize water as activism. Establishing clean water free from contaminants will allow the community to engage water and the canal's history physically.

This thesis highlights the intersection of water and deindustrialization of the Lachine Canal in a sensitive and impactful way through architectural interventions. Divided into three parts, this thesis will explore the varying factors that make the site unique.

Part One—"Land and Water"—frames the historical context of the Lachine Canal against the backdrop of a burgeoning city on the precipice of historic economic, political, and social growth while examining its relationship with its residents and

the Indigenous peoples of the island. This section explores the construction of the canal and its functionality as a means of transportation and hydraulic power, followed by its decommission and move to obsolescence. Examining the history of the Lachine Canal as a National Heritage site and Public Park, this section looks to reconcile the exclusionary practices of the past and present and what steps are being taken to make the site more inclusive from the perspective of culture, history, and physical access. This section also looks at the impacts of the Lachine Canal as a post-industrial place of recreation, examining its contamination, the measures taken to address the ecological ramifications of its industrial past, and the implication of those measures today.

Part Two—"People and Place"—explores relationships and histories of the lives intertwoven with the deindustrialization of the Lachine Canal. This section examines the neighbourhoods of Little Burgundy and Point Saint-Charles as case studies, exploring the issues of race, class, and gender along the canal. Lessons are extracted from the case studies to further understand the influence of community involvement and how neglected community engagement and a lack of community mobilization can have a devastating impact on communities experiencing state-led urban initiatives. Utilizing oral history and the craft of quilting as a methodology, this section explores various ways to bring light to invisible histories neglected through deindustrialization and state-led greening initiatives.

Part Three—"Water as Agent"—confronts adaptive strategies and methods to use water as an actor for community involvement, sustainability, and stewardship. This section examines case studies in architecture, landscape, and urban design models of public space and stewardship to promote active and inclusive experiences in the public realm to counter the negative impacts of eco-gentrification in an urban setting. This is proposed by offering an architectural intervention that embraces oral histories and uses them as pedagogy, which offers a method for invisible stories to be told and retold to ensure a more inclusive, transparent history of the industrial era that includes as many of its facets as possible.

Still Waters Run Deep

Part One: Land and Water

Figure 7 *Aerial Map of Montréal and its adjacent waterways*

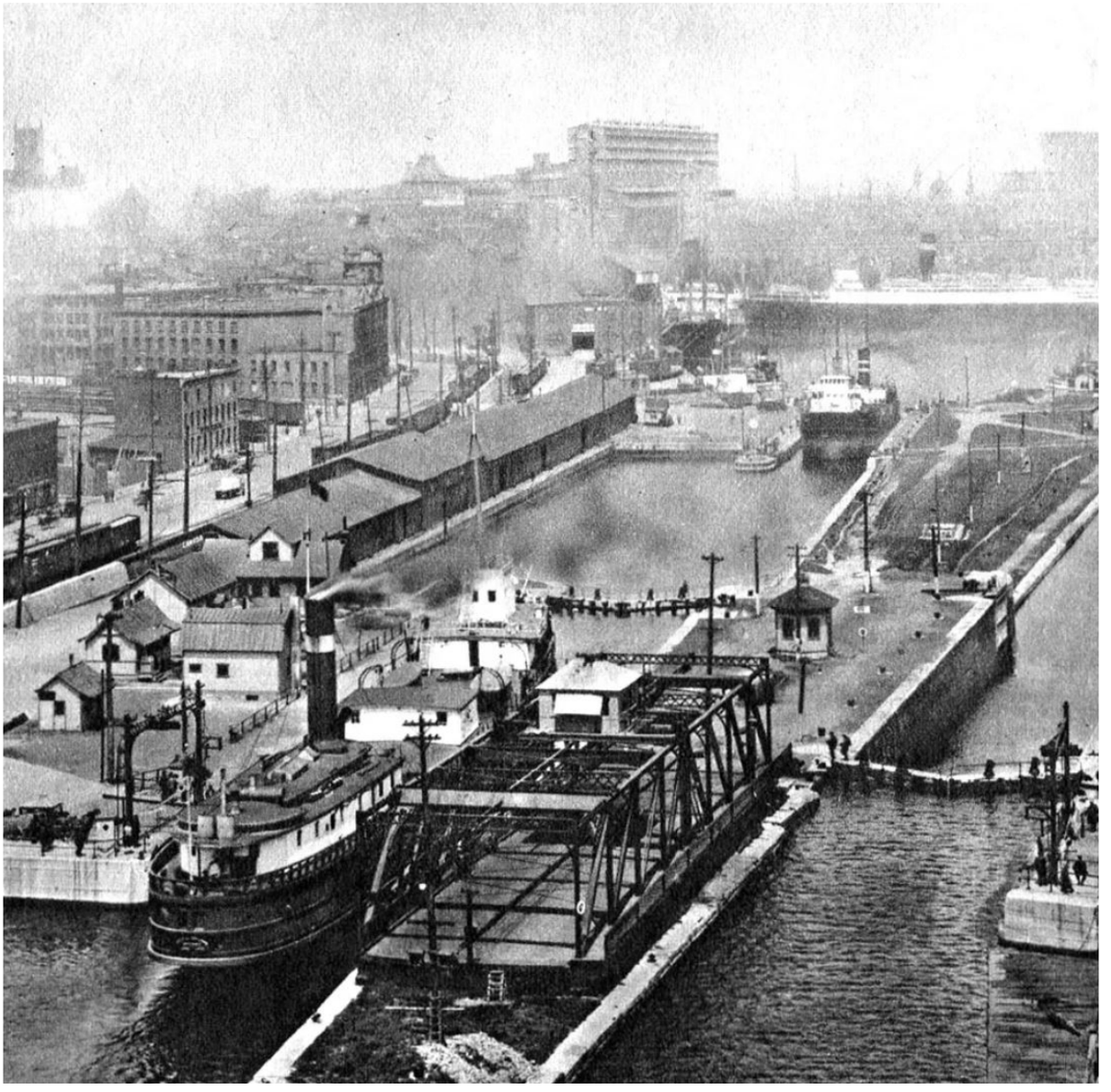
1.1

Lachine Canal

In 1832, Montréal was incorporated as a city, establishing itself as a major industrial player with the construction of the Lachine Canal in 1830. The city, also known as Tiohtiá:ke, is located on the ancestral land of the Kanien'kehà:ka people. The city is historically known as neutral ground for intertribal gatherings and trade, hosting various First Nations communities such as the Kanien'kehá:ka of the Haudenosaunee Confederacy, Huron-Wendat, Abenaki, and Anishinaabeg. The Kanien'kehà:ka people are acknowledged as the traditional caretakers of the territories and bodies of water upon which the city of Montréal is located.[26]
The historical relationship between Indigenous peoples and the construction of the Lachine Canal is rooted in tension and conflict, which reflects the effects of colonialism. This includes land appropriation, resource extraction, and displacement.
The concept of constructing a canal to bypass the Lachine Rapids can be traced back to 1651, with the first attempts carried out by the Sulpicians, a community of diocesan clergymen established in Paris that exerted religious authority over Montréal from 1663 to 1854.[27] In actuality, two canals were constructed: Le Canal des Suplicien, and Canal Saint-Gabriel. The initial canal project was left unfinished, while the subsequent one was designed to facilitate the transportation of water to the Suplicien flour mills located in Ville-Marie.[28]
The first canal began construction in 1825 to transport commerce and trade. It was 13.4 kilometres long, 14.6 metres wide, and 1.4 metres in depth, and comprised eight locks, built to accommodate a 14-metre change in elevation, allowing for small flat-bottomed sailboats and barges drawn by horse along a towpath at the canal's edge.[29] The canal route followed the former Sulpician Canal for more than half of its length.[30] Various renovations to the canal were completed throughout its history, enlarging both its width and depth to accommodate a larger volume of transportation. Receiving its water supply from Lac Saint Louis, the canal

26 "Land Acknowledgement," Cultural and Indigenous Research in Counselling Psychology (CIRC), Accessed 29 April 2023, https://www.mcgill.ca/circ/land-acknowledgement.
27 "Sulpicians | The Canadian Encyclopedia," Accessed 2 May 2023, https://www.thecanadianencyclopedia.ca/en/article/sulpicians.
28 Pauline Desjardins, "From the Warehouses to the Canal By Rail ca. 1830: The Lachine Canal, Montreal, Quebec," *Northeast Historical Archaeology* 28, no. 1 (1999): 57–70, https://doi.org/10.22191/neha/vol28/iss1/5.
29 Brodeur Consultants and Grace Cheong. *Lachine-Est de Fer et D'acier*. Service de l'urbanisme et de la mobilité. Ville de Montréal, 2021, 20.
30 Brodeur Consultants and Grace Cheong. *Lachine-Est de Fer et D'acier*, 21.

Figure 8 *Montréal Lachine Canal ; Lock 2*



was constructed within a pre-existing lake and riverbed and above the natural water level, requiring the creation of embankments. Approximately 93% of the banks of the canal consist of walls, which are commonly found to be in a state of deterioration. The construction of the walls varies based on the specific segment and corresponding section. They are made of materials such as concrete, wood, armouring, and gabion.[31]

The reconstruction of the Lachine Canal from 1843 to 1848 created a new energy source by widening the canal and canalizing the water held back upstream of the locks. In the middle of the 19th century, when industrial production was being established in North America, the Lachine Canal enabled the availability of hydraulic power in Montréal. It is one of the many factors that allowed the city to transition from a trading centre to an industrial powerhouse, putting it ahead of other Canadian cities.[32]

Over 600 businesses once lined the canal's edge, providing the city with significant economic growth and generating an increase in population. During the early 1900s, women were a part of its workforce, primarily employed in industries such as garment, textile, leather, and tobacco. Following the draft of World War I in 1917, women were employed in ironworks and transportation equipment factories, such as Dominion Bridge, Canadian Car and Foundry, and Grand Trunk Railway Shops. These positions required high levels of accuracy and precision, roles previously deemed too physically or technically challenging for females. Following the end of the war in 1918, a significant number of female workers were terminated from their employment.[33] Indigenous people were known to be employed as highly skilled ironworkers. In 1886, the Dominion Bridge Company began construction of the Quebec Bridge across the St. Lawrence River, separating (Montréal) and Kanien'kehà:ka land from their community. In exchange for the use of Kahnawake's land, the Dominion Bridge Company offered to employ Mohawk

31 Canadian Environmental Assessment Agency, "Lachine Canal Decontamination Project Report," Québec: Bureau d'audiences publiques sur l'environnement (Hull, PQ: 1996),15.

32 Parks Canada Agency, "A Supplier of Hydraulic Power," 4 July 2019, https://parks.canada.ca/lhn-nhs/qc/canallachine/culture/histoire-history/hydraulique-hydraulic.

33 Parks Canada Agency, "The Impact of Women on Economic Development," 8 March 2019, https://parks.canada.ca/lhn-nhs/qc/canallachine/culture/histoire-history/femme-impact-women.

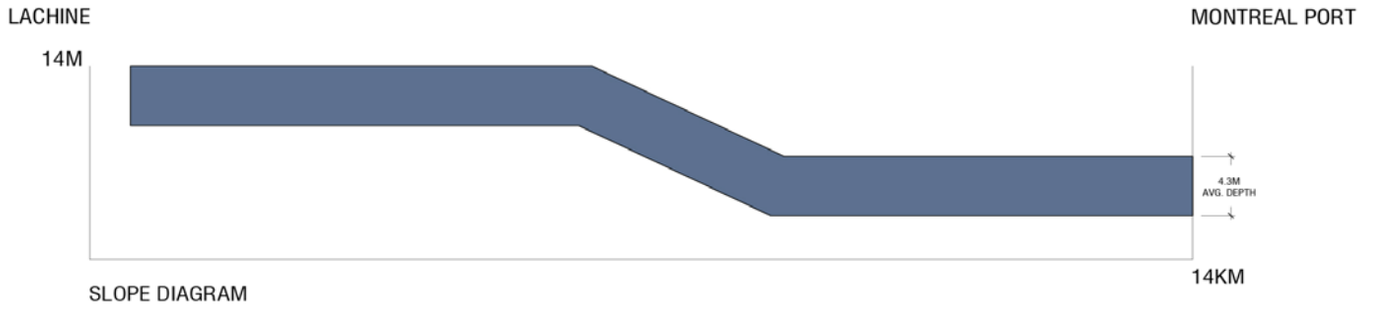


Figure 9 *Slope diagram of the Lachine Canal*

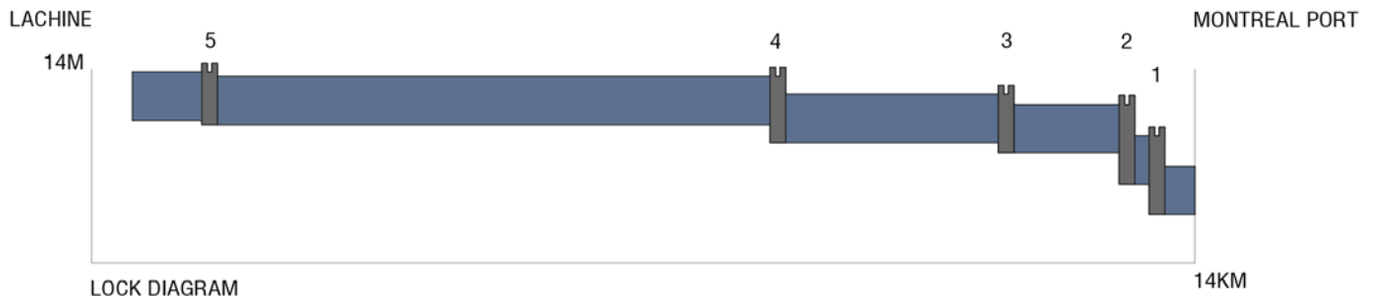


Figure 10 *Lock Diagram of the Lachine Canal*

people as ironworkers. The company quickly observed that they were exceptionally skilled at working at such great heights and incentivized the high-risk work with increased wages.[34]

The construction of the St. Lawrence Seaway followed in 1959, ultimately leading to the canal's closure. The St. Lawrence Seaway extended navigation networks beyond the canal's capabilities, providing access to over 100 Canadian and American ports, branded the "Highway H_20" due to its ability to transport tremendous cargo.[35]

The canal was officially closed in 1970, which marked the beginning of the deindustrialized era of the canal, a time marked by economic uncertainty, political crisis, and significant disparities between race and class.

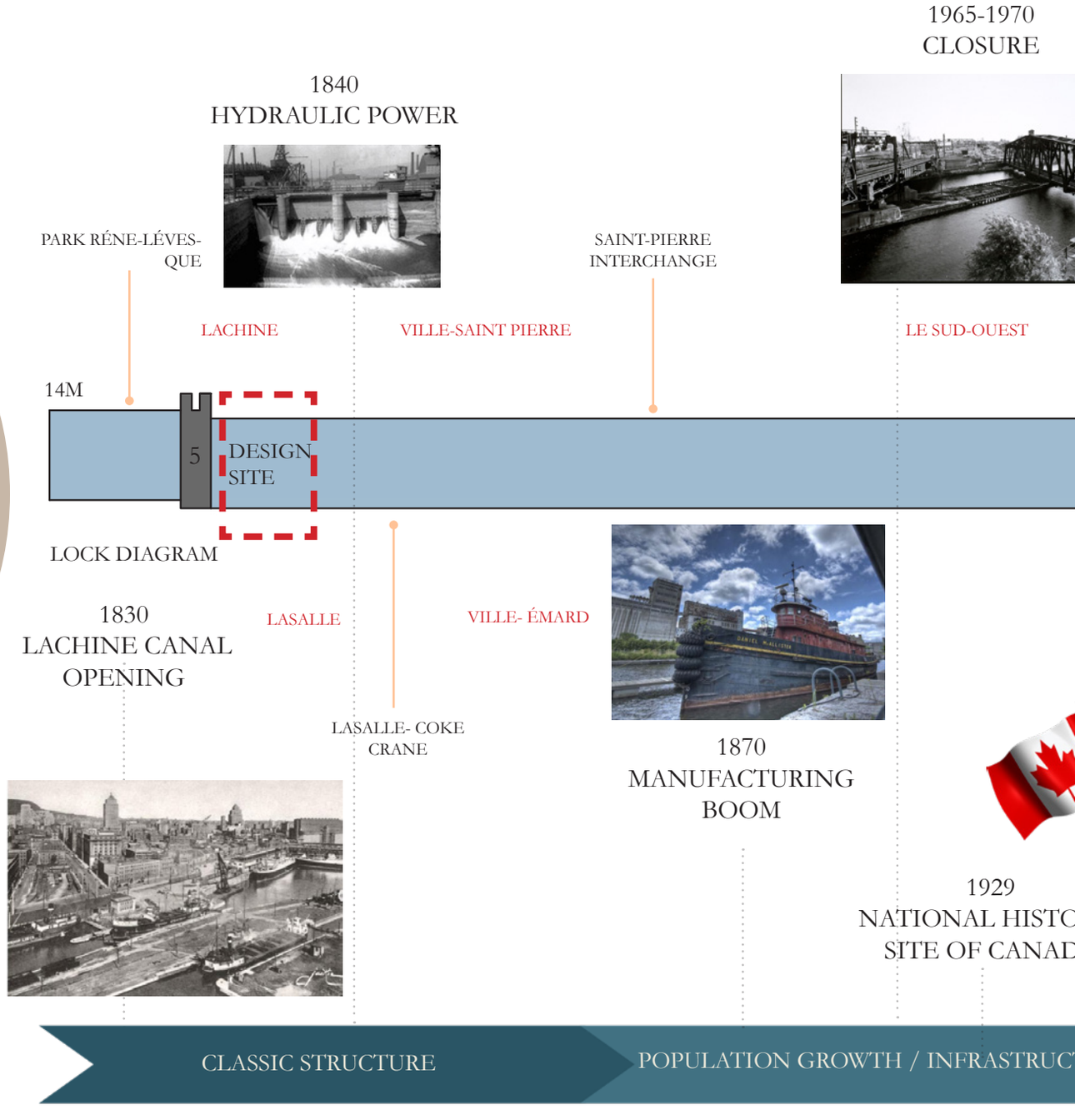
Since 1978, the Lachine Canal has been under the management of Parks Canada. The canal primarily serves as a national historical site with the aim of commemorating the significance of shipping, canalization, and industrial success. Since 1997, several tens of millions of dollars have been infused by governmental entities, community groups, and private enterprises. The allocation of these funds was primarily directed towards a large-scale revitalization initiative with the aim of rejuvenating the site with multi-purpose paths that facilitate the exploration of a unique historical landscape by millions of users.[36]

34 "Why the Mohawks Are No Longer Walking the High Steel," *The Globe and Mail*, 23 August 2013, https://www.theglobeandmail.com/news/national/why-the-mohawks-are-no-longer-walking-the-high-steel/article13941326/.

35 Ibañez et al., "Third Coast Atlas Prelude to a Plan."

36 Parks Canada Agency, "The Course of History," 20 March 2018, https://parks.canada.ca/lhn-nhs/qc/canallachine/culture/histoire-history/histoire-history.

Figure 11 *Historic Timeline of the Lachine Canal*



970
URE

GADBOIS RECREATION COMPLEX

ATWATER MARKET

1996
DECONTAMINATION PROJECT

2022
DEVELOPING FOR THE FUTURE

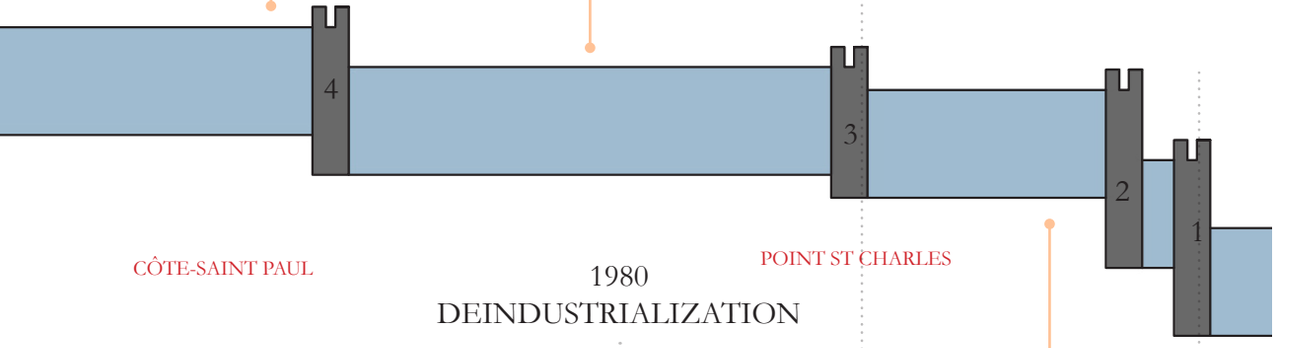
EST

SAINT-HENRI

LITTLE BURGUNDY

GRIFFINTOWN

VILLE MARIE



CÔTE-SAINT PAUL

1980
DEINDUSTRIALIZATION

POINT ST CHARLES

PEEL BASIN

14 KM

29
HISTORIC
CANADA

1976
PARTI QUEBECOIS

2002
RE-OPENING

STRUCTURE | CRISIS OF SOVEREIGNTY | REORGANIZATION / DEVELOPMENT

Figure 12 *Canadian National Heritage Site; Lachine Canal*

1.2

National Park

National Park

The Lachine Canal of the past, a relic of obsolescence, is unrecognizable today. Lined with pedestrian paths and cycling routes, it is a vibrant destination for active Montréalers and tourists alike. During the spring and summer, the pathways are a bustle of pedestrian traffic enjoying the atmosphere of a modern linear park, with dark murky water as the star attraction. A place once ravaged by abandonment, decay, and industrial waste has become a tranquil place of leisure and a beacon of Canadian accolades.

The government of Canada administers over 300 historical sites within every province and territory, including rural and remote Indigenous communities.[37] Designated as a National Historic Site of Canada in 1929 for connecting Montréal to the Atlantic Ocean, its heritage value lies in its design ingenuity and historic role in developing Canada's industrial era. Valued as a key elements of character, the canal offers a unique route and footprint, running through the heart of Montréal, with terminus points in Montréal's Old Port and at the mouth of Lake St. Louis. It also boasts proximity to rail and energy corridors that once served the industrial buildings that lined its edges.[38]

The administration of the Lachine Canal's upstream segment was entrusted to Parks Canada in 1974. The portion of Montréal's Old Port is overseen by the Ministry of Public Works and Government Services Canada. The objective of Parks Canada in 1979 was to devise a master plan to "preserve and develop a heritage resource."[39]

Outlined in the 2018 Lachine Canal National Historic Site of Canada Management Plan,[40] Parks Canada intends to provide visitors with a "truly Canadian experience."[41] The management plan includes mandates and four key strategies that intends to give the canal a strong character and a distinctive signature that is based on its historical ideals. Additionally, it emphasizes updating facilities

37 "Bill C-23: Historic Places of Canada Act," Accessed 18 March 2023, https://parks.canada.ca/lhn-nhs/loi-bill-c-23.
38 "Lachine Canal National Historic Site of Canada," Accessed 23 March 2023, https://www.pc.gc.ca/apps/dfhd/page_nhs_eng.aspx?id=627&i=58764.
39 Canadian Environnemental Assessment Agency, "Lachine Canal Decontamination Project Report," 6.
40 Parks Canada Agency, "Lachine Canal Management Plan - Lachine Canal National Historic Site of Canada Management Plan 2018," 21 March 2022, https://parks.canada.ca/lhn-nhs/qc/canallachine/info/gestion-management/gestion-management-2018.
41 Parks Canada Agency, "Lachine Canal Management Plan," 1.

Figure 13 *Parks Canada Signage; Little Burgundy*

Figure 14 *Commemorative stone; list of various companies on site; St Henrie*

Figure 15 *Parks Canada Signage; Peel Basin*

Figure 16 *Parks Canada Signage: St. Henrie*

Figure 17 *Park Canada pedestrian path maps located along the canal*

and services, improving community integration, and utilizing the canal's urban setting to advertise Parks Canada's expertise and protected areas. On the surface, the strategies are commendable and well-intended, offering an enjoyable experience once achieved. However, one should ask what a "truly Canadian experience" entails. This is a bigger question and one that is debated across various fields of academia and dining tables across Canada. To offer a "truly Canadian experience," one must have a complete understanding of what it means to be Canadian. In today's reality, there is no single Canadian experience that can be replicated.
As Canada does not have comprehensive laws for the management of its Parks, in the writing of Bill c-23, Parks Canada has put forth a measure to regulate and modernize the protection and conservation of historical sites. Presented to Parliament on July 7, 2022, the bill offers definitions of what constitutes inclusion, sustainability, and transparency concerning Parks Canada. The following are their definitions:
Inclusion means measures that promote inclusive participation in the designation of diverse places, persons, and events of national historic significance or of national interest.
Sustainability means measures that set out the Government of Canada's leadership role in the conservation of federal historic places and establish common benchmarks for the stewardship of these places.
Transparency means measures that establish clear and consistent processes, and accessible public information about designations of places, persons, and events of national historic significance or of national interest and about federal historic places.[42]
The proposed Bill aims to facilitate transparent decision-making processes by granting Indigenous peoples a more prominent role in determining the classification of historical sites. Additionally, the Bill imposes obligations aimed at promoting the safeguarding and preservation of the heritage value of these sites.[43]
Through the lens of water heritage as it relates to the Lachine Canal as a National Historic Park, the principles of Indigenous nations should be considered at the

42 "Bill C-23: Historic Places of Canada Act."

43 'Department of Justice Government of Canada, 'Bill C-23: An Act Respecting Places, Persons and Events of National Historic Significance or National Interest, Archaeological Resources and Cultural and Natural Heritage', 8 June 2022, https://www.justice.gc.ca/eng/csj-sjc/pl/charter-charte/c23_1.html.Persons and Events of National Historic Significance or National Interest, Archaeological Resources and Cultural and Natural Heritage\\uc0\\u8217{}, 8 June 2022, https://www.justice.gc.ca/eng/csj-sjc/pl/charter-charte/c23_1.html.","plainCitation":"Department of Justice Government of Canada, 'Bill C-23: An Act Respecting Places, Persons and Events of National Historic Significance or National Interest, Archaeological Resources and Cultural and Natural Heritage', 8 June 2022, https://www.justice.gc.ca/eng/csj-sjc/pl/charter-charte/c23_1.html.","noteIndex":43},"citationItems":[{"id":427,"uris":["http://zotero.org/users/10643940/items/AZCQN47M"],"itemData":{"id":427,"type":"webpage","abstract":"Section 4.2 of the Department of Justice Act requires the Minister of Justice to prepare a Charter Statement for every government bill to help inform public and Parliamentary debate on government bills.","language":"eng","note":"Last Modified: 2022-10-24","title":"Bill C-23: An Act respecting places, persons and events of national historic significance or national interest, archaeological resources and cultural and natural heritage","title-short":"Bill C-23","URL":"https://www.justice.gc.ca/eng/csj-sjc/pl/charter-charte/c23_1.html","author":[{"family":"Government of Canada","given":"Department of Justice"}],"accessed":{"date-parts":[["2023",5,4]]},"issued":{"date-parts":[["2022",6,8]]}}}],"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}

Figure 18 *Pedestrian and cycling paths along the Lachine Canal; Monk Bridge*

Figure 19 *Public bench along pedestrian and cyling path; Ville St Pierre*

Figure 20 *Pedestrian and cycling path,improvised public space; Silo 5, St Henrie*

Figure 21 *Pedestrian foot bridge; LaSalle*

Figure 22 *Park Canada Signage, Lachine Lock #5*

Figure 23 *Recreational pathway along edge of Lachine Canal, LaSalle*

forefront of policy-making. Not only to oppose the uneven governance established by colonialism but to address ontological differences between Indigenous and colonial views on water heritage. Indigenous systems can be seen as dynamic legal orders that are founded in traditions that also adjust to modern circumstances. Although disputed by the colonial forms of governance, Indigenous peoples possess enduring knowledge of such water heritage through practice and oral history.[44]
"We respect not only the water we utilize, we respect the land around it because it feeds into the water. Traditionally our belief is that water is sacred to us and that we should treat it as such. We should always work hard at keeping it clean. And pray to our Creator to give us strength all the time to keep it clean. And over the years, we see industry move into our traditional territory. And everything that the industry does, which is manage water and different things. We've seen them take over. And sometimes we step aside too much with industry, so we see changing water forces." Indigenous Elder[45]

In taking steps toward more inclusive and transparent practices that include an Indigenous method of governance within the management of Parks Canada opens the opportunity for the potential to offer an authentic "Canadian experience.

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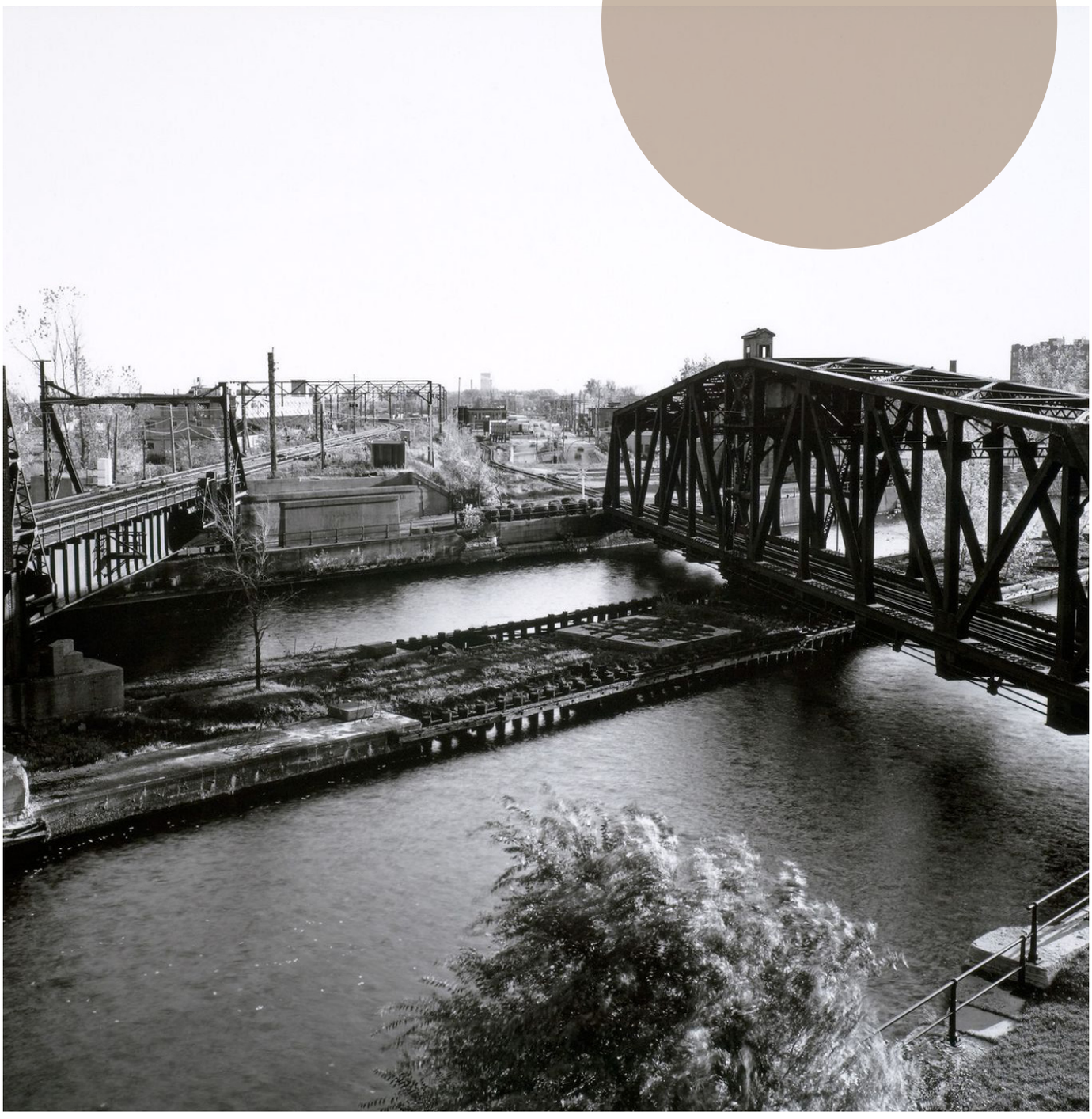
44 Nicole J Wilson and Jody Inkster, 'Respecting Water: Indigenous Water Governance, Ontologies, and the Politics of Kinship on the Ground', *Environment and Planning E: Nature and Space* 1, no. 4 (1 December 2018): 516–38, https://doi.org/10.1177/2514848618789378.no. 4 (1 December 2018

45 Wilson and Inkster, 'Respecting Water'.to which they have a sacred responsibility. Such a perspective frequently conflicts with settler societies? view of water as a ?resource? that can be owned, managed, and exploited. Although rarely articulated explicitly, water conflicts are rooted in ontological differences between Indigenous and settler views of water. Furthermore, the unequal water governance landscape created by settler colonialism has perpetuated the suppression of Indigenous ways of conceptualizing water. This paper thus examines the ?political ontology? of water by drawing on insights from the fields of critical Indigenous studies, post-humanism, and water governance. Additionally, we engage a case study of four Yukon First Nations (Carcross/Tagish, Kluane, Tr?ondëk Hwëch?in, and White River First Nations


TOWN OF
PARISH

Figure 24 *Lachine Canal; View of the Canadian National Port Bridge and Canadian National Wellington Bridge looking south from the control tower, Montréal, Québec. 1985*



1.3

Toxicity

Water Toxicity

Until 1988, over 252 industries along the Lachine Canal dispelled toxic materials into the water. Born as a commercial navigational artery, little consideration was given to the effects and impact of the effluent discharged into the waters. After reopening the canal for leisure, it was abruptly closed in 1982, due to a high level of contaminants that threatened public safety. At the height of the industrial boom, the toxicity of the Lachine Canal and its industries were of significant concern long before 1988. As early as 1908, concerns about the quality of water plagued the city as it overflowed into the St. Pierre River at two points, exacerbating the pollution and ultimately contributing to its conversion as a covered sewer main.[46] Materials included lead, chromium, nickel, copper, cadmium, mercury, and organic contaminants such as PAHs, MAHs, and PCBs.[47]

In 1996 the joint environmental assessment panel compiled a report on the decontamination of the Lachine Canal to provide measures and materials to dispose of contaminated sediment and to open the canal for recreational use. The report outlined the canal's hydrogeological environment, flora, and fauna, as well as its sediment contamination levels. Options were provided for decontamination, such as encapsulation of sediment on the banks and physio-chemical extraction.[48] Each option was outlined in detail and provided a cost to conduct and a timeline for the duration. The cost ranged from 6 million to 43 million and within the timeframe of 27 weeks to 2 years. One of the main concerns noted in the report was that there was a possibility of recontamination from the Old Port Connection, Rockfield overflow, Vezina and St. Patrick conduit, and the Lachine Basin.[49] It was determined that five sites were heavily contaminated, the Dominion Bridge and Cintube site being one of them. It was concluded that due to the high risk of recontamination, it did not warrant decontamination without reducing the primary sources of pollutants, specifically the Rockfield overflow and Vezina and St.

46 Dagenais and Feldstein, *Montreal, City of Water*, 81–83.
47 "Ghost River - Lachine Canal Contamination," Accessed 6 March 2023, https://ethnographylabconcordia.ca/ghostriver/.
48 Canadian Environmental Assessment Agency, "Lachine Canal Decontamination Project Report," 15.
49 Canadian Environmental Assessment Agency, "Lachine Canal Decontamination Project Report," 35.

Figure 25 *Winter low level water, Lachine Canal; Lock #4, Ville Emard By Author*

Figure 27 *The bottom of the lachine canal after it was drained for repairs on the canal walls in november 2018. photograph by Olivia du Vergier*

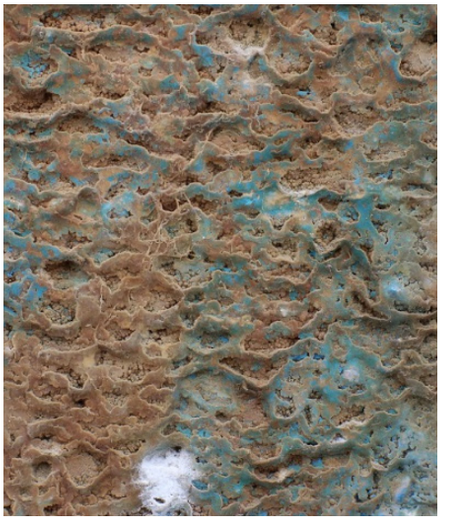


Figure 26 *The bottom of the lachine canal, November 2018, photograph by Olivia du Vergier*

Patrick conduit.
Discoveries from the assessment determined that the effect of such toxins in the water would be harmful if they came in contact with skin and eyes; prolonged exposure and contact could lead to much more severe health conditions. Due to these concerns, in 1982, the canal was closed to the public, and an investigation and report were requested on how the canal could be decontaminated for leisure use. Swimming was removed from the target plan, and the plan was focused solely on pleasure boating.
After several in-situ and ex-situ strategies were proposed to decontaminate the canal, the ultimate decision was to provide no intervention. The reasoning was that the activities of primary contact would be excluded. According to the report, the threat to human well-being was almost nil. It did not warrant the expense and possible aggravation of dormant toxic sediment at the bottom of the canal. Another concern was the high probability of re-contamination at various points along the canal, particularly that of Montréal's Old Port, which is managed by the province in comparison to the upper stream of the canal, which is overseen by Parks Canada.
In the end, the canal was reopened in 2002 for pleasure crafting, and a management plan with strategic implementation was issued to maintain and provide Canadians with a safe and pleasant park experience. In not moving forward with the decontamination strategies, access to the canal is limited, as a large part of water heritage is interaction and shared experience of water.
Bathing has historically been a communal activity, blending cultural rituals, architectural forms, and the natural environment. As post-industrial cities attempt to reclaim industrial waterways, public bathing is becoming urban infrastructure that connects histories of the past, present and future through the water.[50] The act of bathing is intrinsically linked to oral history and water heritage.
In limiting access to the adjacent neighbourhoods, oral histories and experiences are neglected. Bathing is a form of community interaction and a point of shared

50 Christie Pearson, *The Architecture of Bathing : Body, Landscape, Art* (Cambridge, Massachusetts: The MIT Press, 2020).

Figure 28 *Drained Lachine Canal at Lock #2; Montreal Old Port*

experiences and rituals. Offering the opportunity for bathing along the canal would solidify a multi-faceted experience and allow Canadians and visitors alike to engage with the canal and enhance water heritage.

Despite the risks of infection, there still was a strong desire to swim in the canal. Based on Quebec's Atlas of Water, the canal shows varying levels of toxicity with the water to this day. There is still prominent dumping taking place by industries, and several overflow outlets lead into the canal from the Jean R. Marcotte station, which is the city's main sewage plant. It has been common practice in Montréal to dump overflow from the sewage plant into the St. Lawrence River and the canal. In 2015, protests emerged because of the planned dumping of raw sewage into the St. Lawrence. From 2013 to 2018, over 900 billion litres of sewage were dumped into the St. Lawrence River.[51] In 2020, due to heavy rains, sewage from the Rockfield overflow outlet contaminated the water of Lachine Basin, prompting the marina's closure to protect visitors from illness due to high levels of fecal matter.[52]

If recent events, whether man-made or climate-induced, have proved anything, it is that the water system on the island of Montréal is fragile and requires care. Dagenais states that "improvement to the quality of waterways within Montréal and access to swimming can foster a sense of community, developing its social issues is a way of reaffirming value and use of public space."[53] This statement is a strong example of why water quality is so crucial to water heritage. In the case of the Lachine Canal, the history of the industry has prevailed, but how can the contributions of the individuals who came in daily contact with the water in some way be highlighted? How can their experience and oral histories be transmitted? These are factors to be considered and addressed in the architectural intervention.

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51 "Almost 900 Billion Litres of Raw Sewage Have Been Pumped into Canadian Waterways since 2013," CTV News, Accessed 24 March 2023, https://www.ctvnews.ca/canada/almost-900-billion-litres-of-raw-sewage-have-been-pumped-into-canadian-waterways-since-2013-1.4830586?cache=.

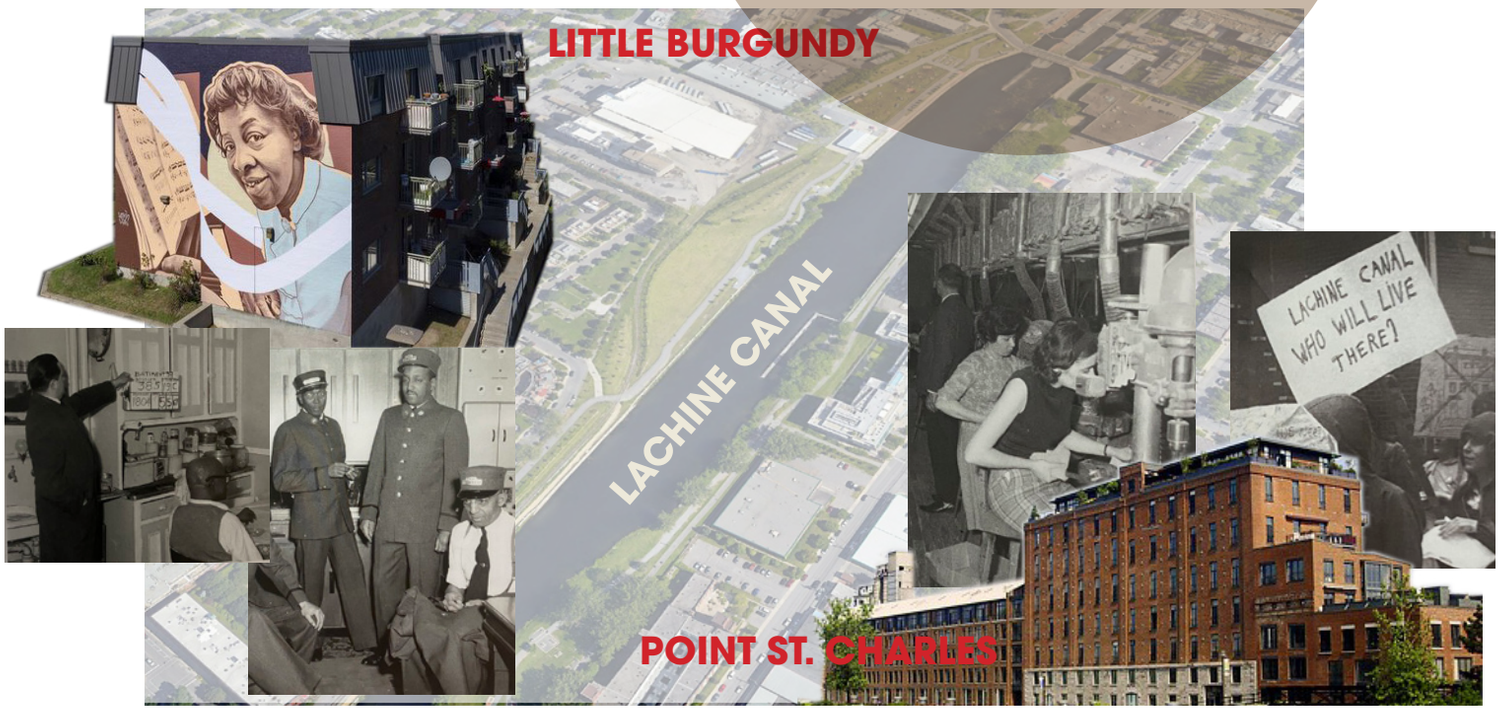
52 'Lachine Canal Water Access Suspended for 72 Hours Due to Contaminated Wastewater Overflow - Montreal | Globalnews.Ca', Global News, accessed 5 May 2023, https://globalnews.ca/news/7224834/lachine-canal-water-access-suspended/.

53 Dagenais and Feldstein, *Montreal, City of Water,* 164, 167.

Still Waters Run Deep

Part Two: People and Place

Figure 29 *Image collogae of Little Burgundy and Point St. Charles history and residents*



2.1

Deindustrialization

The transformation of the post-industrial canal under Parks Canada depicts an uplifting reflection of heritage that exemplifies the birthplace of industry and innovation. The regeneration of Montréal's landmark of industry provides the much-needed green infrastructure to facilitate the restoration and revitalization of the physical environments of the neighbourhoods that border the canal, lost to the abandonment of the industry.[54] However, in doing so, there have been profound consequences. Often in the case of deindustrialization, when industrial artifacts of obsolescence are converted and repurposed for modern-day uses, there are harmful impacts at the local level. In most cases, these impacts affect the social and economic structure of the adjacent neighbourhoods; this is defined as "gentrification"; however, where development is a greening initiative, this can be described as "ecological gentrification." Some level of eco-gentrification is involved in almost all greening urban renewal projects.[55] It is essential to acknowledge that the effects of gentrification are multi-faceted and can be categorized as direct and indirect effects. Direct displacement refers to evictions that occur as a result of larger community changes, whereas new-built housing on vacant land does not immediately displace residents. However, it may have unintended consequences, such as higher rents or the takeover of socio-cultural institutions.[56]
The policies and mandates of Parks Canada concerning the management of the Lachine Canal as a National Park have had specific impacts on the neighbouring

54 Steven High, *Deindustrializing Montreal: Entangled Histories of Race, Residence, and Class*,Residence, and Class}.","plainCitation":"High, Deindustrializing Montreal : Entangled Histories of Race, Residence, and Class.","dontUpdate":true,"noteIndex":54},"citationItems":[{"id":233,"uris":["http://zotero.org/users/10643940/items/KM9CL-5NZ"],"itemData":{"id":233,"type":"book","abstract":"\"Point Saint-Charles, a historically white working-class neighbourhood with a strong Irish and French presence, and Little Burgundy, a multiracial neighbourhood that is home to the city's English-speaking Black community, face each other across Montreal's Lachine Canal, once an artery around which work and industry in Montreal were clustered and by which these two communities were formed and divided. Deindustrializing Montreal challenges the deepening divergence of class and race analysis by recognizing the intimate relationship between capitalism, class struggles, and racial inequality. Fundamentally, deindustrialization is a process of physical and social ruination as well as part of a wider political project that leaves working-class communities impoverished and demoralized. The structural violence of capitalism occurs gradually and out of sight, but it doesn't play out the same for everyone. Point Saint-Charles was left to rot until it was revalorized by gentrification, whereas Little Burgundy was torn apart by urban renewal and highway construction. This historical divergence had profound consequences in how urban change has been experienced, understood, and remembered. Drawing extensive interviews, a massive and varied archive of imagery, and original photography by David Lewis into a complex chorus, Steven High brings these communities to life, tracing their history from their earliest years to their decline and their current reality. He extends the analysis of deindustrialization, often focused on single-industry towns, to cities that have seemingly made the post-industrial transition. The urban neighbourhood has never been a settled concept, and its apparent innocence masks considerable contestation, divergence, and change over time. Deindustrializing Montreal thinks critically about locality, revealing how heritage becomes an agent of gentrification, investigating how places like Little Burgundy and the Point acquire race and class identities, and quest ioning what is preserved and for whom.\"-- Provided by publisher.","collection-title":"Études d'histoire du Québec = Studies on the history of Quebec ; 40","event-place":"Montreal ;","ISBN":"978-0-228-01075-3","publisher":"McGill-Queen's University Press","publisher-place":"Montreal ;","title":"Deindustrializing Montreal : entangled histories of race, residence, and class","author":[{"family":"High","given":"Steven C."}],"issued":{"date-parts":[["2022"]]}}}],"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} (Montréal: McGill-Queen's University Press, 2022), 209.

55 Champagne et al., "Vert Le Nord, Urban Greening and Green Gentrification."

56 Amy Twigge-Molecey, 'Exploring Resident Experiences of Indirect Displacement in a Neighbourhood Undergoing Gentrification: The Case of Saint-Henri in Montréal', *Canadian Journal of Urban Research* 23, no. 1 (2014): 1–22.

Figure 30 *Little Burgundy Along the Canal*

communities. We can look to the neighbourhoods of Little Burgundy and Point Saint Charles as case studies on the effects of deindustrialization. Both neighbourhoods, located opposite one another on either side of the canal, experienced very different evolutions of gentrification due to the greenifying of the canal. Like the history of the Lachine Canal, the history of deindustrialization is complex and weaves together complex histories of race, language, class, and gender. As demonstrated through various scholarship, the deindustrialization of the Lachine Canal has been policy-driven and state-led by provincial and federal governing bodies, each with its own agenda.

Little Burgundy today is affectionately known for its soulful Jazz roots and a place of Black Canadian heritage. Before the renewal and rebranding, Little Burgundy was known as the St. Antoine district. Due to its proximity to the railroad, the neighbourhood attracted Black immigrants from the United States, the Caribbean, and Maritimes who moved to the area to secure jobs as sleeping car porters, redcaps, and dining cap servers, some of the only positions afforded to Black men at the time. In the 1960s, the name "Little Burgundy" was solidified after city officials adopted the name to describe their ambitious urban renewal project bordering the Lachine Canal. The urban revitalization initiative in Little Burgundy was effectively executed as a "bulldozer" operation, completely transforming the neighbourhood's social and physical landscape, making way for a new highway and accommodating new public housing.[57] Apart from generating deplorable living conditions, the refurbishment resulted in the displacement of a significant proportion of the neighbourhood's inhabitants. Families were forced from their homes and left to find housing in other parts of the city. The geographic displacement damaged and diminished Black-owned businesses and their link to the community. The remaining individuals were concentrated within the designated areas commonly referred to as "ghettos." It was only years later, when the neighbourhood had been renewed with the highest concentration of public housing in the province and

57 Steven High, "Little Burgundy: The Interwoven Histories of Race, Residence, and Work in Twentieth-Century Montreal," *Urban History Review* 46, no. 1 (2017): 23–44, https://doi.org/10.7202/1059112ar.

Figure 32 *Little Burgundy Parket along Lachine Canal*

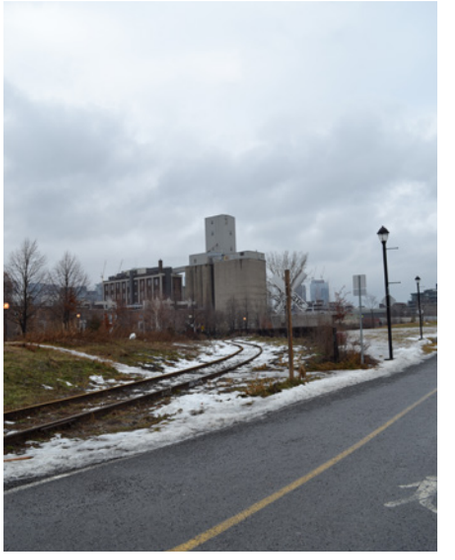


Figure 33 *Remnants of railway tracks and industrial building in Little Burgundy, pathway along Lachine Canal*

Figure 31 *St Gabriel Lock #3, looking toward Point St Charles*

experienced high levels of crime and drug use, that it was recognized and celebrated for its contributions to Canadian Jazz Music and as an emblem of Black Canadian history. It is important to recognize with empirical evidence from newspapers articles and reports in the years leading up to the renewal project that the district of St. Antoine was not publicly represented as a racialized neighbourhood but one of a majority white, French-speaking residences, with poverty attributed to disparities between the English and French.[58] Like in many urban centres, ghettoization is complex and intricately woven with histories of race, labour, and residence. Associating the post-renewal Little Burgundy with a "ghetto" carries various racial connotations, which cannot be overlooked. Until the 1960s, there were very few references to Blacks in Quebec's historical documents; Blacks remained "an invisible population" in Montréal, with the exception of early slave records.[59] Through various oral histories and archival records, the history of Blacks in Montréal has been stitched and pieced together, defining a complex yet relatively unknown Canadian experience.

When comparing Little Burgundy and Point St. Charles, it is evident how tremendously differently they experienced gentrification. Little Burgundy was described as a neighbourhood that had experienced defeat, in contrast to the successful activism that took place in Point Saint-Charles. Notably linked to place-based activism, Point Saint-Charles served as the site for establishing several pioneering initiatives, including the inaugural community health clinic, community legal aid clinic, housing co-operative, and community economic development corporation.[60] Since 1978 the neighbourhood has successfully fought

58 High, "Little Burgundy."

59 Dorothy W. Williams, *Blacks in Montreal, 1628–1986: An Urban Demography* (Cowansville, Quebec: Éditions Yvon Blais, 1989).

60 High, *Deindustrializing Montreal*Residence, and Class}.","plainCitation":"High, Deindustrializing Montreal : Entangled Histories of Race, Residence, and Class.","dontUpdate":true,"noteIndex":60},"citationItems":[{"id":233,"uris":["http://zotero.org/users/10643940/items/KM9CL5NZ"],"itemData":{"id":233,"type":"book","abstract":"\"Point Saint-Charles, a historically white working-class neighbourhood with a strong Irish and French presence, and Little Burgundy, a multiracial neighbourhood that is home to the city's English-speaking Black community, face each other across Montreal's Lachine Canal, once an artery around which work and industry in Montreal were clustered and by which these two communities were formed and divided. Deindustrializing Montreal challenges the deepening divergence of class and race analysis by recognizing the intimate relationship between capitalism, class struggles, and racial inequality. Fundamentally, deindustrialization is a process of physical and social ruination as well as part of a wider political project that leaves working-class communities impoverished and demoralized. The structural violence of capitalism occurs gradually and out of sight, but it doesn't play out the same for everyone. Point Saint-Charles was left to rot until it was revalorized by gentrification, whereas Little Burgundy was torn apart by urban renewal and highway construction. This historical divergence had profound consequences in how urban change has been experienced, understood, and remembered. Drawing extensive interviews, a massive and varied archive of imagery, and original photography by David Lewis into a complex chorus, Steven High brings these communities to life, tracing their history from their earliest years to their decline and their current reality. He extends the analysis of deindustrialization, often focused on single-industry towns, to cities that have seemingly made the post-industrial transition. The urban neighbourhood has never been a settled concept, and its apparent innocence masks

Figure 34 Quilted Quartier- Point St Charles; Communitty engagment initiave

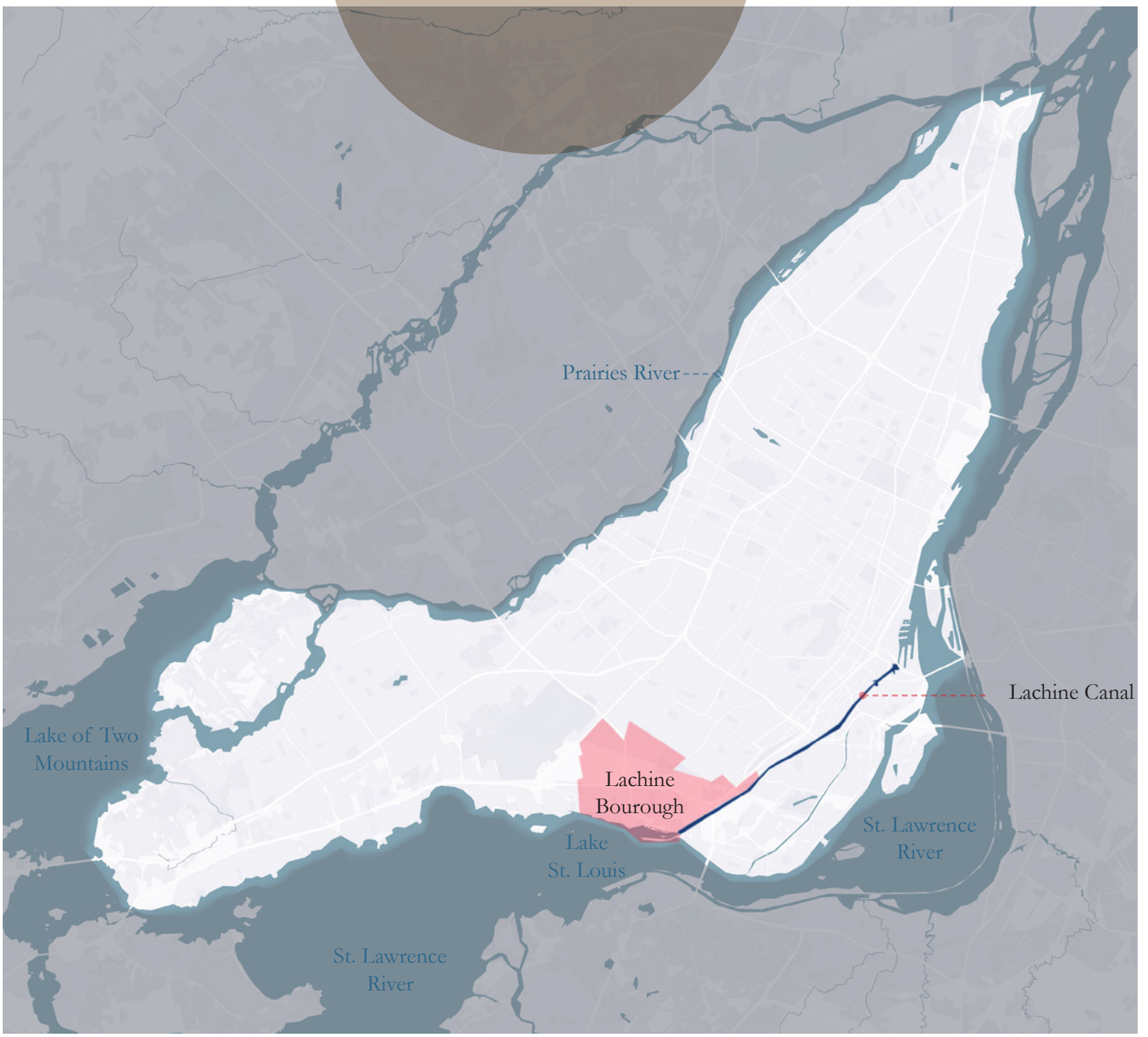
against various urban development projects that would have harmfully affected its community. Learning from the extreme consequence seen in Little Burgundy. Point Saint-Charles was able to mobilize its communities through worker unions and community activism at various scales. One way in which Point-Saint Charles has been to mobilize community engagement and activism is through crafting. Quilted Quartiers is a collaborative quilting initiative that emerged from the neighbourhoods and community spaces of Montréal. Each patch is designed by a distinct community member. The endeavour is influenced by the quilting tradition but transcends its norms and structures. The patches are created from found or donated materials, making them an upcycling and ecological restoration endeavour. Kay Noele, an artist who serves as the project's facilitator, assembles the patches that have been created individually or collaboratively by various members of the community. The final product is a map that accurately depicts how residents perceived and interact with their neighbourhoods and community spaces. Between 2014 and 2017, eight neighbourhood map quilts have been completed: Point Saint-Charles being one of them.[61]

Looking at the case studies of Little Burgundy and Point Saint-Charles, lessons in community mobilization and engagement can be taken and applied to neighbouring communities along the canal that are experiencing similar acts of revitalization.

considerable contestation, divergence, and change over time. Deindustrializing Montreal thinks critically about locality, revealing how heritage becomes an agent of gentrification, investigating how places like Little Burgundy and the Point acquire race and class identities, and quest ioning what is preserved and for whom.\"-- Provided by publisher.","collection-title":"Études d'histoire du Québec = Studies on the history of Quebec ; 40","event-place":"Montreal ;","ISBN":"978-0-228-01075-3","publisher":"McGill-Queen's University Press","publisher-place":"Montreal ;","title":"Deindustrializing Montreal : entangled histories of race, residence, and class","author":[{"family":"High","given":"Steven C."}],"issued":{"date-parts":[["2022"]]}}],"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} , 250.

61 "Quilts," Quilted/Quartier, Accessed 29 April 2023, https://www.quiltedquartier.com/quilts.html.

Figure 35 *Map of Montréal and its adjacent waterways*



2.2

Lachine-Est

Lachine-Est is named for its location along the eastern edge of the Borough of Lachine, one of Canada's oldest settlements, at the base of the Lachine Canal, where it meets Lac St. Louis.[62] Skaniatará:ti, meaning "Across the river," is the place name for Lachine by the Kanien'kéha people.[63]

The district is comprised of 63 hectares of industrial landscape and two residential and commercial enclaves. Its unique positioning at the intersection of Lac St. Louis and the Lachine Canal made it an ideal stopping point to avoid the Lachine Rapids, which proved to be a navigational obstacle for most vessels attempting to access the inlands of Ville-Marie. Historically, the district was frequented by Indigenous people, European settlers, and missionaries. In the early 20th century, Lachine-Est became Canada's most important industrial center dedicated to iron and steel, mainly manufacturing components for the transportation and construction industries. The district supplied steel for many notable bridges and buildings within Montréal and the Great Lakes Region. As a result of available work, the borough's population grew to 10,699 in 1911 and 20,051 in 1941, urbanizing the factories' landscape. During the 1920s and 1930s, residential and commercial development expanded north of the railroad, with immigration from Ireland, the United Kingdom, and Scotland.[64] "Lachine-Est was, by its location, a place of exchanges for millennia, a meeting point between various communities."[65] In the 1950s, companies began to automate production in order to increase output, resulting in a decline in employment along the canal corridor. The industrial decline of Lachine-Est began in 1969, with only the Dominion Bridge Company using the canal for navigation and to dispose of industrial waste. The district of Lachine-Est held on by changing operational hands until high maintenance costs forced closures. A large part of the population left the area in 1971, followed by several commercial enterprises. The population of Lachine declined from 51,220

62 C. Mathew Cyriac, *Lachine, with Love: The Story of a Montreal Suburb* (Lachine, Québec: C.M. Cyriac, 1982), 11.
63 "Montreal in Mohawk."
64 Brodeur Consultants and Grace Cheong, *Lachine-Est de Fer et D'acier*, Service de l'urbanisme et de la mobilité, (Ville de Montréal, 2021), 27–46.
65 Ville de Montréal. "L'écoquartier Lachine-Est, Programme Particulier d'urbanisme," (Septembre 2021), 2.

Demographics

Figure 36 *Data of residents living in Lachine -Est*

44,490
TOTAL POPULATION

20.6 % LOW INCOME PERSONS

25.2 % LOW INCOME CHILDREN AGE 0-5 YRS

23.8 % LOW INCOME SENIORS

57.3 % TENANT HOUSEHOLDS

33.2 % 30 % AND MORE OF INCOME FOR HOUSING

65.4%
FAMILIES WITH CHILDREN

39.4%
SENIORS LIVING ALONE

22.5%
IMMIGRANTS

24.1%
VISIBLE MINORITIES

in 1971 to 39,850 by 1986.[66] The loss of industry led to an upheaval in the social fabric and accentuated the poverty in the area.[67]

The district of Lachine-Est is the most densely populated in the borough of Lachine, with a population of 21,000, a rapidly growing immigrant population, and a recent influx of asylum-seeking migrants. Despite the neighbourhood's strength, it is a borough with one of the highest rates of low-income individuals and, on average, 41% more single-parent family households than Montréal. The community's five main initiatives within the district are access to healthy food, integrating vulnerable populations, improving living conditions, establishing community services and businesses, academic success, and socio-professional integration.[68]

It has been reported that 47% of the population of Lachine-Est are household renters, 42 % of whom have moved in within the last five years. One of the significant concerns within the district is that 34% of children begin kindergarten without basic school skills, which is well above the average rate on the island. Due to the influx of asylum-seeking migrants and new immigrants, various stakeholders and organizational groups are working to improve the connection to different ethnocultural communities to ensure people feel at home within the neighbourhood and develop methods to reduce poverty and social exclusion in what is deemed as a "ghettoized area."[69]

The term "ghettoized" is utilized by Montréal's social aid organization to describe Lachine-Est and its high concentration of poverty.[70] One could also easily correlate "ghettoization" with the connection to the district's ethnic-cultured populations based on the data assembled by Centraid and Lachine-Est immigration profile, published in January 2020 by Table de Réflexion d'Action Interculturelle de Lachine (TRAIL). The report summarized the rapid growth of the immigrant

66 Brodeur Consultants and Grace Cheong, *Lachine-Est de Ver et D'acier*, 49.
67 "Portait actualisé de l'immigration dans l'arrondissement de Lachine," Table de réflexion d'action Interculturelle de Lachine, Centraide du Grand Montréal, January 2020.
68 "Lachine, The Territory, and its Population," Centraide of Greater Montréal, Territorial Analysis 2019–2020, 1.
69 "Lachine, The Territory, and its Population," 2.
70 "Lachine, The Territory, and its Population," 3.

Figure 37 *Land use diagram. Lachine -Est*

and asylum-seeking population within the Lachine-Est district, particularly from the African continent. The report highlights the lack of adequate local services to meet the social-economic needs of immigrants to establish themselves and promote sustainable and "successful" community "integration". Important factors needing to be addressed are primary and secondary education, linguistics, living conditions, affordable housing, food insecurity, cultural identity, and systemic structural barriers that promote exclusion, racism, and discrimination.[71]

Considering Montréal's 2030 Strategic Plan and the objectives of the United Nations 2030 Agenda, the city of Montréal plans to transform the district of Lachine-Est over the next 20 years from its current state as an industrial graveyard to a revitalized "eco-district." The city aims to integrate green infrastructure, soft mobility, and public transportation emblematic of the industrial heritage while achieving equity, inclusion, and creative participation to combat climate change, preserve biodiversity, and promote urban resilience.[72] The designation of Lachine-Est as Montréal's first "eco-district" is part of an experimentation coined as a "laboratory sector" by the city's Charter of Eco Districts, which carries out pilot projects.[73]

Within the 63 acres of the post-industrial landscape of Lachine-Est, this thesis will focus on the site once home to the Dominion Bridge Company. Located at the edge of the canal where of Saint-Joseph Boulevard, 6th Avenue, and the Chemin du Musée converge. The Dominion Bridge complex holds significant value for being the first manufacturing facility built in Lachine-Est, contributing to Canada's growth as an industrial power. Over the years, the company manufactured steel and iron for various bridges, buildings, railways, and vessels. Some examples are; the Golden Gate Bridge, in San Francisco, the Queen-Elizabeth Hotel in Montreal as well as the Jacques-Cartier Bridge, the Quebec Bridge, and the Mercier Bridge. The company's operations in Lachine date back to 1885, with the height of its success

71 '" (Table de Réflectioin d'Action Interculturell :Janvier 2020)
72 "L'écoquartier Lachine -Est, Programme Particulier d'urbanisme, » (Ville de Montréal : September 2021), 2.
73 "L'écoquartier Lachine -Est," 5.

Figure 38 *Lachine-Est industrial fabric; Dominion Bridge Company*

Figure 39 *Lachine -Est main retail street; Notre- Dame and 6e Avenue*

Figure 40 *Context Map of Lachine-Est*

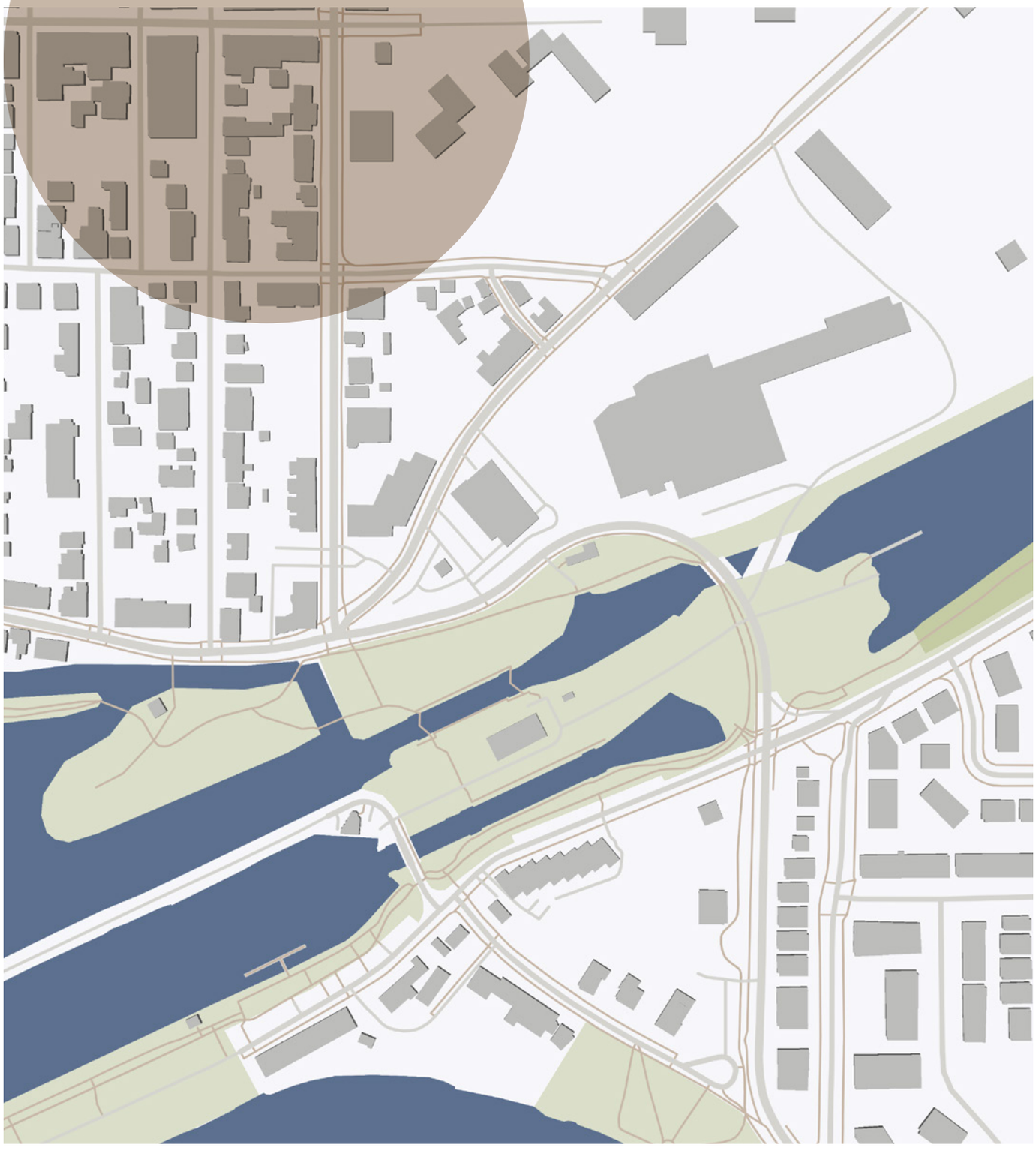
being attained in 1970. Regrettably, the company became bankrupt in 1998, leading to the closure of the company's main campus. Today its secondary campus, south of Saint-Joseph Boulevard, is currently owned and operated by Cintube, a metal fabricator specializing in bending services for a variety of industrial sectors. Undoubtedly the accomplishments of Dominion Bridge Company hold significant value in Montreal's industrial history.[74]

In proposing a framework of stewardship in Lachine- Est, the former Dominion Bridge Company site will be used as a test case. Located on the edge of the canal, sharing leased land from Parks Canada, the site includes three buildings that have experienced various transformations over the years, retaining their use as an industrial manufacturing facility. Its location along the canal facilitated the manufacturing use of the water for transportation, manufacturing equipment as well as discharging effluent from the facility. The site is currently only accessible by vehicle with two access points; one to the north on Saint- Joseph Boulevard and one access point to the south on Chemin du Museé. Each access point is gated, allowing only authorized personnel entry. The site shows visible remnants of the industrial past and present. Unused freight tracks weave through the site and along its borders, reflecting a past when rail transportation and industry were synonymous.

In November 2004, an urban plan was enacted to provide recommendations for urban heritage. The plans allow for buildings within sites of interest to be assessed and categorized for their historical value. Defined by three classes which designate pathways to preserve their historical components. Of the three buildings on the site; "The Erection Storage", located along Saint-Joseph Boulevard and the "Mill Building" and the "Cab House," located both in the center of the site facing the canal, the latter two are designated as Class C. This designation requires that efforts must be taken to preserve or restore the buildings in their entirety, or by preserving as much of the buildings as possible, by recycling key architecture and structural components or by employing 7 architectural styles that inspired its original construction.[75]

74 Olivia Lento et al., 'Lachine-Est: Montage & gestion de projects d'aménagemnt' (Universite de Montréal, 2020).
75 Lento et al., 'Lachine-Est: Montage & gestion de projects d'aménagemnt',p 10

Figure 41 *Site context map showing pedestrian path ways along the canal and park spaces*



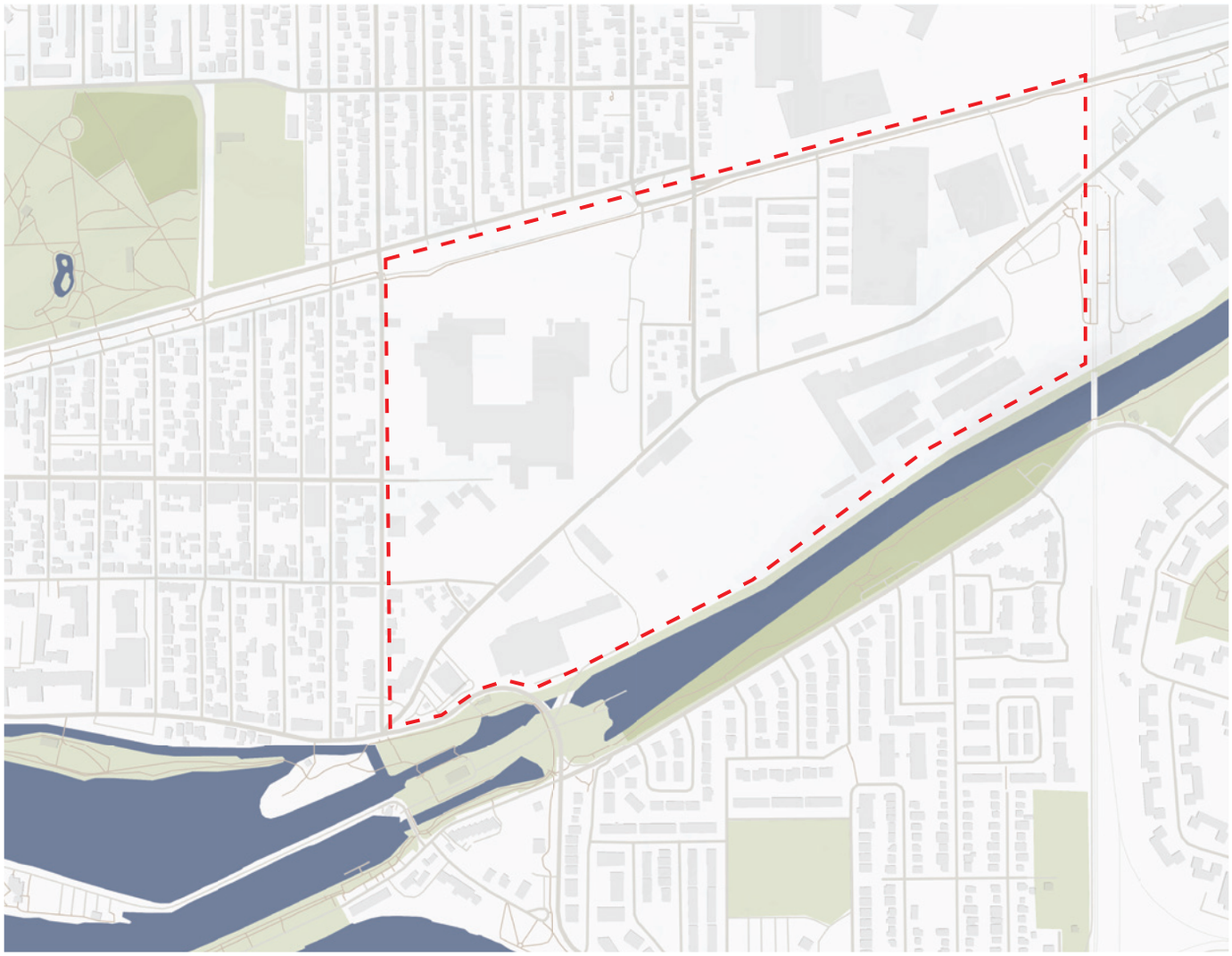


Figure 42 *Context map of Lachine-Est*

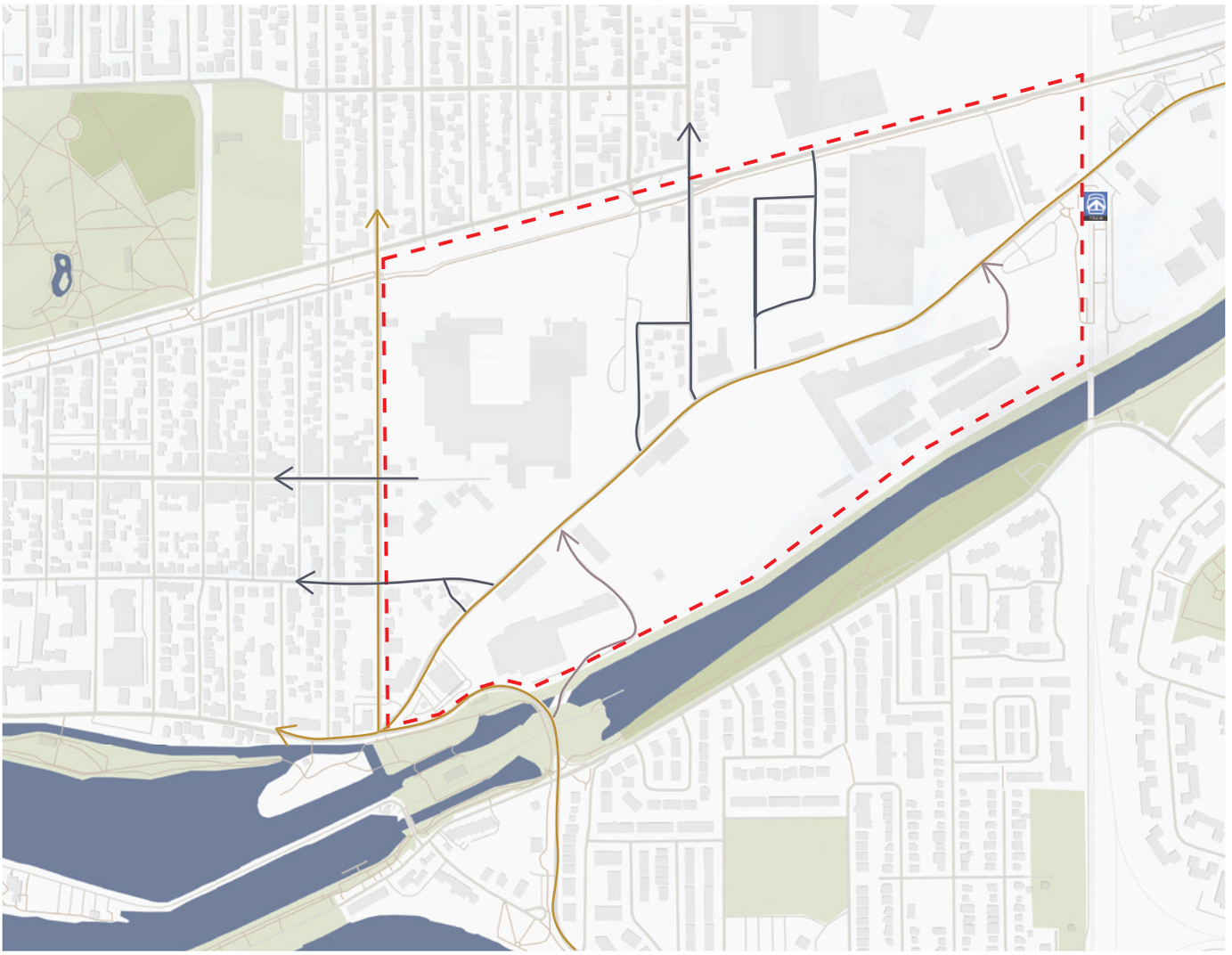


Figure 43 *Vehicular access routes*

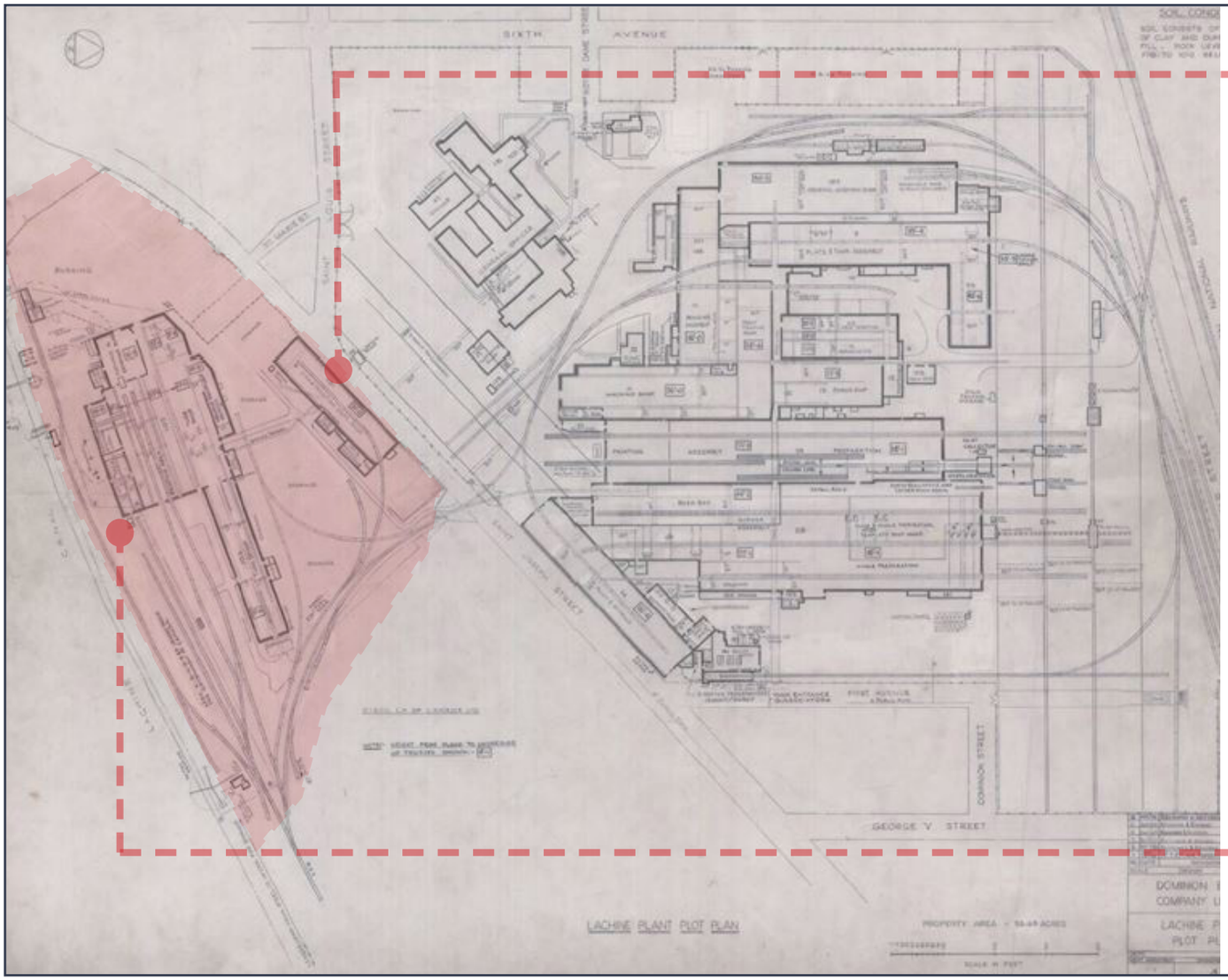
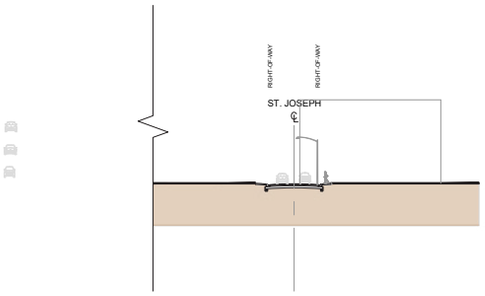
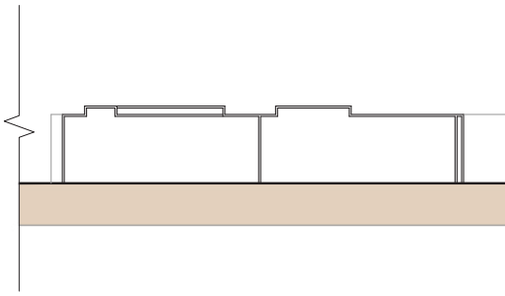
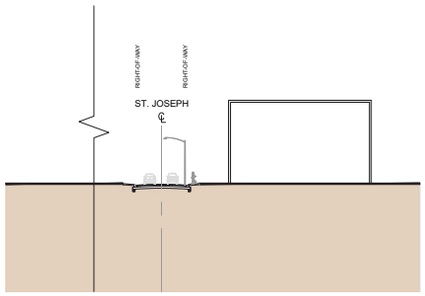

SIXTH AVENUE
GEORGE V. STREET
LACHINE PLANT PLOT PLAN

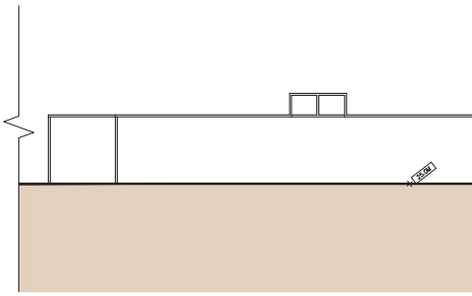
Figure 44 *Architectural plan for Dominion Wire Bridge Company (currently Cintube)*
Figure 45 *Cintube rear elevation*
Figure 46 *Cintube Front Elevation*

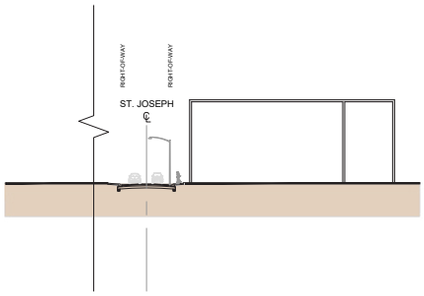
Figure 47 *Section A-A*
Figure 48 *Section B-B*
Figure 49 *Section C-C*

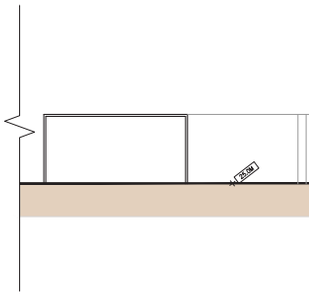


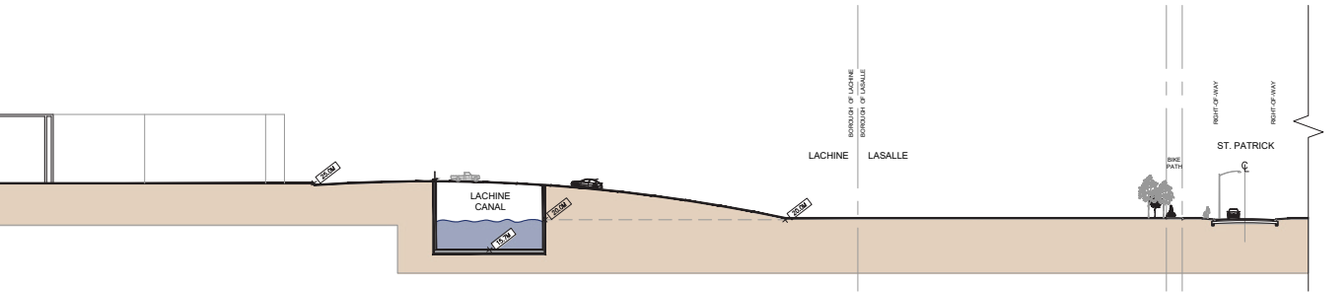











BOROUGH OF LACHINE
BOROUGH OF LASALLE
LACHINE
LASALLE
RIGHT-OF-WAY
RIGHT-OF-WAY
BIKE PATH
ST. PATRICK
LACHINE CANAL
20.0M
20.0M
20.0M
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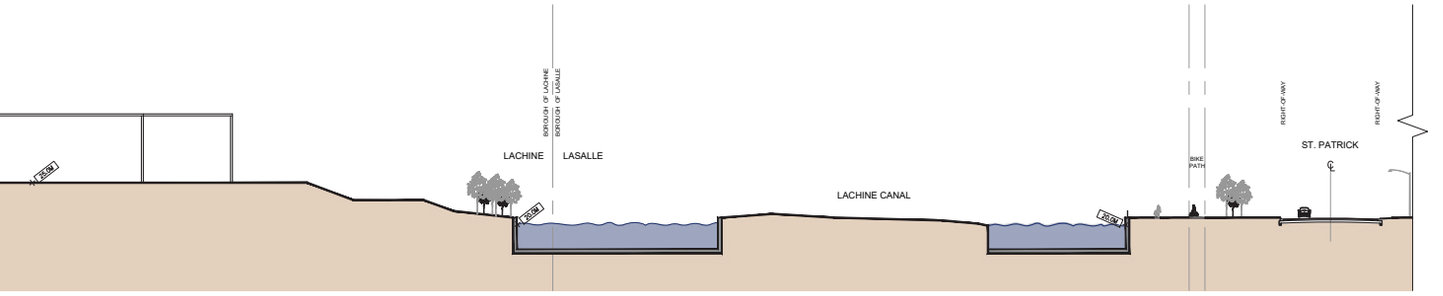
BOROUGH OF LACHINE
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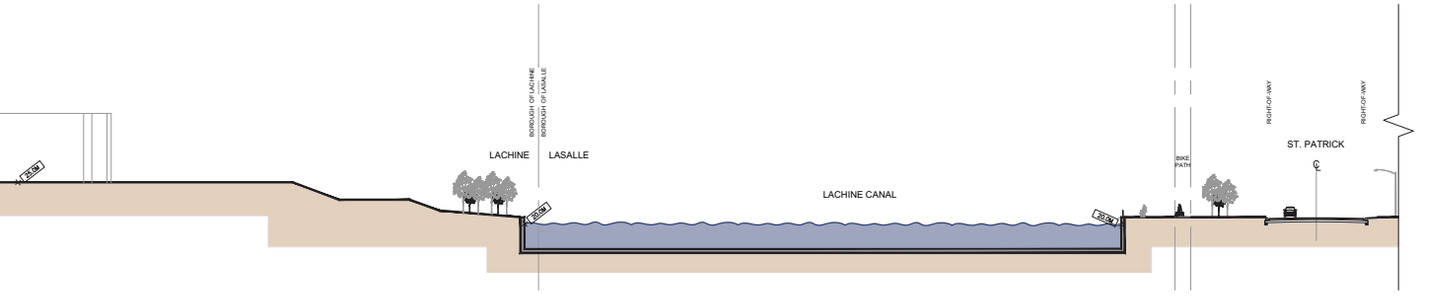
BOROUGH OF LACHINE
BOROUGH OF LASALLE
LACHINE
LASALLE
RIGHT-OF-WAY
RIGHT-OF-WAY
BIKE PATH
ST. PATRICK
LACHINE CANAL
20.0M
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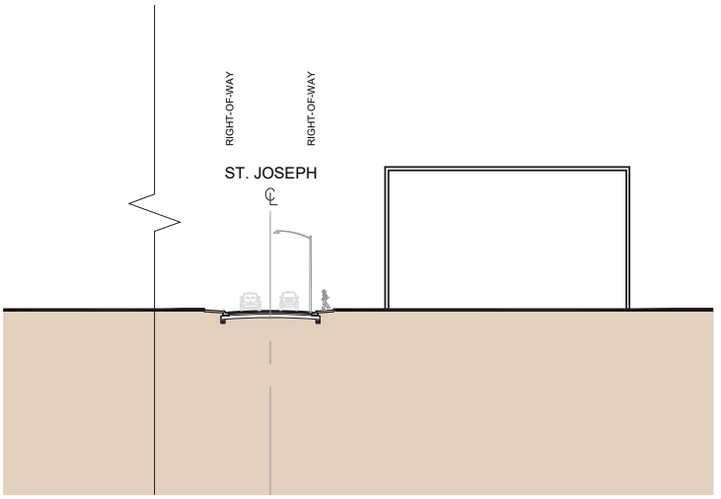
Figure 50 *Enlarged site sections; St Patrick Street*
Figure 51 *Section; Lachine Canal and St Patrick Street*



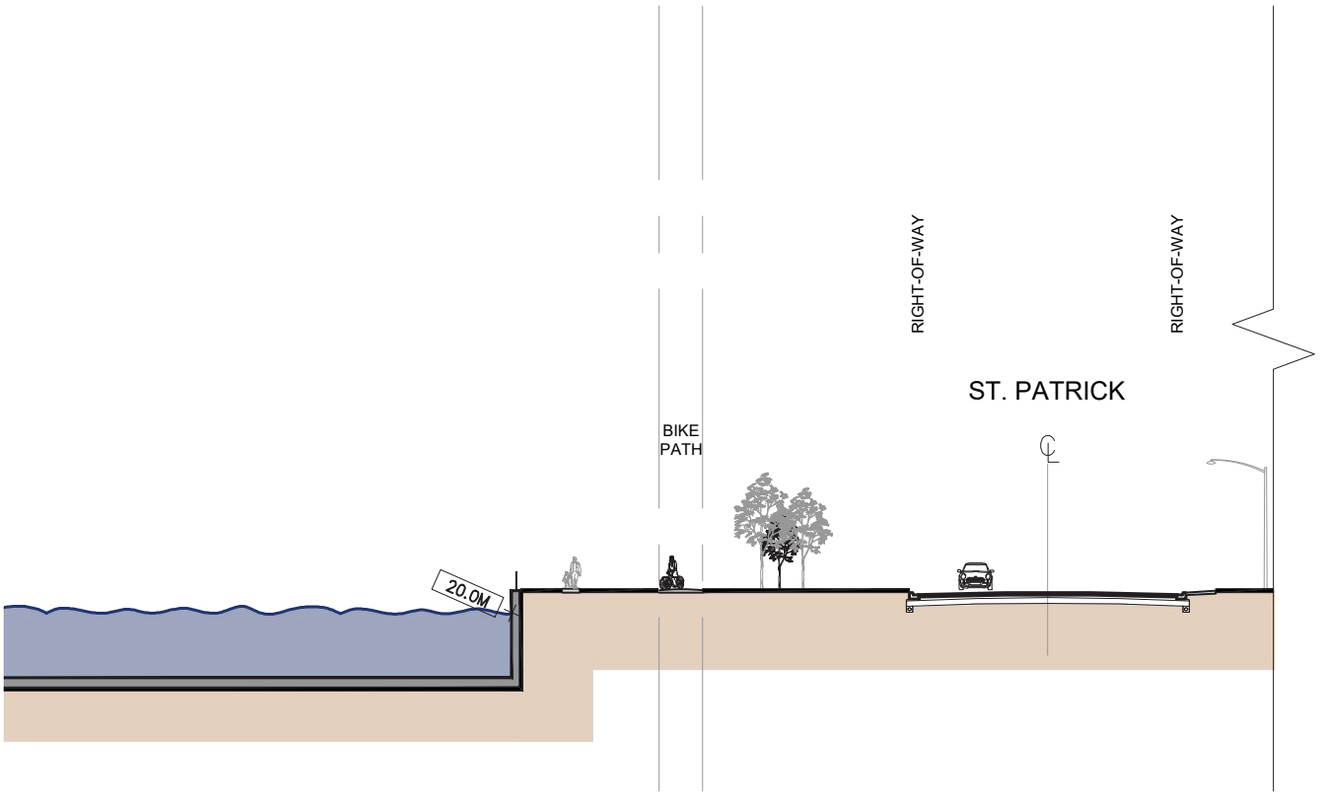

RIGHT-OF-WAY
RIGHT-OF-WAY
ST. PATRICK
BIKE
PATH
20.0M









Figure 62 *Existing site plan*

Figure 61 *Lachine -Est Key Plan*

Figures (top, left to right)
Figure 52 *Overlook of Canal; Chemain du Musée*
Figure 53 *Industrial yard; Dominion Bridge Compant*
Figure 54 *Canal Lock 5*
Figure 55 *Canal entry point at Chemain du Musée*
Figure 56 *Cintube Building; rue Saint Joseph*
Figure 57 *La Roumanie; rue St Louis and 6e Avenue*
Figure 58 *Residential street rue Ste Marie and rue Saint.-Louis*
Figure 59 *West view of Lock 5*
Figure 60 *South view of Cintube*

2.3

Oral Histories

The place of oral history within the histography of modern architecture has yet to be entirely accepted, understood, or theorized.[76] In this thesis, one of the guiding research questions has been: In what capacity can oral histories transform the discipline of architecture? Through research, it has been affirmed oral history indeed has the capacity to transform architecture in three ways. First, through the act of providing a platform for marginalized voices and constructing narratives around individuals, topics, occurrences, and artifacts that have been excluded from architectural, and historical documentation. Second, the act of documenting experiences and interactions with buildings over a period of time can add a dynamic fourth dimension to a structure that is otherwise static in its three-dimensional form. And third, it can result in the development of a distinct form of architectural design, characterized by its embodiment, performative nature, and emotional resonance.[77]

The concept of "place-making" involves constructing and reconstructing a shared human history by affirming and revealing cultural meanings attributed to specific locations.[78] Examining oral history in relation to architecture, this thesis will apply the third method of oral history to develop a distinct form of architectural design, one that is embodied and provides emotional resonance. To do so, this thesis uses quilting to engage oral histories and contribute to the architectural design process to facilitate cultural inclusivity and equitable stewardship of public space as it relates to water heritage.

Craft historians began reflecting on history and heritage, investigating settlement, migration, immigration, and resistance.[79] Quilting is considered a form of documenting these stories. The history of quilting in Canada has tremendously diverse cultural representations beginning from Indigenous origins. Linked to the underground railroad, quilts were used to communicate secret codes assisting enslaved people as they travelled to freedom states such as the northern United

76 Gosseye, Stead, and Van der Plaat, *Speaking of Buildings: Oral History in Architectural Research* (New York: Princeton Architectural Press, 2019).
77 Gosseye, Stead, and Van der Plaat, *Speaking of Buildings*, 26.
78 Matsui et al., "Indigenous Water Histories I."
79 Counterpoint Quebec, Concordia University, https://quilt.concordia.ca/.

States and Canada. Traditional quilt patterns such as the "Flying Geese" or "Log Cabin" would alert enslaved people in plain sight to follow geese's migration to water, food, or a safe resting place along the underground railroad. Through craft, these patterns served to communicate oral histories and navigation.

Quilts are a physical manifestation of oral histories. Through the techniques of craft and symbolism of the patchwork, block design, embroidery, and beading, oral histories not traditionally recorded are preserved and passed on from generation to generation through the artifact. This form of record-keeping and documenting is independent of traditional institutions. It is open to all, which enables a broadened and diverse recalling of historical events and cultures to provide a complete and accurate history. Quilts are not only personal records but are also documents of the changing global trade in materials, showcasing the vast categories of trending and available materials.[80]

The art form of quilting has been explicitly connected to the feminine, therefore linked to women's issues and used as a conduit for activism addressing reclaimed histories and tradition. Quilting has been interpreted by scholars and writers and viewed across age, class, and race as emancipatory and a method of creating space for the marginalized. This is true in the physical sense and metaphorically through quilt patterns and quilting itself. Often a collective activity, quilt-making has translated into community engagement, leading to income generation, political organization, storytelling, and advocacy.[81] An example of this can be seen through the Gee's Bend Quilts. A group of women in Alabama gained notoriety in the art community for their quilt style that spanned generations. The simplicity of geometry influenced by Indigenous and African textiles told stories of a community where quilting was part of everyday life.

Quilting is the process of stitching together various layers of fabric using techniques such as embroidery, applique, piecing, patchwork, free motion, and hand tying to create an object of cultural value. Expressed in these objects of culture is the ability to tell stories through patterns and textures. This is described in an interview with Valerie Goodwin, an architect, professor, and textile artist. She details her quilting

80 Kristy Robertson, "Quilts for the Twenty-first Century," in *The Handbook of Textile Culture*. ed. Jefferies, Wood Conroy, and Clark, 197–210, 202.
81 Robertson, "Quilts for the Twenty-first Century," 198.

Figure 63 *Reusable shopping bag made at community engagement even*

Figure 64 *Pedestrian/ cycling path; showing city infrastructure*

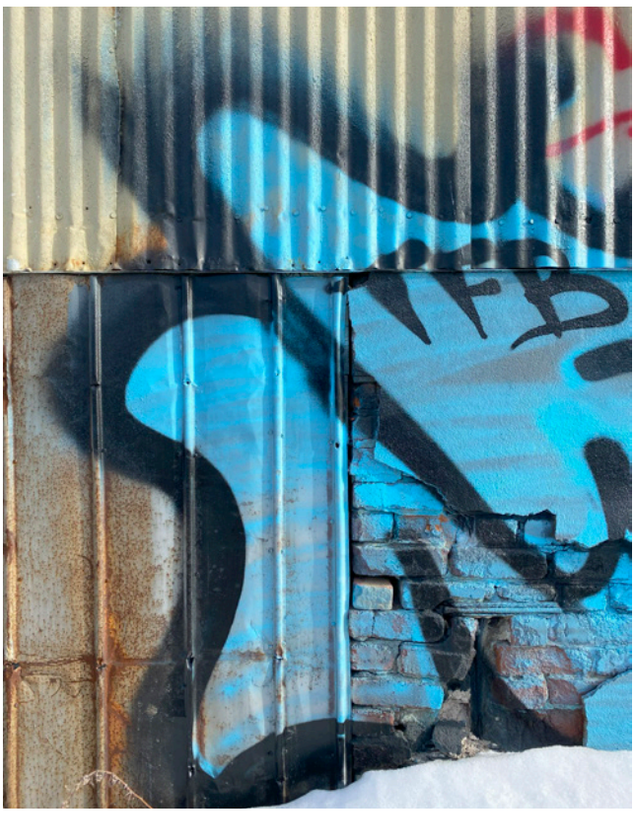
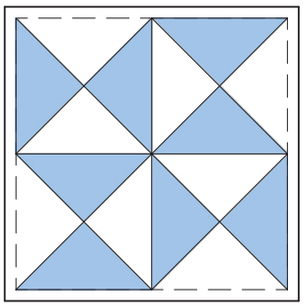
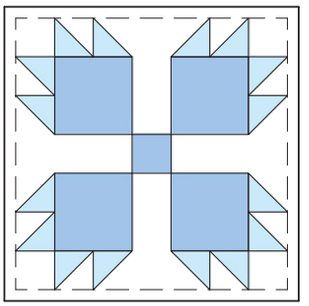


Figure 65 *Existing building with graffiti; showing various materials of the building's hisotory*

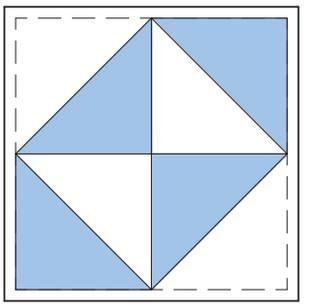
Figure 66 *Segment of a commissioned mural on the side of a retail building in Lachine-Est*



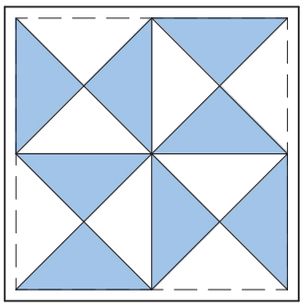
Flying Gees



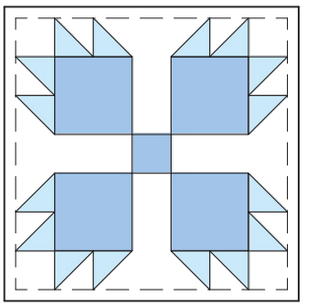
North Star



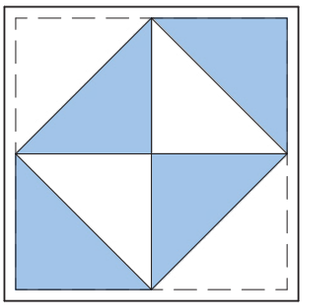
Crossroads



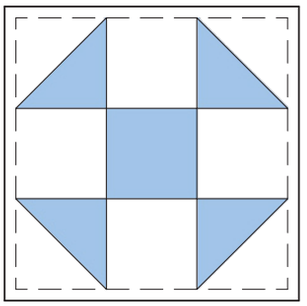
Bow Tie (Hourglas)



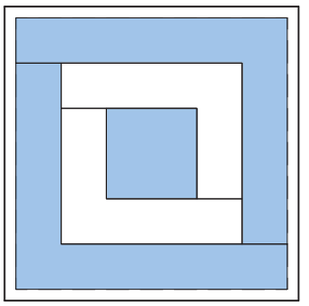
Beat ‘s Paw



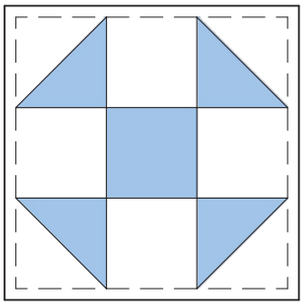
Flying Gees



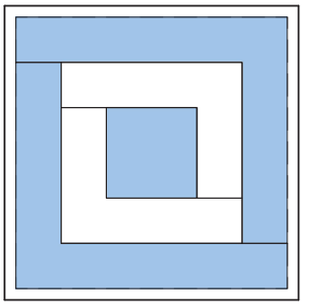
Monkey Wrench



Sailboat



Shoofly



Log Cabin

Figure 67 *Traditional quilt blocks*

Figure 68 *Gee's Bend Quilts*

process, which is informed by traditional architectural conventions and analysis and the universal language of mapping to express narratives of experience and place. In her work, she utilizes basic design principles and draws on the analytical method of "composite drawing." Her quilts can convey information through elements such as line, shape, form, colour, space, and textures. Principles include balance, movement, rhythm, contrast, emphasis pattern, and unity.[82] Borrowing from Goodwin's toolset and utilizing the universal language found in maps and architectural symbols, quilting and collage are used to convey information.

The methodology pursued in the research process was ultimately mirrored in the design process, beginning with an initial sketch to devise a hierarchal order of elements. Using this methodology enables the design to represent place-based data collection supported by the narratives of oral histories represented through the craft of quilting. The methodology devised assisted with piecing together information from various sources, archival scholarship, community engagement, photo documentation, as well as mapping.

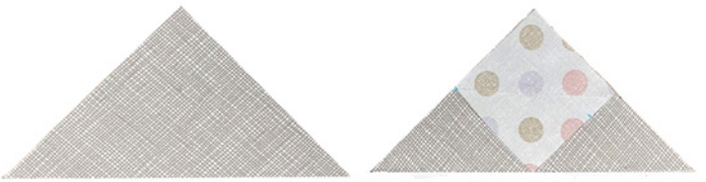
Information related to the site, a project of adaptive reuse, needed to be assembled and translated from various histories and points in time. The site itself had existed since before 1825. Various records confirmed its transformation over time and its various functions, however not in a traditional linear sense. Large gaps of missing information had to be interpreted and constructed from scratch. Examples would be photos and various photocopied architectural drawings. Deciphering the information used the same established hierarchy of elements. This provided the ability to classify information and introduce order that was not necessarily tangible. The site analysis process went beyond the traditional architectural process and required a customized approach, which later informed the design process.

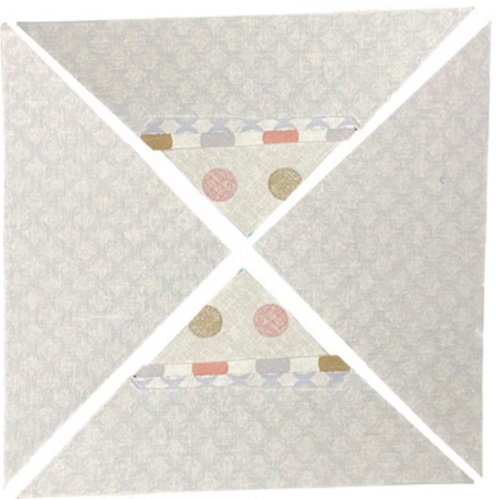
The precedent of a similar process can be seen in the work of the Gee's Bend quilts, where architectural typology, environment, symbols, artifacts, and relics of obsolescence are used as inspiration and represented in quilting to transfer

82 Pippa Eccles, "Building Quilts; a Conversation with Architect and Quilter Valerie Goodwin," Accessed 18 March 2023, https://static1.squarespace.com/static/5b280b3f4611a029a14d936f/t/5b2ec66552951dadb2480b7d/1282663271073/QA+ARTICLE.pdf.

Figure 69 *Quilt Study;Front and Back*

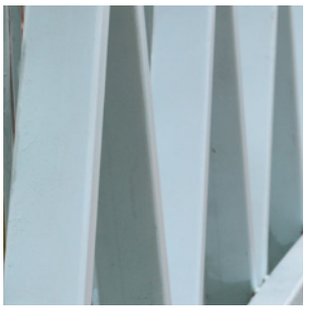
Figure 70 *Stitching and embroidery study*

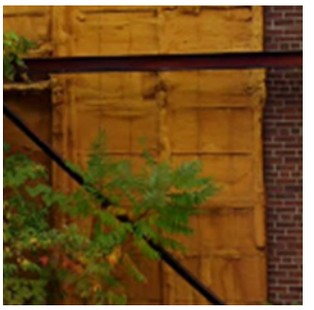






HYDRO-QUÉB

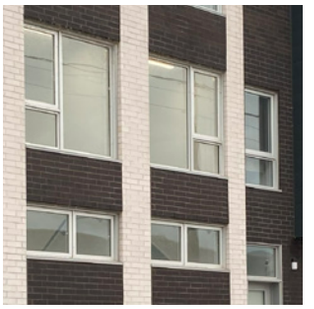











knowledge and historical narrative. Some of these artifacts are fabrics from the uniforms of factory workers, or textures and colours of rusted corrugated steel buildings, once vibrant places of gathering and now abandoned and desolate.[83] Several site visits were conducted where photos were taken to better understand the context of the urban fabric, landscape, pedestrian paths, vehicular routes, and building typology, as well as community engagement. The site is in flux, caught between a state of vanished, decaying, and vacant. Piecing together its past, its connection to the present and future was, in its own sense, an investigation in oral history.

83 William Arnett et al., *Gee's Bend: The Architecture of the Quilt* (Atlanta: Tinwood Books, 2006).Alabama, and its quilts. Surrounded on three sides by a river, Gee's Bend developed a distinctive local culture and quilt design aesthetic. The Quilts of Gee's Bend, the first exhibition to document the quiltmaking achievements from this remote enclave, was launched at the Museum of Fine Arts, Houston, in 2002. Subsequently presented at twelve major museums, the show was seen by over a million viewers and prompted an outpouring of popular interest and international critical acclaim. Expanding upon that initial exhibition and its accompanying publications, Gee's Bend: The Architecture of the Quilt - also developed by the Tinwood Alliance with the museum - offers a deeper look into the women and their art, and a more focused investigation into the nature, inspirations, and future of the Gee's Bend quilt tradition.\"--BOOK JACKET.","event-place":"Atlanta","ISBN":"0-9719104-5-6","publisher":"Tinwood Books","publisher-place":"Atlanta","title":"Gee's Bend : the architecture of the quilt","author":[{"family":"Arnett","given":"William."},{"family":"Arnett","given":"Paul."},{"family":"Cubbs","given":"Joanne."},{"family":"Metcalf","given":"E. W."}],"issued":{"date-parts":[["2006"]]}}},"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}

Figure 71 *Aerial view of Lachine-Est district*

Figure 17
Areial view of the Island of Montréal; The Lachine Canal and St. Lawrence Seaway

Part Three: Water as Agent

3.1

Quilting Architecture

3.1 Quilting Architecture

Quilting is a way of preserving social fabric through repetitive and reflective work that challenges the notion of aesthetics and the ordinary.[84] The act of craft in sustaining community brings together qualities of hand and digital production, resourcefulness and stewardship.[85] It has been a cohesive force for many African American and Indigenous Communities. Creating a utilitarian object brings together family and friends, weaving natural surroundings and community tradition.

As a process of site analysis, a quilt was constructed to test how methods of quilting can mobilize architecture, from a point of research and design. The quilt serves as a tool to symbolize locations within the context of the site of interest that have significant relationships to the past, present and future. These locations were first documented through site visits and photography. A series of photos were analyzed and defined by five elements of composition: line, form, texture and pattern. Each of the elements translates specific conditions relating to the site and environment. The element of line, correspond to the x, y and z axis, expressing the three-dimensional relationship to the site. Form, as it relates to mass and volume. Texture characterizes tactility and materiality, followed by Pattern, which signifies repetition and sequencing as it relates to design aesthetics.

Extracting the core elements of the images allowed for a re-imagined representation, of place. One that is independent of traditional syntax and open to interpretation and narration. The analysis was presented as two-dimensional sketches, then cross-referenced and correlated with traditional quilt designs. Traditional quilt designs support an innate language, one rooted in the practice of oral history. The symbolism of each block design is related to an oral history of generations before. These histories are told through geometric symbols that have become synonymous with the language of quilting. For example, the double

84 Magdalena Garmaz, 'The Quilting Studio: On the Craft of Making and Giving', *Journal of Architectural Education (1984-)* 63, no. 1 (2009): 14–22.
85 Garmaz, 'The Quilting Studio'.

Figure 72 *Quilt Material Combinations*

Material representation:
Cortan steel, masonry brick ,corrugated metal siding and wood,
Elements:
Water, Earth and Air

Figure 73 *Full Quilt Desig and Dimensions*

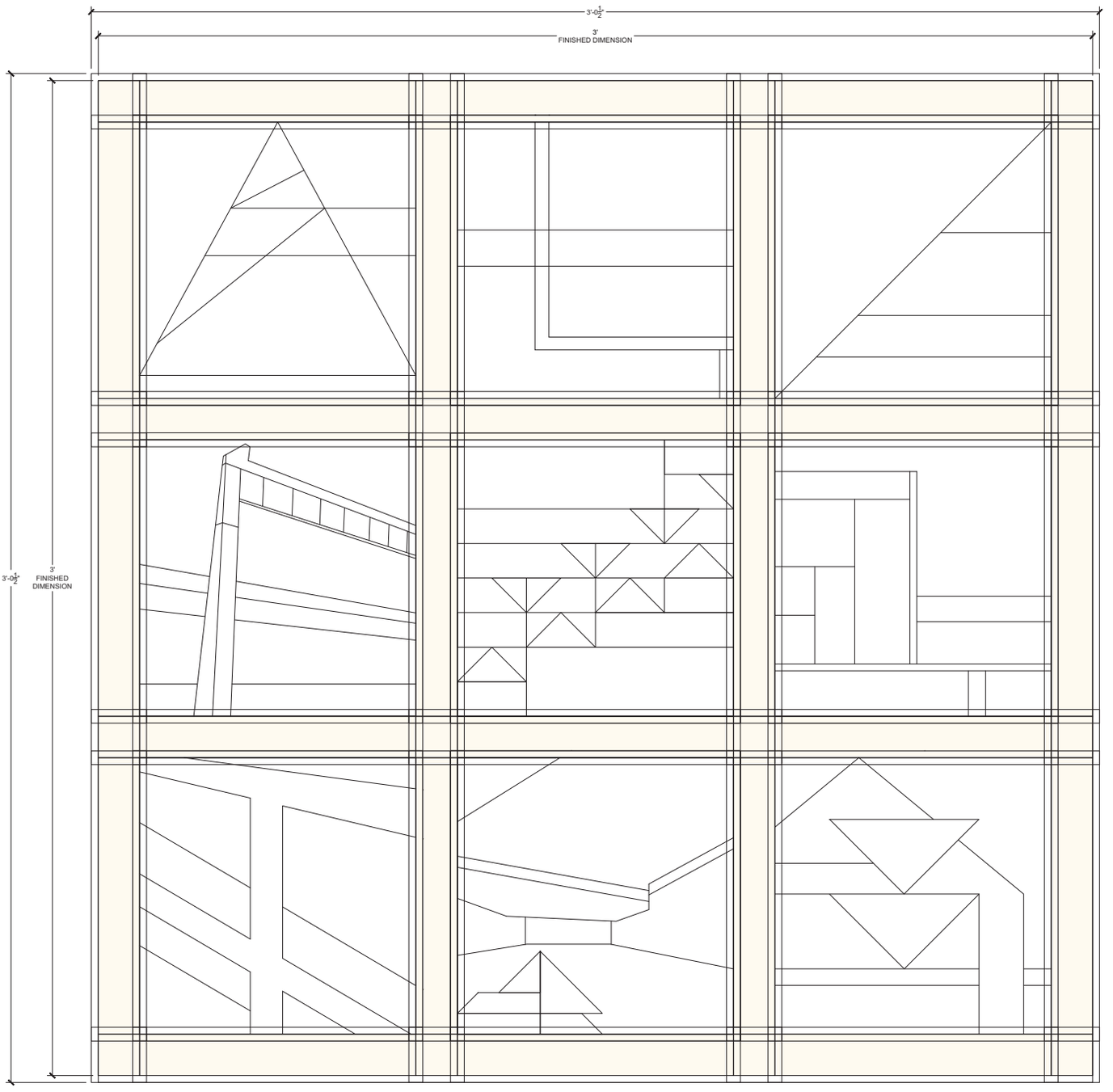
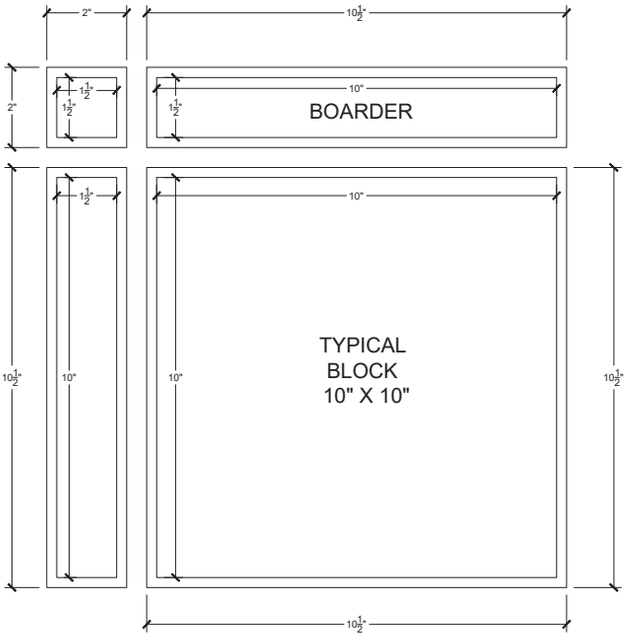


Figure 74 *Technical drawing of the quilt with material dimensions*



9 - 10 ½" X 10 ½" (TYPICAL BLOCK)

16 - 2" X 2" (BOARDER SQUARES)

24 - 2" X 10 ½" (BOARDER RECTANGLES)

QUILT STITCHING AT 1"

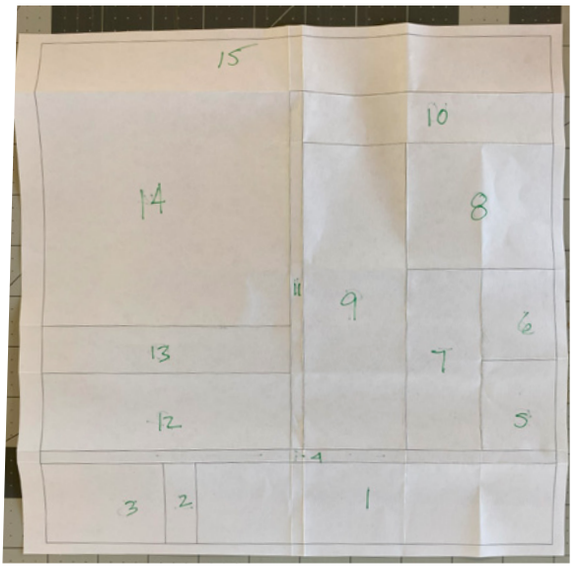


Figure 75 *Step one quilt paper piecing progress*

Figure 76 *Step two of paper piecing process*

Figure 77 *Step three of paper piecing process*

Figure 78 *Step four of paper piecing process*

isosceles triangle on a quilt corresponds to the “Flying Geese” pattern, which hosts a narrative of resistance and oral history of activism relating to the underground railroad. Quilting created a secret language in plain sight to announce to enslaved peoples to follow geese migration patterns to a safe place. A hybrid structure is created using the geometry of traditional quilt blocks and the geometry established through image analysis. This hybrid structure allows for the design of the quilt block to express meaning beyond its geometric symbol in a broader social and cultural context.

Quilting is the process of layering, patching and piecing fabric together, it offers a generative process that has various techniques. The technique used in the construction of this quilt is “paper piecing” or “foundation paper quilting”. The method of “paper piecing” utilized a foundation material such as paper or muslin fabric to stabilize the pieces of fabric sewn together. This technique of quilting also facilitates a multimedia approach in organizing data and in the design of the block themselves, as the design for the block is printed or sketched on the foundation paper. This process allows for easy maneuvering between analogue and machine base quilting. Similar to the process of architecture design, the quilt blocks were created through a process of sketching, followed by using computer-aided design (CADD) software to work out the technical aspects. The blocks were then printed on paper, ready to be sewn. Fabrics were then sewn directly on the paper, which served as a road map for stitching.

The quilt was created with a strict set of constraints that dictated the design and size of the blocks. The constraints allowed for randomness to occur while still maintaining order throughout the process. The quilt is 36 x 36 inches in size and composed of nine, 10-inch blocks, framed by a border of rectangular strips and square patches. The first constraint created was a grid, setting forth the entire design and construction process. By creating a series of grids, outcomes were determined very quickly. The grid defined, the size of the

Figure 79 *Step 4: all block patterns and boarder pieces are sewn together and laid on top of batting and back fabric layer*

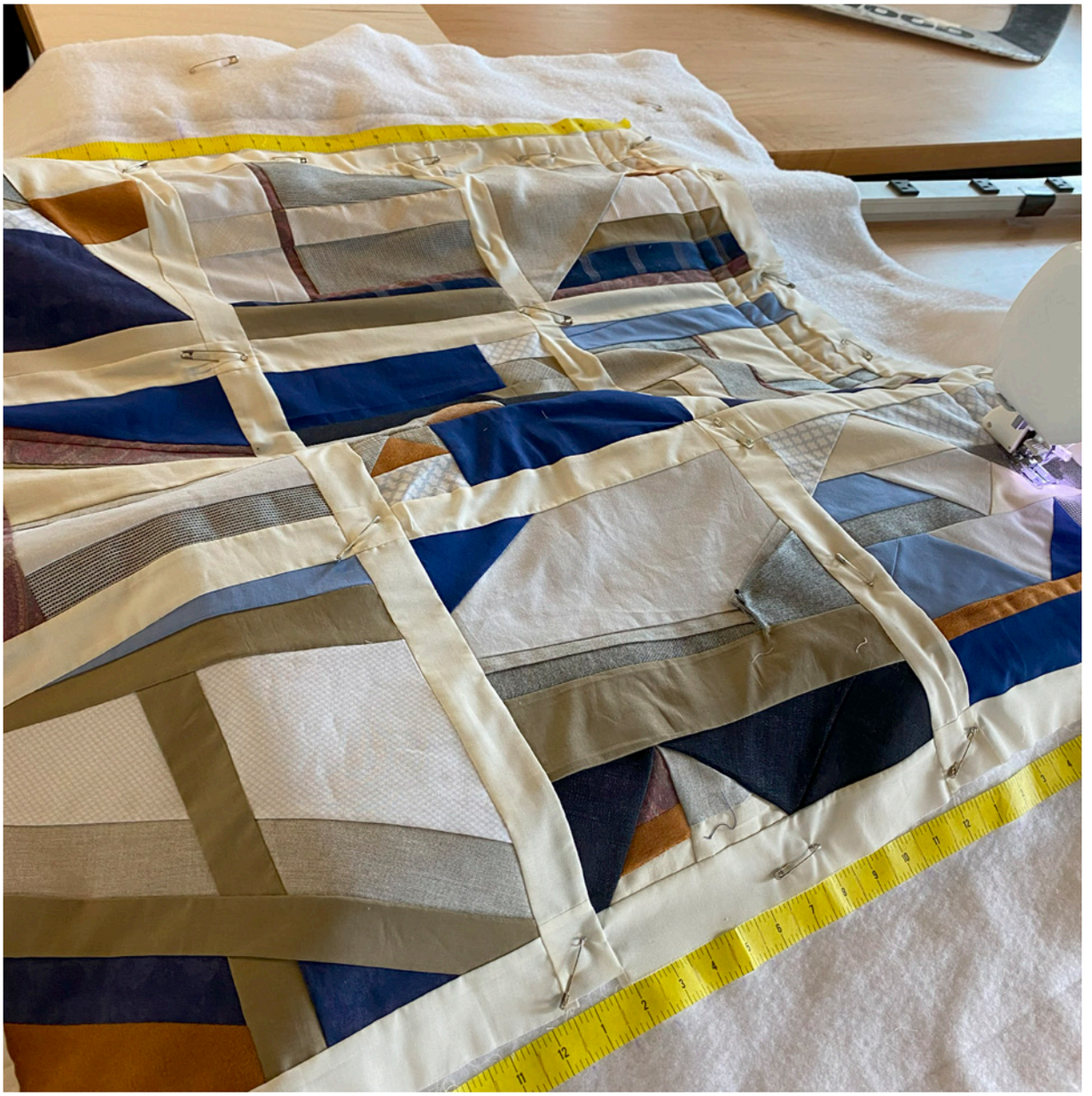


Figure 80 *Step 5: all layers are sewn together with a running stitch, spaced 1" apart, binding the quilt.*

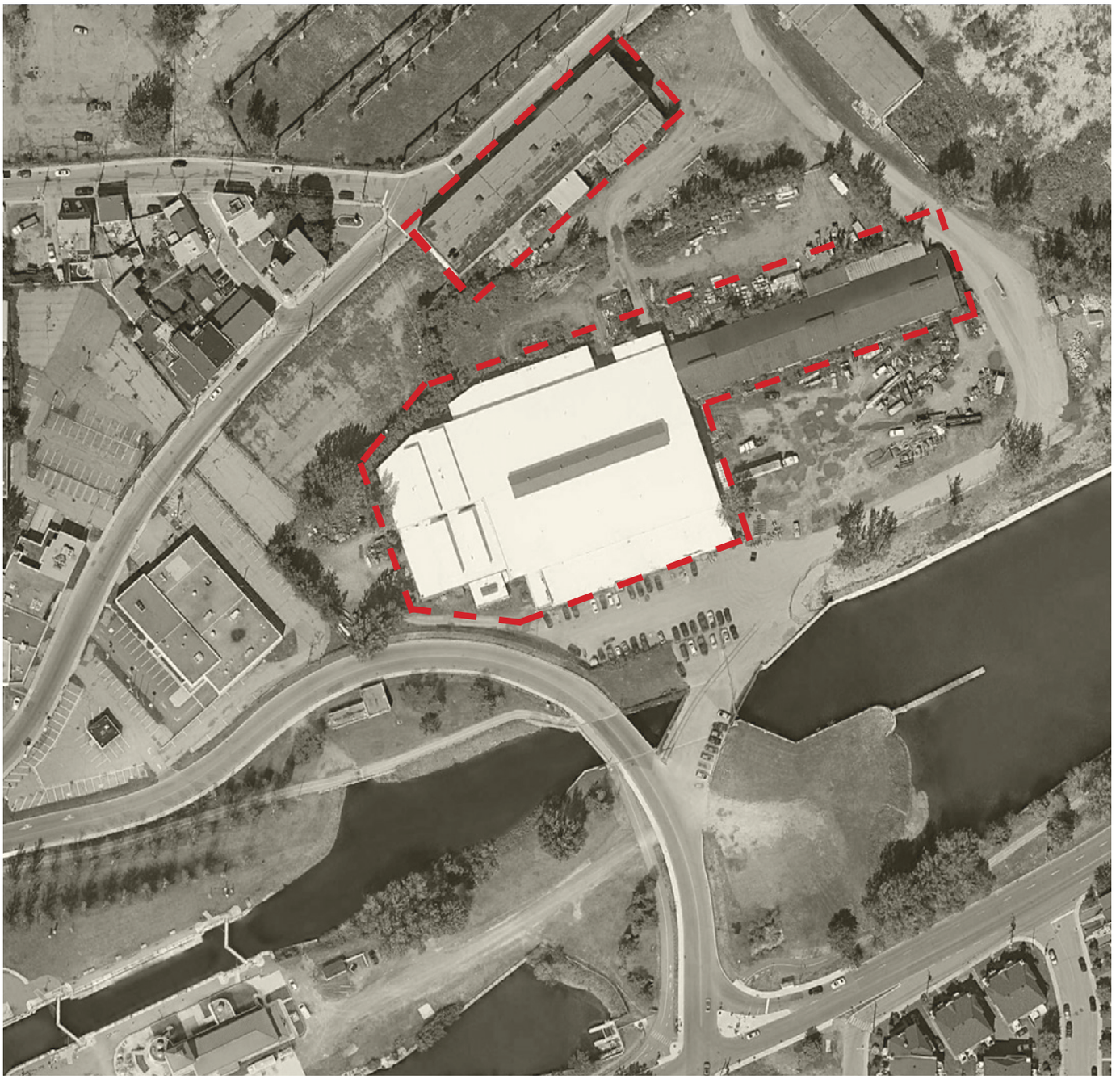


Figure 81 *Aerial view of the former Dominion Bridge Company, Lachine QC,*

blocks and replicating the block size throughout the quilting process allowed for flexibility in determining the final size of the overall quilt and how much materials were needed. The second constraint was the selection of material. Each block was confined to the use of six or seven different materials. Fabrics were selected for their colour, pattern and texture, representing the materiality found on site. As a generative design process, quilting allowed the possibility of a certain amount of flexibility allotted within the process. Dissecting the process of quilting can easily be compared to that of prefabrication and modular design. Not only through the organizational aspects but also through structural connection and the relation to materiality.[86]

The method of paper piecing allows for precision design work at various scales. In contrast to traditional patchwork, this method of quilting offers unique authorship of the quilt's design and message. Not confined to traditional block design with predetermined symbolism, an original narrative is created with its own embodied history and imagery. The method of quilting as an approach to architecture has substantial promise. Oral histories, which provide the capability of embodied knowledge, enable the establishment of a framework that can convey information beyond the capabilities of conventional architecture.

86 Garmaz, 'The Quilting Studio'.


ATTENTION
CHANTIER
AIRE DE
MANOEUVRE
CAMION

Figure 82 *Site Analysis; analyzing photo for pattern, line, texture and materiality*


©2019 Google

Figure 83 *Site Analysis; analyzing photo for pattern, line, texture and materiality*

3.2

Adaptive Strategies

3.2Adaptive Strategies

Contemporary cities are not water resilient. Adaptive strategies in architecture, landscape and urban design can play a key role in addressing this. In relation to brownfields, most of which are post-industrial landscapes, have multiple challenges, including degraded environment, polluted water, and toxic soils. As post-industrial cities attempt to reclaim industrial waterways, public bathing is becoming urban infrastructure that connects histories of the past, present and future through the water. Bathing has historically been a communal activity, blending cultural rituals, architectural forms, and the natural environment. The act of bathing is intrinsically linked to oral history and water heritage. This thesis explores practical methods through which these challenges can be mitigated to re-invigorate these sites for community engagement and, ultimately, stewardship. The following case studies exemplify pragmatic strategies that showcase as an agent of change.

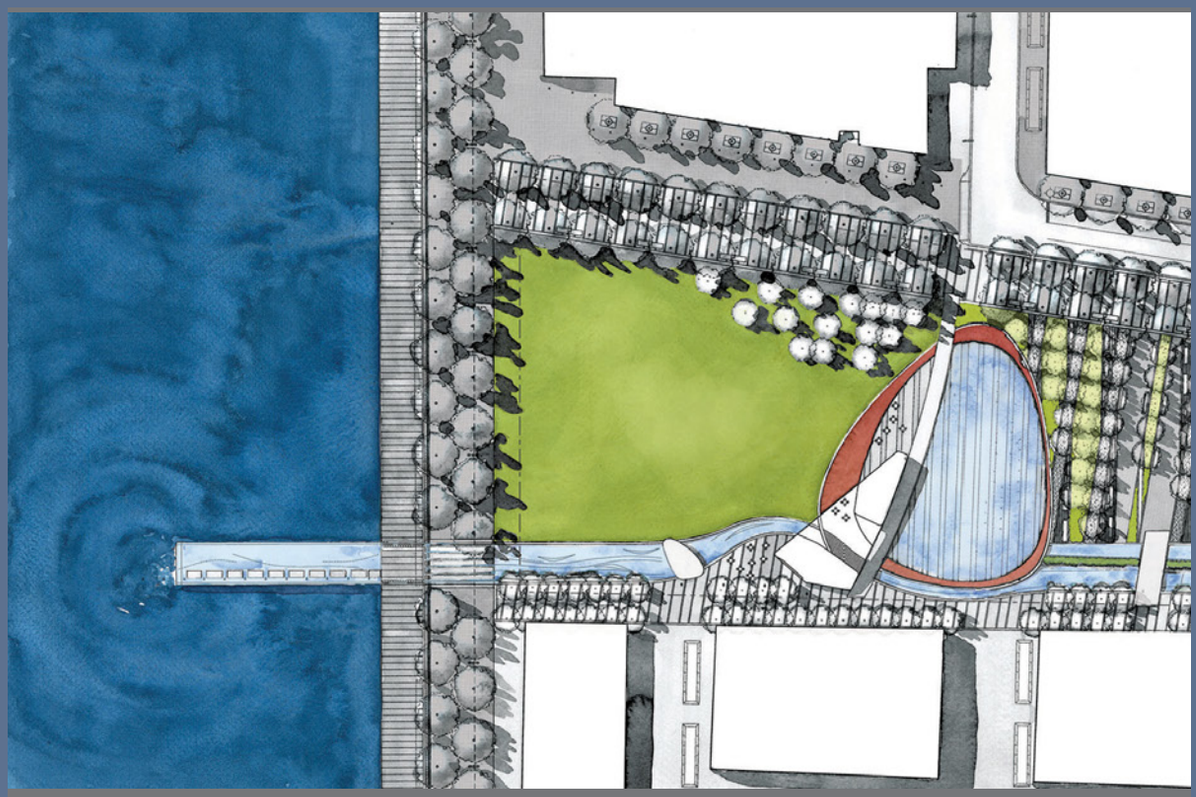
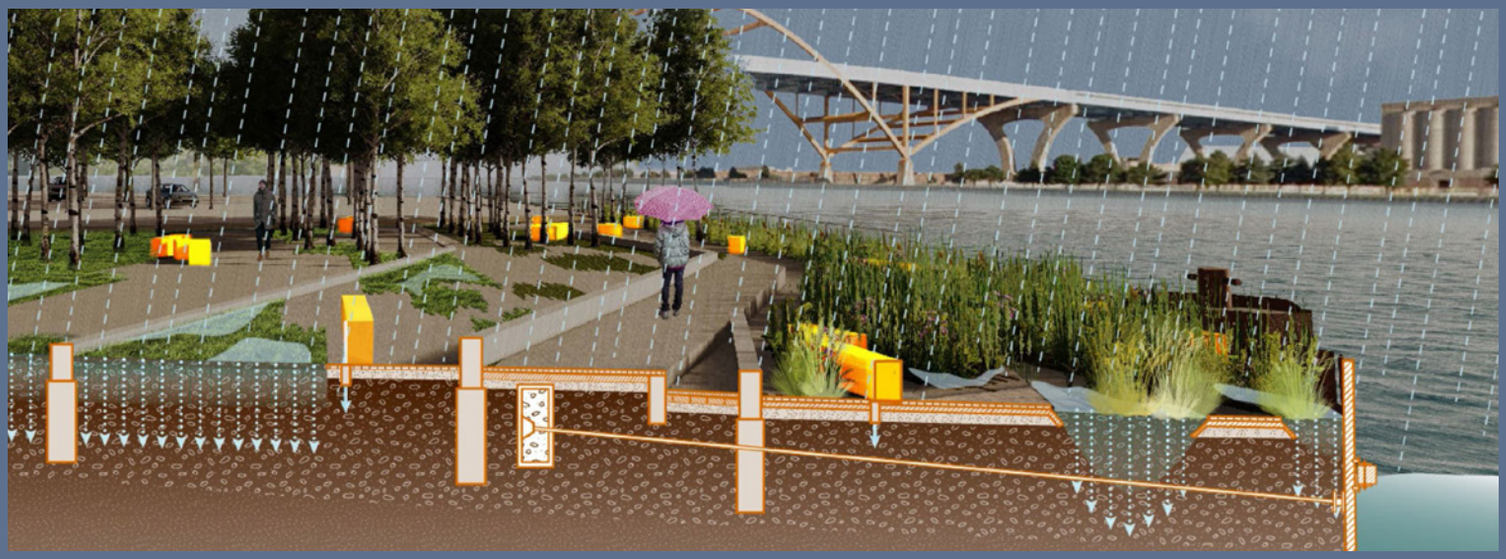


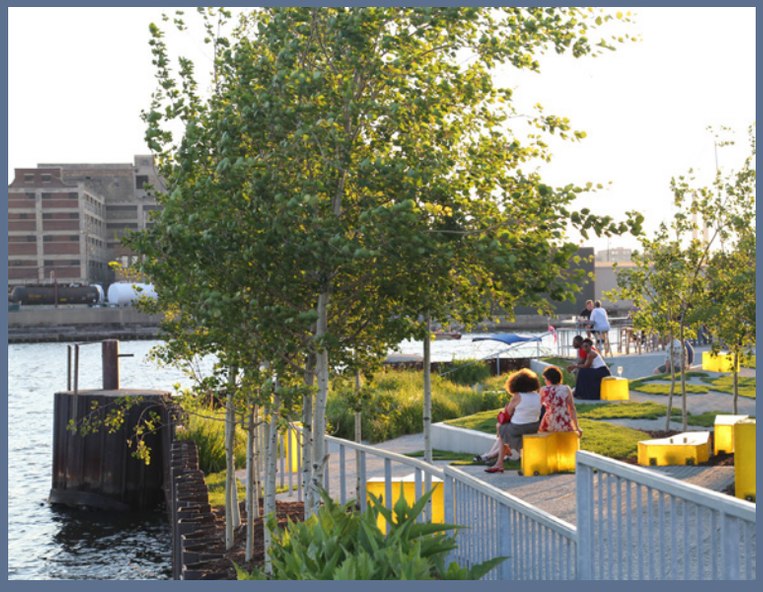
Figure 86 *Master plan*
Figure 87 *Image of water feature on site*

Case Study: Sherbourne Commons

Sherbourne Commons

The park pavilion at Sherbourne Common designed by PFS Studio has effectively incorporated a UV filtration system. After the elimination of sediment from stormwater, it undergoes filtration and UV treatment prior to its utilization across the park. The purified stormwater is celebrated and highlighted as a visual and acoustic effect. The treated stormwater is displayed from "Light Showers" and filtered through a biofiltration bed before it cascades down a series of weirs, directing the water into a lower channel which carries the purified water to the lake. Sherbourne Common's versatile character enables its utilization throughout the day and across all seasons. The central plaza serves multiple purposes, functioning as a splash pad during the summer, a performance space during the shoulder seasons, and an ice rink during the winter.





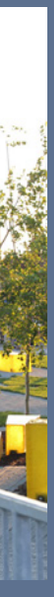


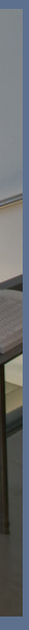
Figure 88 *Diagrammatic section*
Figure 89 *Image of pedestrian path*
Figure 90 *Image of public space*

Case Study: Erie Plaza

Erie Plaza

The three-mile pedestrian and bicycle corridor known as the waterfront ecopark serves as a linkage between downtown Milwaukee, Third Ward, Beerline Districts, and to the lakefront beyond. The park activates and registers environmental cycles of stormwater by collecting discharge to sustain a reconstructed marsh/wetland, recharges groundwater basins, and uses river water for irrigation. The plaza has been strategically designed to accommodate a multitude of potential activities, ranging from cultural events such as art festivals, concerts, and weddings, to recreational activities such as fishing, sunbathing, and boat-watching. Additionally, the plaza designed by STOSS serves as a venue for seasonal events such as winter carnivals and farmer's markets, as well as a space for everyday leisure activities.

Still Waters Run Deep



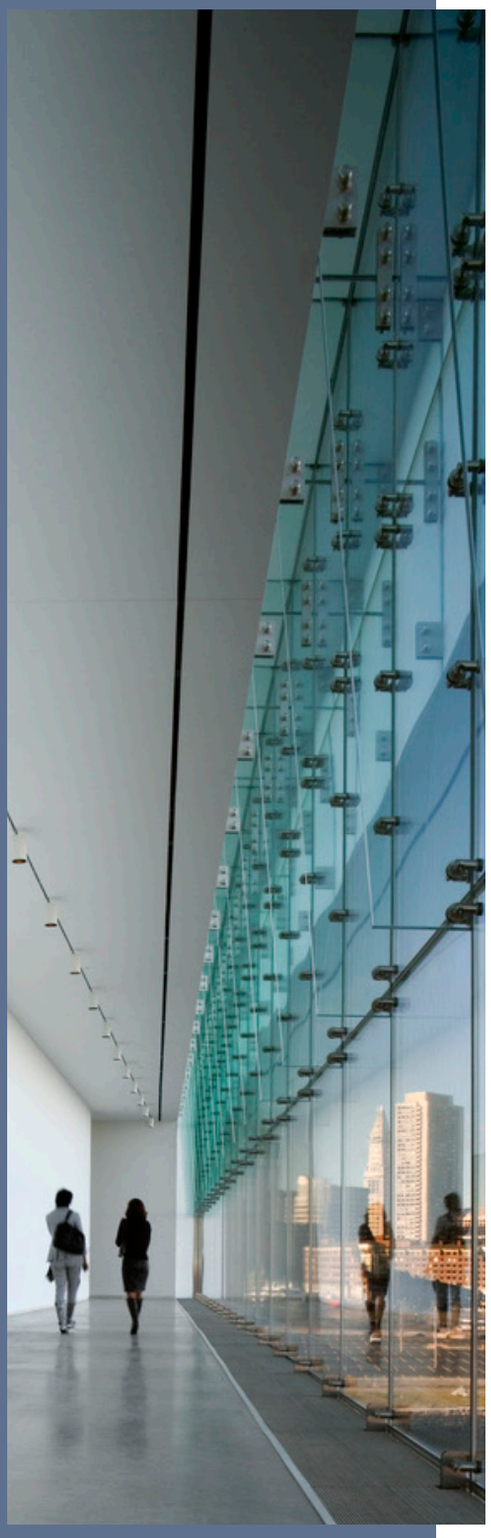


Figure 91 *Exterior Elevation*
Figure 92 *Interior Classroom*
Figure 93 *Interior Corridor*

Case Study: Institute of Contemporary Art

Institute of Contemporary Art

The Institute of Contemporary Art (ICA) represents a significant milestone in Boston's cultural landscape, being the first museum to be erected in the city in a century. The architects Diller Scofidio + Rendro designed the establishment to be comprised of both transient and enduring exhibition spaces, a multi-functional theatre with a seating capacity of 330, a dining area, a bookstore, facilities for education and workshops, and offices for administrative purposes. The location is flanked on two edges by the Harbour Walk, a publicly accessible walkway spanning 47 miles. The passage through the building is choreographed to provide a gradual and controlled visual experience. The view is presented in small increments, with the theater's underside offering a compressed perspective, the glass elevator serving as a dynamic background within the theatre, the galleries withholding the view entirely, and the crossover gallery finally revealing a panoramic vista. The media theatre, which is suspended beneath the cantilever, alters the surrounding context from the observer's sight, revealing solely the water's texture.

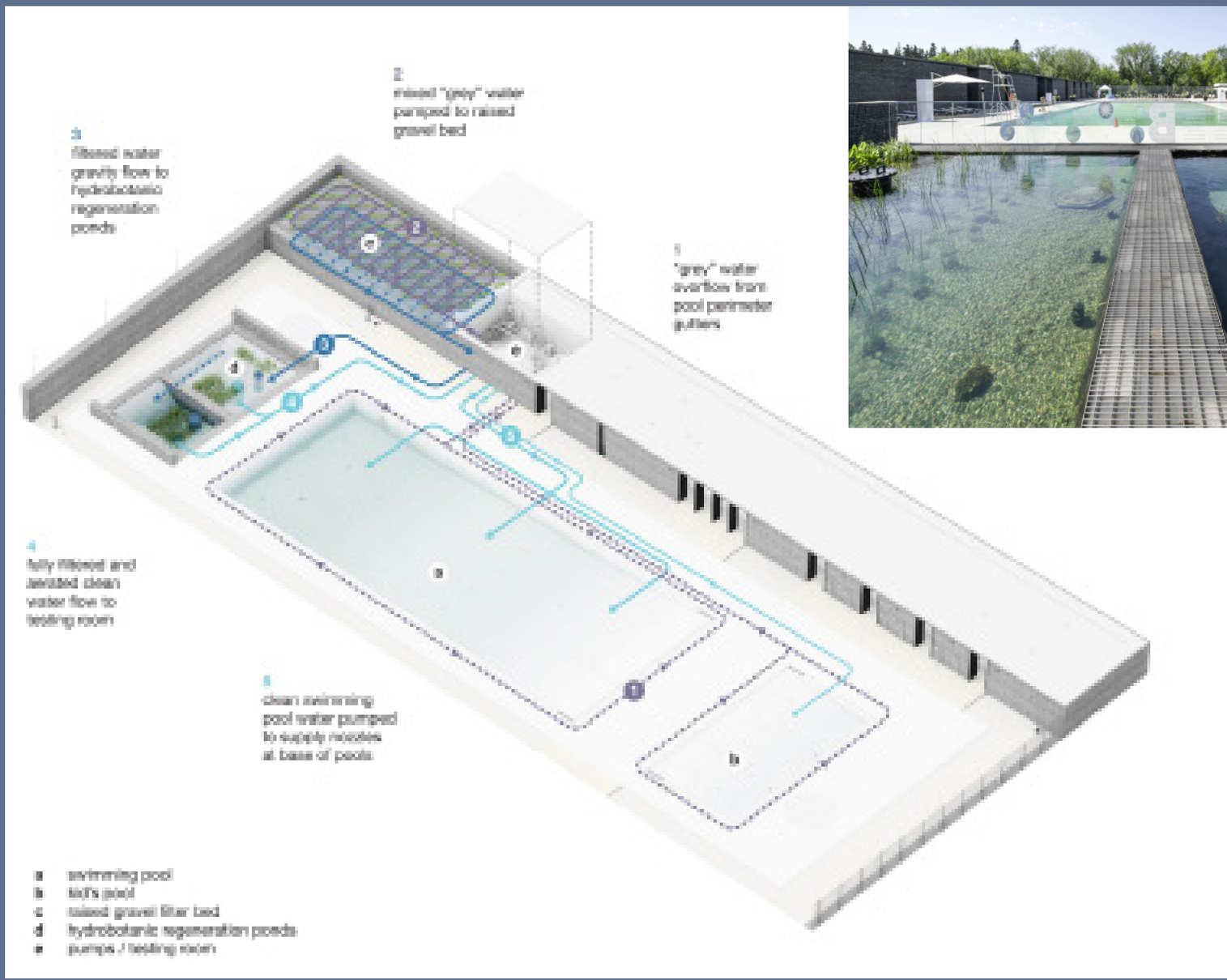

2
mixed "grey" water
pumped to raised
gravel bed
3
filtered water
gravity flow to
hydrobotanic
regeneration
ponds
1
"grey" water
overflow from
pool perimeter
gutters
4
fully filtered and
aerated clean
water flow to
testing room
5
clean swimming
pool water pumped
to supply nozzles
at base of pools
a swimming pool
b kid's pool
c raised gravel filter bed
d hydrobotanic regeneration ponds
e pumps / testing room

Figure 94 *Isometric perspective diagram*
Figure 95 *Exterior view of pool*

Case Study: Borden Park Natural Pool

Borden Park Natural Pool

The Borden Park Natural Swimming Pool (NSP) represents a significant milestone as the inaugural chemical-free public outdoor pool constructed in Canada. The project aimed at replacing a pre-existing pool that was constructed in the 1950s. The proposed replacement consists of a seasonal pavilion and a landscaped pool, which caters to up to 400 swimmers. The Natural Swimming Pool (NSP) faces the arduous task of ensuring water quality control, a crucial aspect of any public bathing facility. This challenge is further complicated by the facility's size and the technical intricacies involved in achieving an environmentally sound and organic filtration process. The architect gh3* combined water purification technologies that utilize stone, gravel, sand, and botanic filtering processes with a materials-focused approach to create a design that is both technically and aesthetically cohesive.

Figure 96 *Phasing parti diagram*

3.3

A Framework for Stewardship

3.3 Architectural Design

Reimagining a master plan for the former Dominion Bridge Company manufacturing site allows for the rehabilitation of an industrial site scarred by its past. The design proposal includes public space, a community building, a public pool, an archive center as well as a waterscape that communicates through remediation. Designs offer unincumbered access to the canal and facilitate the engagement of community stewardship. The site's design incorporates a water filtration system and waterfront that engages the practices of stormwater management and water filtration through the natural environment. The site acts as a collector and purifier. Cleaning water on site and then redistributing it to the Lachine Canal. This is in direct opposition to how the site functioned in the past. Known as one of the largest polluters along the Lachine Canal, a core component of its manufacturing process would be to extract water from the canal for manufacturing and then discharge waste and effluent back into the water. The re-imagined site offers the ability to reclaim its relationship with the canal.

The process of designing and constructing the quilt, directly influenced the programmatic decisions of the master plan, the approach to adaptive reuse and building design. Guided by the defined grid system allows for both dimensional flexibility and constraint with respect to understanding the various scales of the site. The master grid was broken down into secondary and tertiary grids that facilitated the restructuring of the site from its manufacturing use to a pedestrian public. The site houses three buildings previously used for the manufacturing of large steel and iron structures. The structures include vast spans and a relatively open floor plan that are not conducive to creating intimate space to foster and engage community dialogue.

The various grids defined by the dissect enabled space to be imagined in human proportions. A series of diagrams were created to examine the various grids and assess their dimensions in relation to frequent activities that occurred in public spaces. Similar to the process seen in the making of the quilt. Modules were created

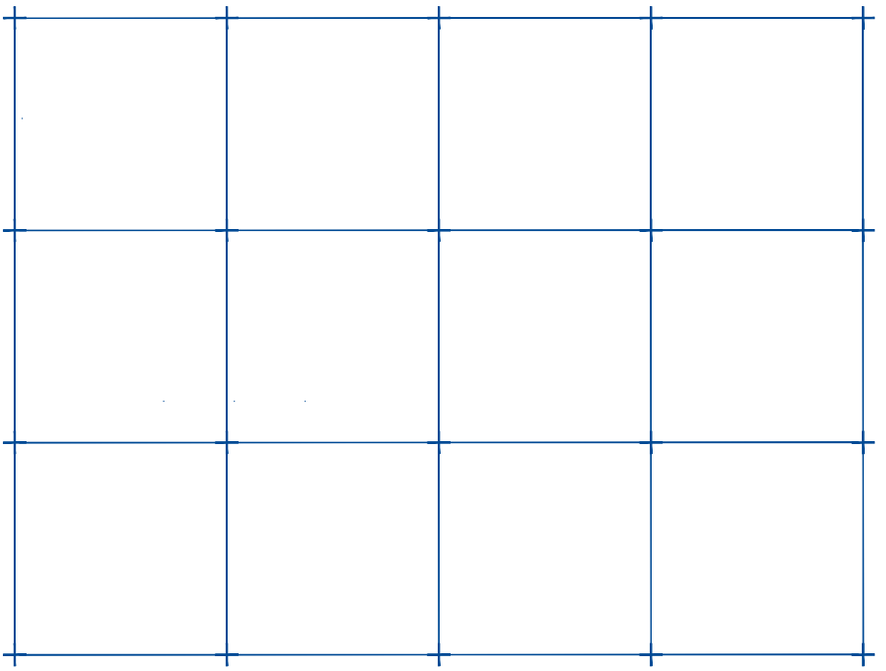


Figure 97 *Primary grid based on the quilt*

that could be repeated and customized at the discretion of the designer. These modules allowed space to be imagined and resolved quickly in the early stages of the design. This form of freedom was only made possible by the establishment of grids, which is the very first step in creating a quilt. Similarly, the program and spaces of the community building and pool house were dictated by the grids.

The site was designed by superimposing multiple grids and defining their function and order. The quilt blocks were put behind the various grids. The varied patterns and colours were assigned to landscape plans on the property and were used to improve paths and canal access. Because only portions of the blocks were unfettered by buildings or other pre-set landscape components, the varying geometry of the blocks provided a sense of unpredictability within the site. This allowed the quilt design to take up space within the site, forming pavement patterns and allowing the embodied oral histories of the block pattern to be physically portrayed on site.

In essence, the quilt served as a reference guide for the various elements of the site and directed the master plan and building design. To account for the disparity in scale, specific interpretations were made that could not be directly correlated with the quilt. Nonetheless, the fundamental principles of quilting were applied directly to the design of the master plan, waterfront, and building design. Implementing quilting as an architectural framework.

From a traditional Western standpoint, "stewardship" refers to the administration and oversight of physical structures, real estate, and organizational resources, implying the practice and management of one's owned property. Examining the concept of "stewardship" from this historical perspective undoubtingly reveals colonialism's intricate and contentious consequences. More recently, there has been growing acknowledgement of the role played by Indigenous nations as the original stewards of the land and water and their enduring connection to both the environment and their communities.[87]

As demonstrated in the analysis of Little Burgundy and Point St. Charles, the failure to contextualize redevelopment policies within a broader cultural and historical framework can permanently destroy cultural environments, leading

87 Guelph Arts Council, 'Sewing Stewardship – Unravelling Colonial Histories and Mending Land with Care and Restoration', Guelph Arts Council, 29 July 2021, https://guelpharts.ca/uncategorized/sewing-stewardship-unravelling-colonial-histories-and-mending-land-with-care-and-restoration/.

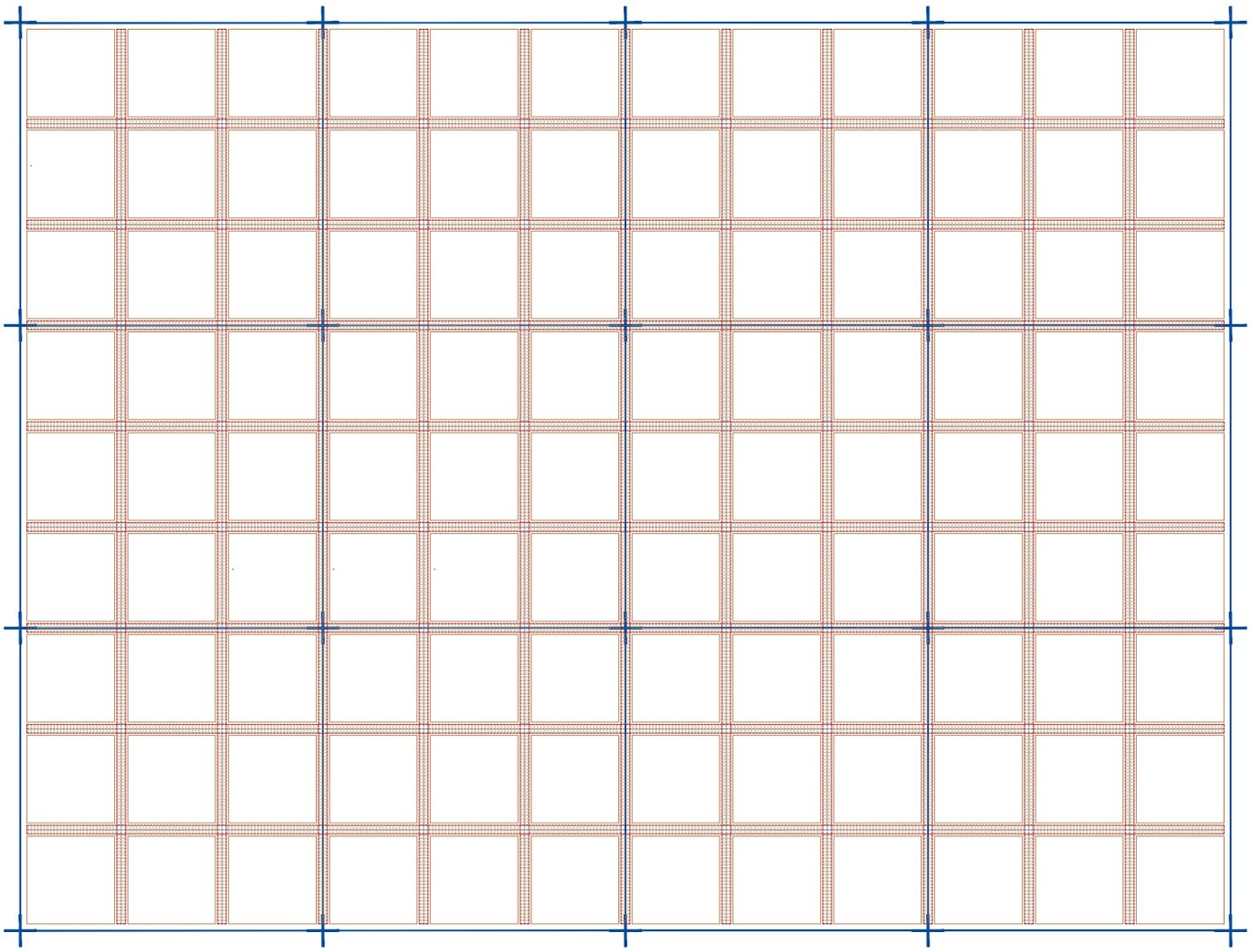
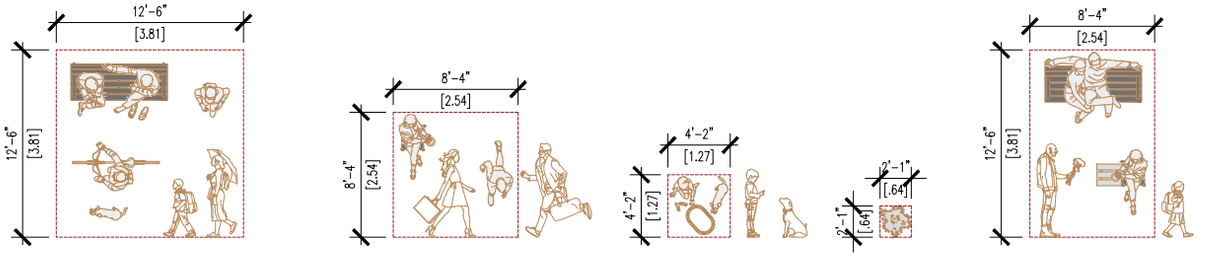


Figure 98 *Established grid system for the site*

to redevelopments that are detached from the adjacent urban communities.[88] Examining the methodologies of oral histories and quilting as a tangible means to include voices of the marginalized and often unheard is how this thesis plans to engage a framework of stewardship within Lachine -Est.

The proposed community facility would replace the former "Erection Storage Building" of the Dominion Bridge Company. The original intent was to store and assemble large steel and iron components of notable North American bridges and buildings. In the context of this thesis, the buildings will serve as an adaptive reuse project, community building offerings, social resources, a community kitchen and café, an outdoor garden, a quilt workshop, and office space for community entrepreneurial endeavours. The proposal aspires to curb the impacts of eco-gentrification felt by communities vulnerable to the social-economic effect of deindustrialization followed by the state-led Greenify projects. Lead quilting as an architectural framework, the program proposal highlights methods that push for community engagement and activism, offering the opportunity to establish community dialogue. The proposed design incorporates ecological practice in adaptive reuse. The intent of the design is the maintain as much of the existing

88 Bliek and Gauthier, 'Mobilising Urban Heritage to Counter the Commodification of Brownfield Landscapes'.d'aménagement et de politiques publiques, qui sont le lot des projets de requalification urbaine. Dans le présent contexte post-fordiste, une meilleure intelligence de la signification des paysages hérités de l'ère de la production industrielle et rendus désuets par la désindustrialisation et la restructuration économique est de nature à conduire de meilleures pratiques de reconversion urbaine. Nous proposons une approche—la morphologie urbaine—qui produit des connaissances relatives aux structures urbaines héritées ainsi qu'à l'ensemble des relations spatiales et processus de transformation dont ces structures sont le reflet et le produit, afin de mieux asseoir les efforts contemporains de revitalisation urbaine. L'article discute enfin en quoi l'approche morphologique proposée, qui appuie la volonté de prendre acte des considérations relatives à la sauvegarde du patrimoine industriel dans les pratiques et discours relatifs au développement des friches industrielles, est à même d'éviter l'appauvrissement irréversible de leur valeur culturelle qui résulte de leur relégation au statut d'espace marchandisé, tout offert à la consommation éphémère. AbstractThis paper proposes that recognising and leveraging the heritage value of brownfield sites may open the door to new solutions to planning, policy, and design challenges common to regeneration projects. In a post-Fordist context, a better understanding of the historical significance of inherited landscapes of industrial production, rendered obsolete by deindustrialisation and economic restructuring, can lead to more appropriate forms of conversion. We propose an approach—urban morphology—that leverages knowledge of urban structures, their relationships, and the processes through which they were transformed, to create a matrix capable of guiding regeneration efforts. The promise of this approach is then discussed in the context of integrating heritage preservation considerations into brownfield redevelopment practices and discourses as a means for avoiding the reduction of such sites to landscapes of consumption.","container-title":"Canadian Journal of Urban Research","ISSN":"1188-3774","issue":"1","note":"publisher: Institute of Urban Studies, University of Winnipeg","page":"39-58","source":"JSTOR","title":"Mobilising Urban Heritage to Counter the Commodification of Brownfield Landscapes: Lessons from Montréal's Lachine Canal","title-short":"Mobilising Urban Heritage to Counter the Commodification of Brownfield Landscapes","volume":"16","author":[{"family":"Bliek","given":"Desmond"},{"family":"Gauthier","given":"Pierre"}],"issued":{"date-parts":[["2007"]]}}],"schema":"https://github.com/citation-style-language/schema/raw/master/csl-citation.json"}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8'-4"
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12'-6"
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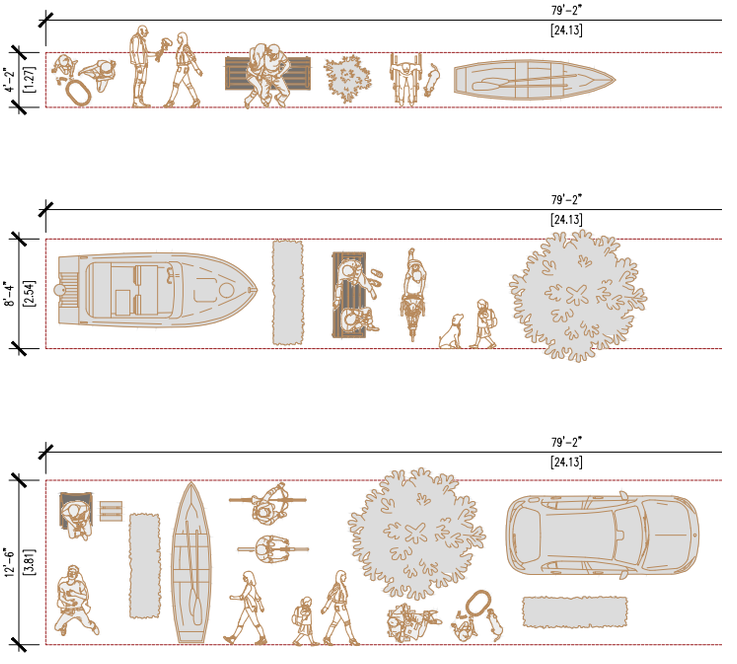
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structure as possible. The cut within the building engages with the design of the master plan and is in keeping with the methodology of quilting expressed earlier in this section.

The design of a public pool is proposed in place of the former Bridge "Cab House". Within the low-rise building, a pool is imagined. As stated in the work by Christie Pearson, bathing has historically been a communal activity. Combining cultural rituals, architectural forms, and the natural environment, bathing practices are a synthesis of the three elements. The act of bathing is a gateway into the intricacies of cultural practices. As post-industrial cities attempt to reclaim industrial waterways for new types of development, there is a resurgence of public bathing as urban infrastructure. Architecture facilitates bathing, particularly when the activity is shared. The notion of architecture and bathing challenges the heteropatriarchal and colonial assumptions underlying contemporary architecture.[89] By this definition, the act of bathing is intrinsically linked to oral history. The method of gathering and preserving cultural rituals through the embodied knowledge of swimming and the voices of communities are revealed as they relate to water. As a result, bathing has a direct means to water heritage.

The design for the building addresses the ideals of adaptive reuse and oral histories. Utilizing the existing structure as much as possible. Similar to the design of the community building, the design was derived from extensive site analysis of the quilt. Adhering to the framework established from the quilt making, the building incorporates two indoor pools and two exterior reflection pools, which are converted for skating during the winter months.

The master plan for the site employs a design with multiple layers of engaging

89 Pearson, *The Architecture of Bathing : Body, Landscape, Art*. P.1-8

Figure 99 *Existing site plan*

Figure 100 *Proposed site plan with primary grid*

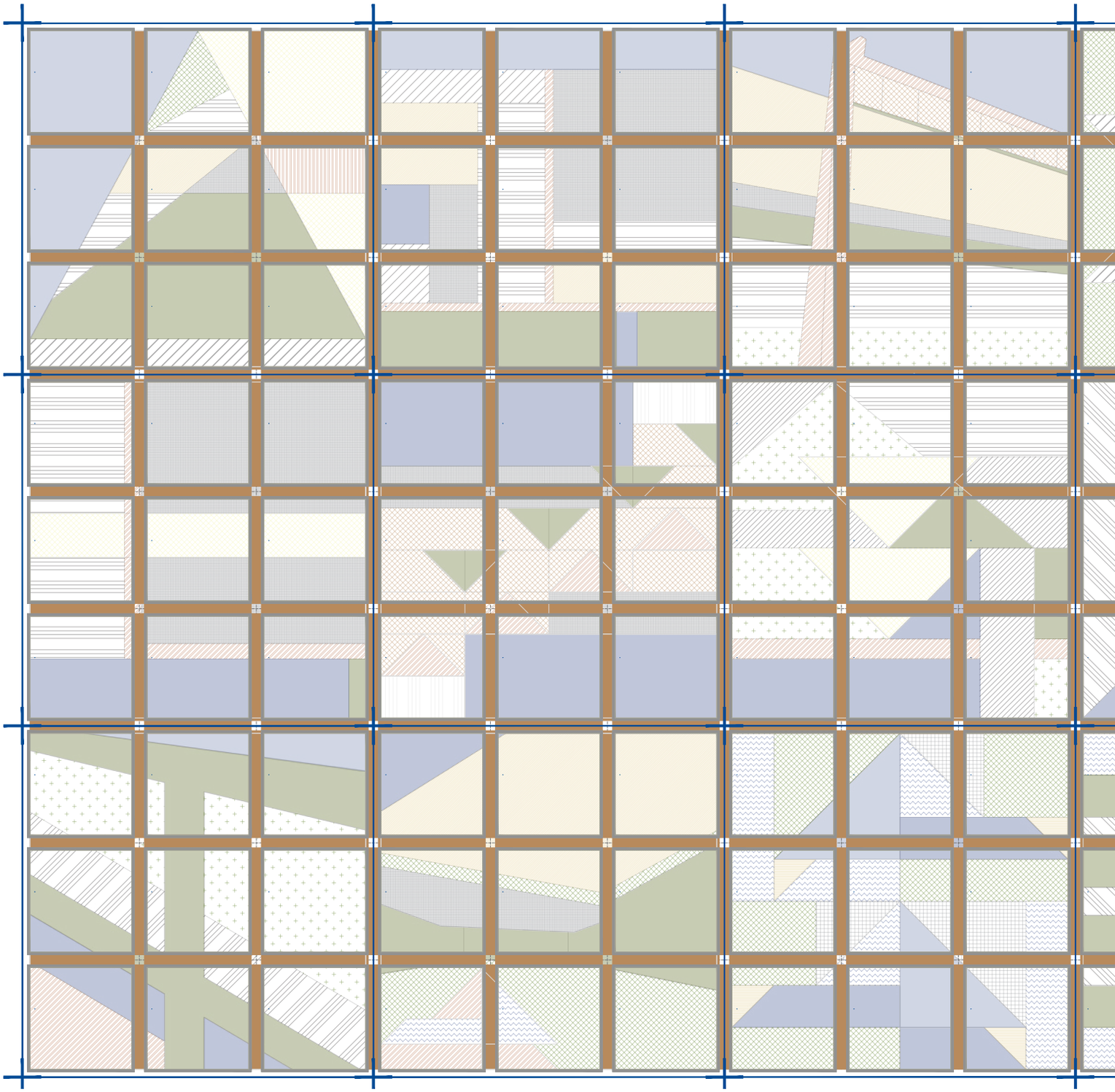


Figure 101 *Full quilt with grid system as site plan pavers*

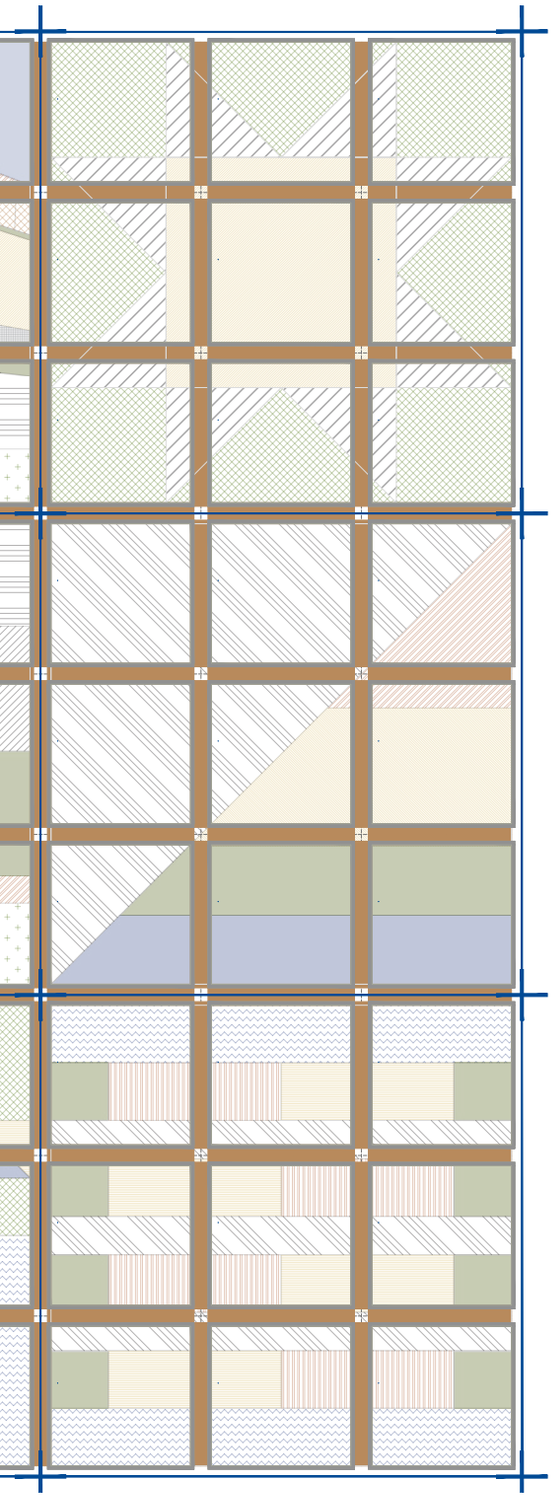


Figure 102 *Axodigram of grid system*

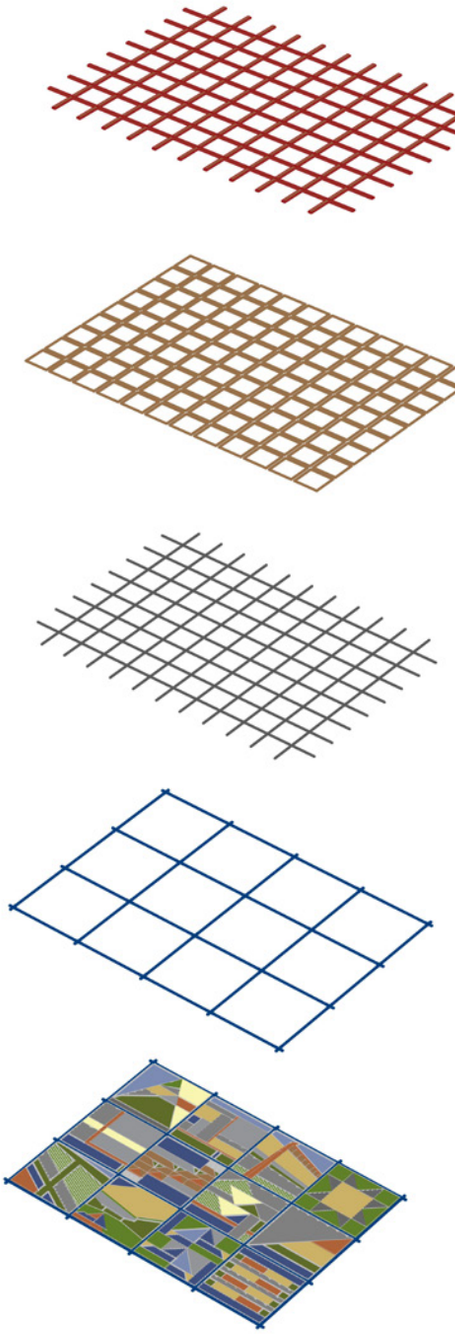
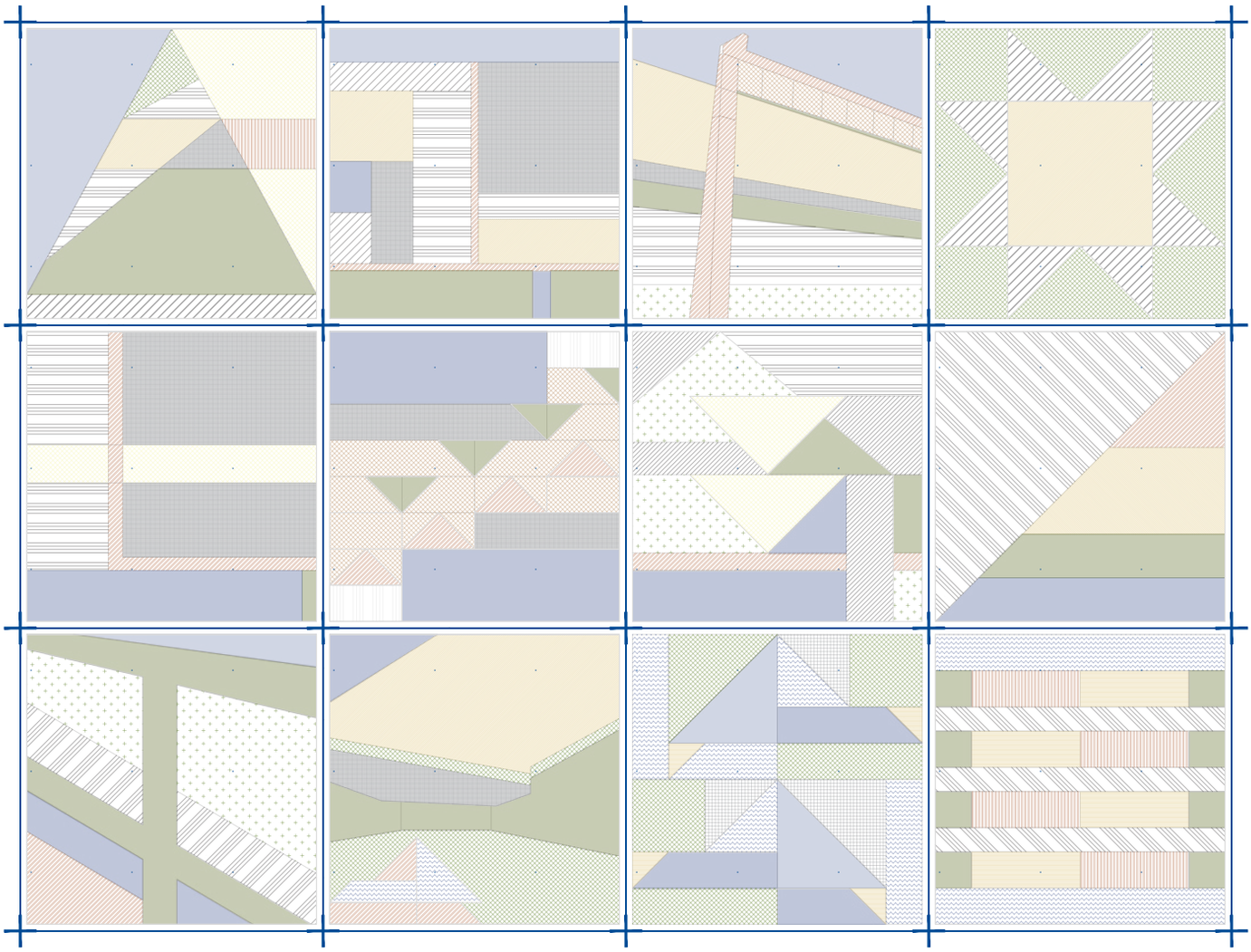


Figure 103 *Proposed Site Plan*

Figure 104 *Quilt Overlaid on the site*



with the residents of the community, promoting community empowerment and stewardship. The waterfront along the canal hosts a series of pools where a filtration system filters contaminated water from the site to the canal. The water filtration system sites just below the grade, collecting water from a catch basin built into a permeable paver within the site. Water travel through the main gride of the site to the water filtration system at the base of the canal through a series of pools that filter the water before it is discharged in the canal as clean water. contract

The process used in creating the quilt was then applied to the property of the former Dominion Bridge Company. The same grid system was employed, except it was scaled by a factor of 100 to accommodate human proportions and landscape conditions. Taking from the process, the master grid was then a secondary and tertiary grid system created from the seam allowance and stitch lines found in the quilt. Once scaled, these seemingly arbitrary lines transformed into a linear system that could be applied to the site in terms of activating pedestrian paths, access routes to the canal and defined quadrants for building programs. The grid system became a way of mapping out the critical characteristics of the site, which in turn determined how the site could be manipulated and designed.

The dominant space on the site defined by the grids creates the opportunity for a less restrictive programme. Small portions are then converted to hardscape and softscape surfaces that replicate the quilt block's design. The buildings on the site are impacted by the severe cuts and division, which sometimes allude to the destruction of substantial portions of the structure. These incisions and divides not only permit the repurposing of the programmatic layout but also create a pathway for new programs. The site's history as a manufacturing facility does not allow for

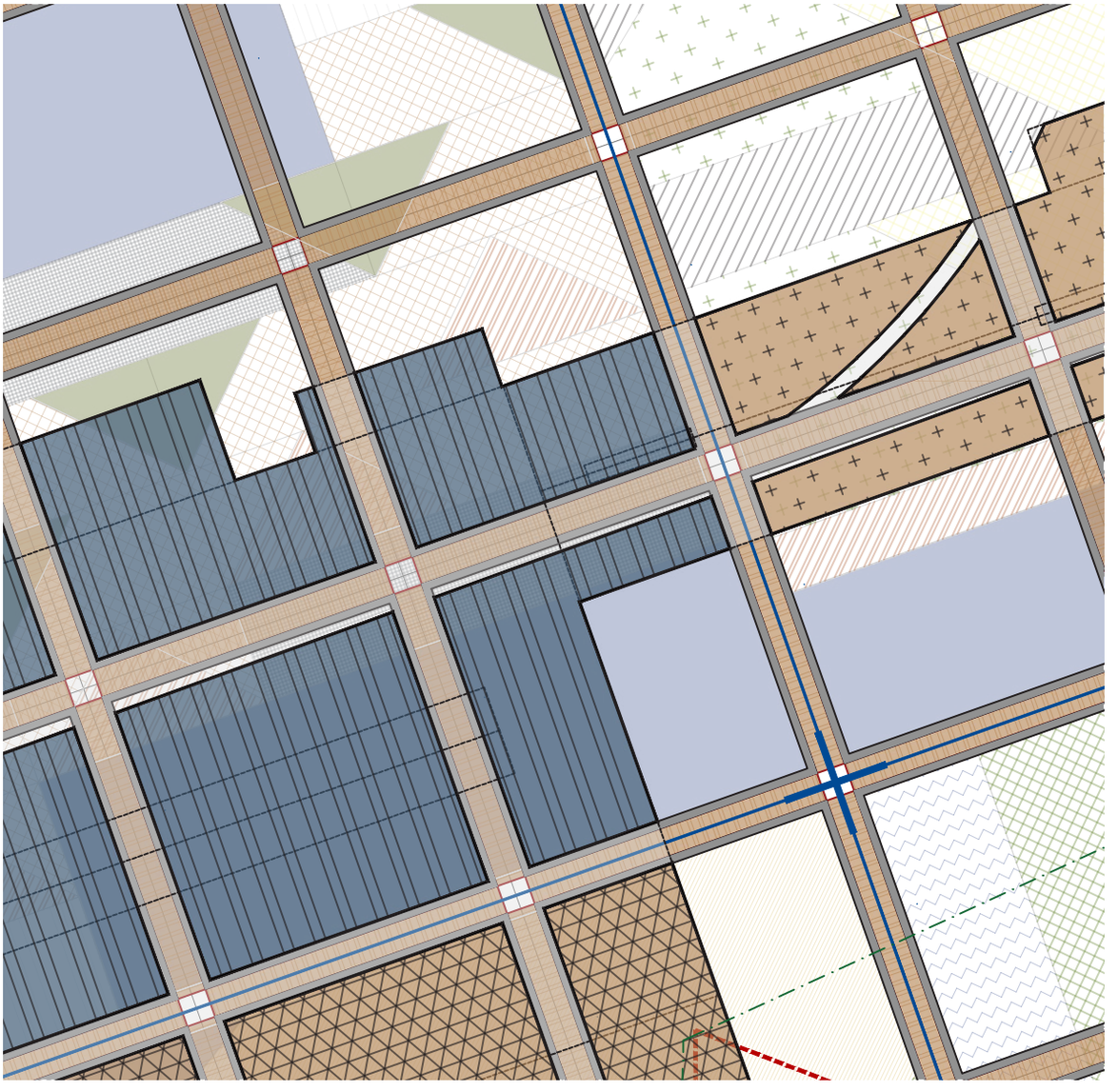


Figure 105 *Detail of Site plan paver with Quilt overlay*

a simple transformation to a more pedestrian scale. As it is meant to house large segments of material. The buildings on site are large in scale and provide long spans of structural design; thus, the space must be divided and repurposed to scales more accommodating to community engagement and pedestrian programmes.
The buildings on site are proposed as adaptive reuse. Maintaining as much of the original building as possible, the building as they exist today are pieced together from various sources of scholarship photo documentation and site visit analysis. As no architectural drawings of the existing condition were accessible. This method of acquiring information is in keeping with the method of quilting; the collecting of various materials and piecing them together to create a whole.
Within the existing building, the program to establish community engagement of a community building in proposed in place of the existing "Erection Storage" building located and utilizes the embodied oral histories of the site workers and residents adjacent to mobilize oral histories and quilting as a means to establish a framework for architecture design that supports community stewardship of the site as it relates to the Lachine Canal is a decolonized approach.

Figure 106 *Plan of Community Building*

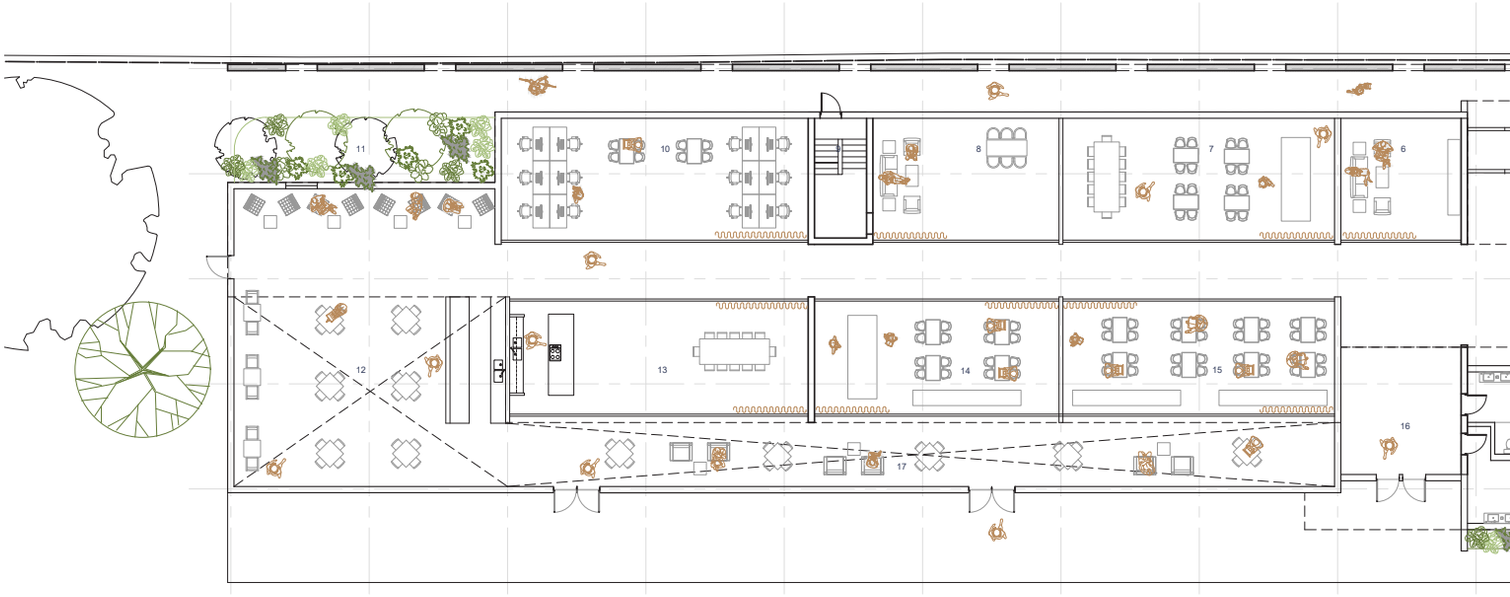
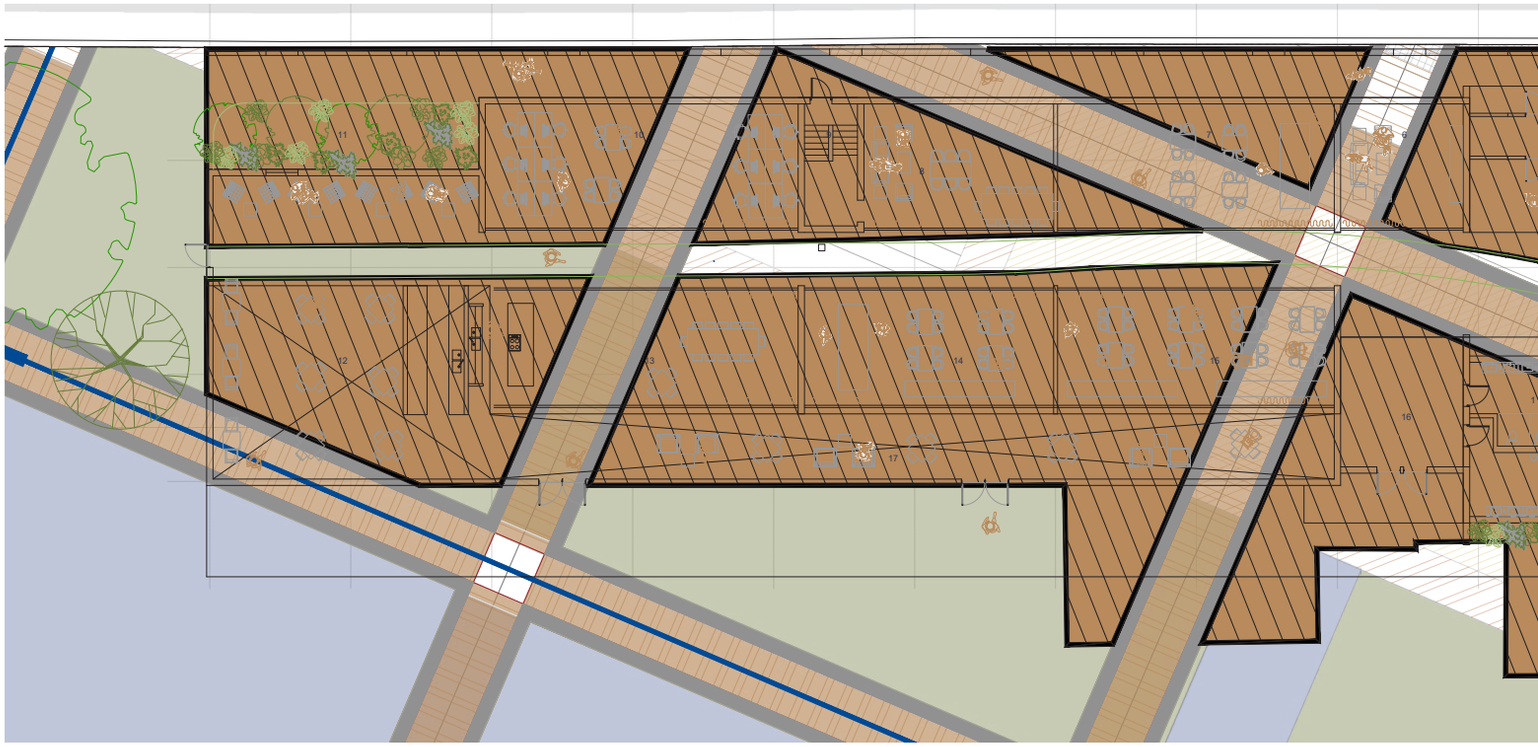
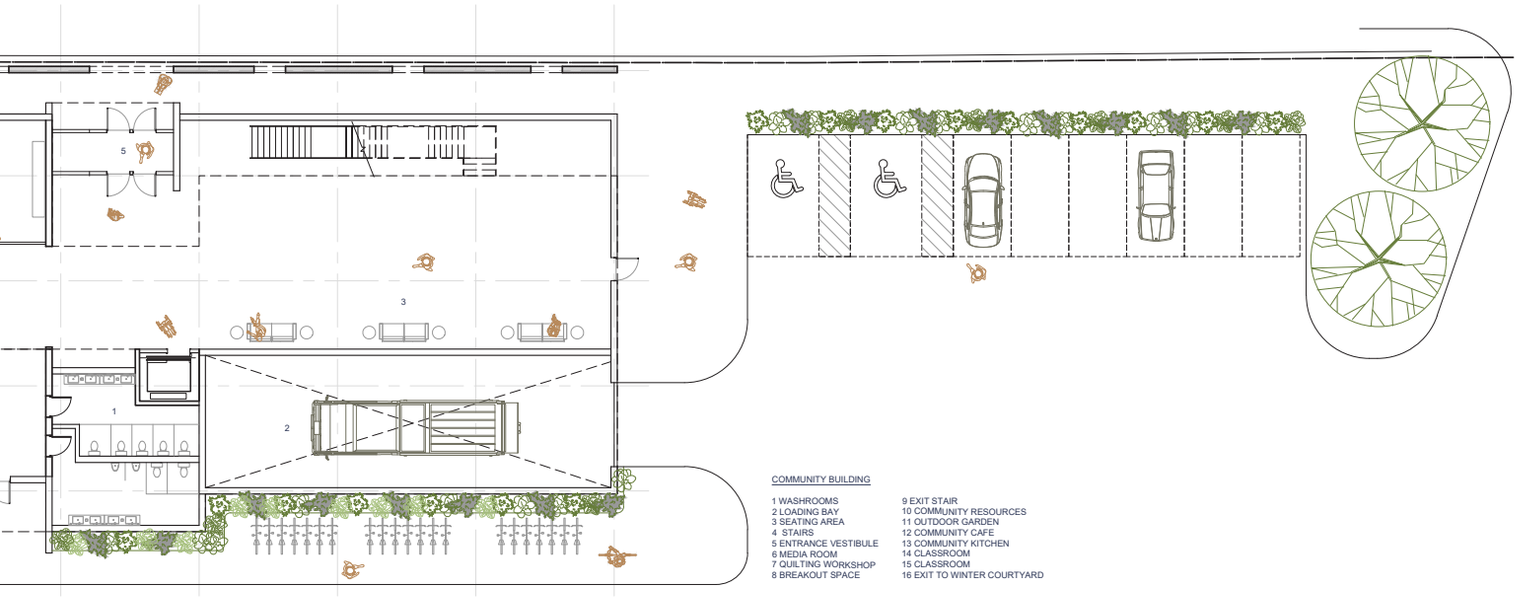


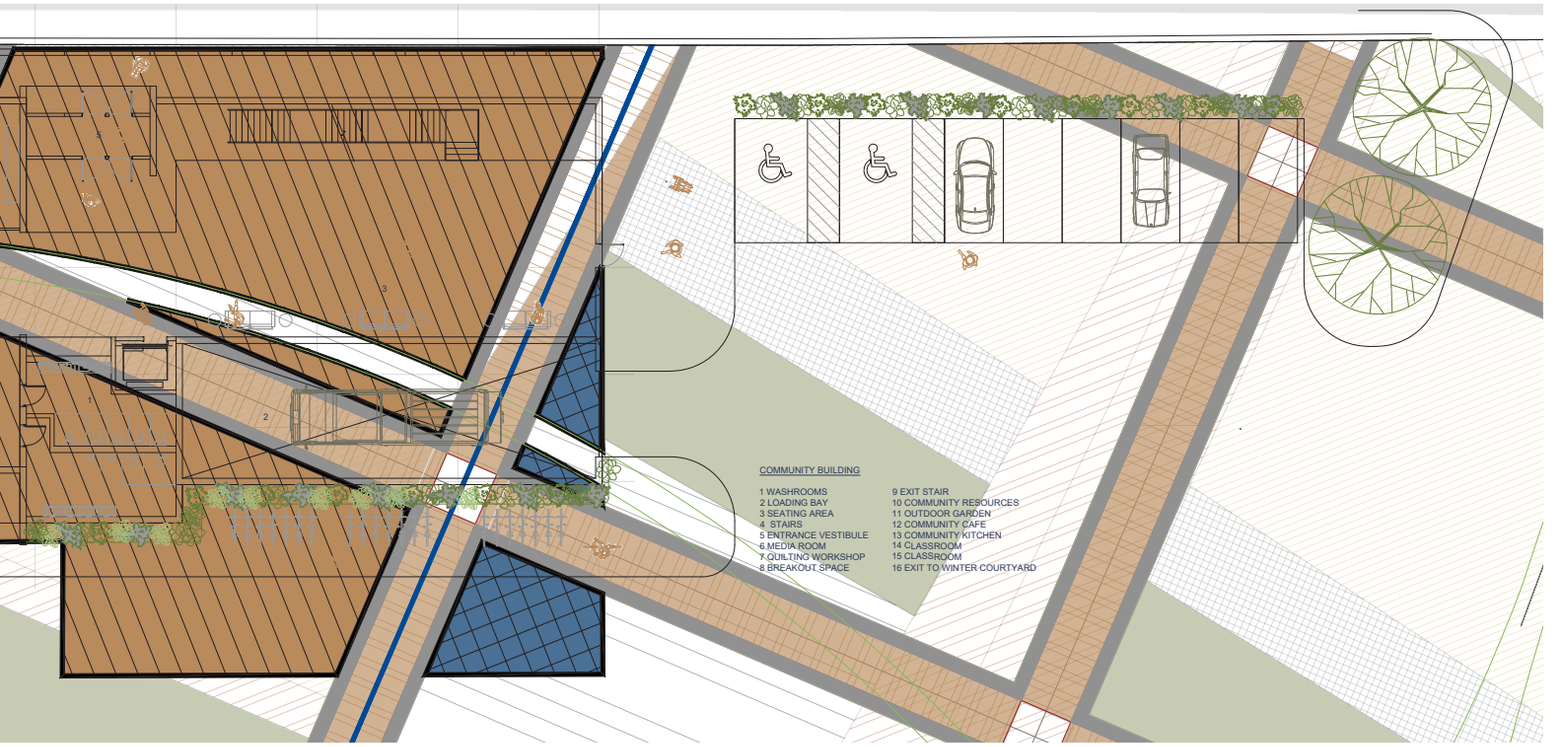
Figure 107 *Plan of Communitte Building with site plan contect*





COMMUNITY BUILDING

1 WASHROOMS	9 EXIT STAIR
2 LOADING BAY	10 COMMUNITY RESOURCES
3 SEATING AREA	11 OUTDOOR GARDEN
4 STAIRS	12 COMMUNITY CAFE
5 ENTRANCE VESTIBULE	13 COMMUNITY KITCHEN
6 MEDIA ROOM	14 CLASSROOM
7 QUILTING WORKSHOP	15 CLASSROOM
8 BREAKOUT SPACE	16 EXIT TO WINTER COURTYARD



COMMUNITY BUILDING

1 WASHROOMS	9 EXIT STAIR
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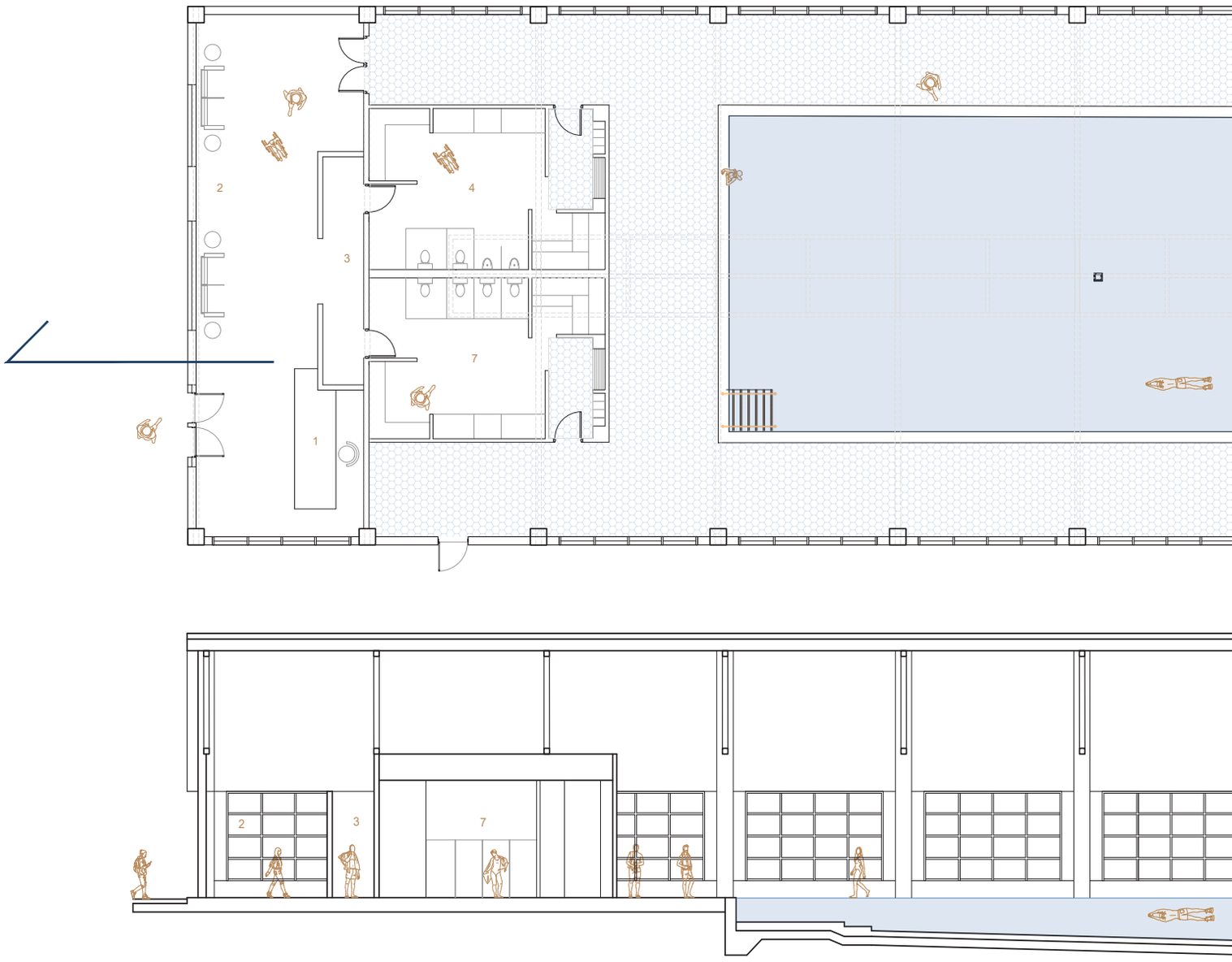
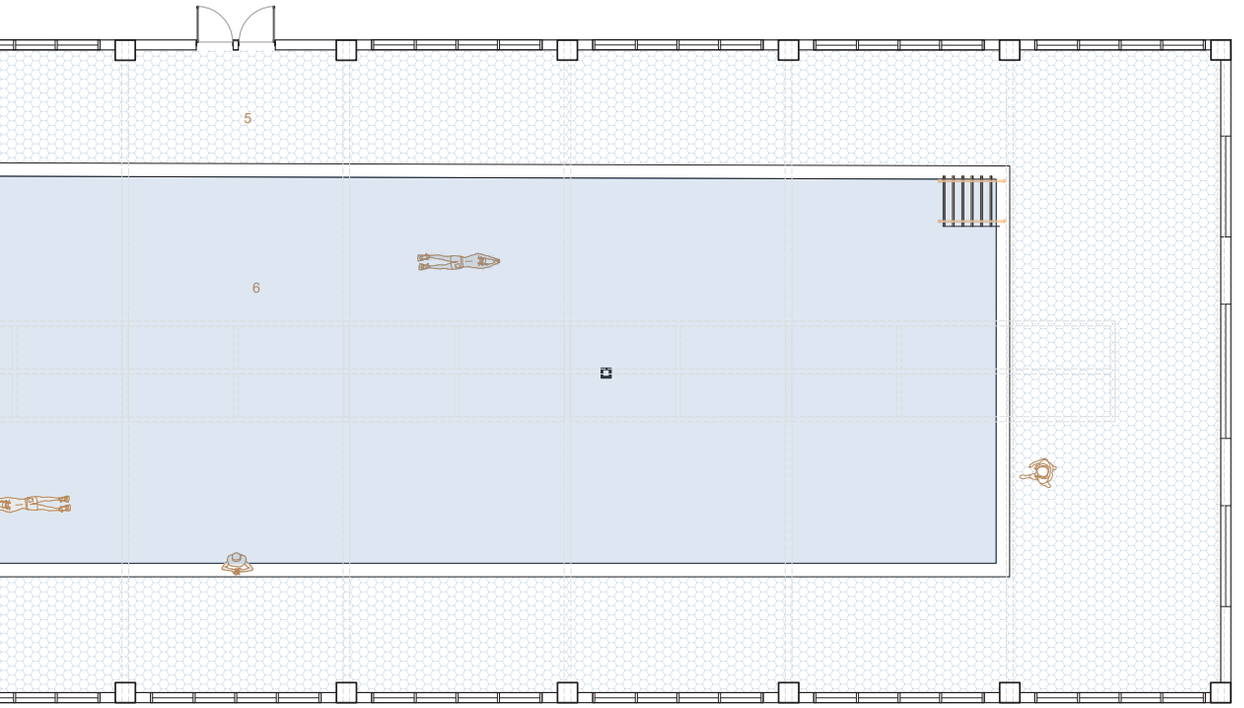
7 QUILTING WORKSHOP	15 CLASSROOM
8 BREAKOUT SPACE	16 EXIT TO WINTER COURTYARD

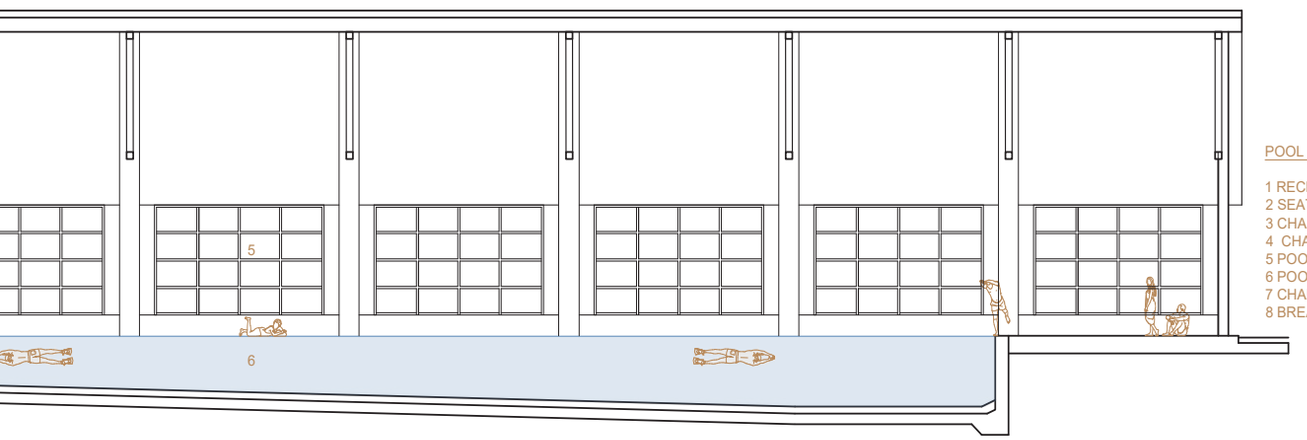
Figure 108 *Plan and section of Pool House*





POOL BUILDING

1 RECEPTION
2 SEATING AREA
3 CHANGE ROOM VESTIBULE
4 CHANGE ROOM
5 POOL DECK
6 POOL
7 CHANGEROOM
8 BREAKOUT SPACE



POOL BUILDING

1 RECEPTION
2 SEATING AREA
3 CHANGE ROOM VESTIBULE
4 CHANGE ROOM
5 POOL DECK
6 POOL
7 CHANGEROOM
8 BREAKOUT SPACE

Figure 109 *GRAME (Groupe de recomendation et d'action pur un meilleur environnement) Environmental group hosted workshop in Lachine-Est*

GRAME

Figure 110 *Boomerang Bag; fabricated by at Lachine -Est committee sewing workshop*

Figure 111 Areial view of Lachine-Est district

Conclusion

Through the process of revitalizing industrial landscapes and infrastructure, as leisure and tourism attractions, the post-industrial landscape of the Lachine Canal has become increasingly appealing for private investors and tourists, ultimately altering the fabric of adjacent neighbourhoods to the point beyond recognition from an environmental, social and economic standpoint.

Well-intended green initiatives to revitalize aged and desolate neighbourhoods often have devastating impacts on the very people they are meant to serve. Leading to the direct and indirect displacement of the community's more vulnerable residents. This examines state-led initiatives as they wield the most power and affect a greater degree of the population. It is believed that policies rooted in inclusivity and due diligence, have the opportunity to mitigate such effects of deindustrialization from an environmental, social and economic standpoint.

The intent of the research was to question, **In what capacity can oral histories transform the discipline of architecture?** ***And*** **How may architecture mobilize water as an agent to contribute to community empowerment and stewardship?** Through an approach of interdisciplinary theory and place-based investigation, and an understanding that quilting is a form of oral history. It is determined that oral history has the capacity to engage in architecture, first, through the act of providing a platform for marginalized voices and constructing narratives around individuals, topics, occurrences, and artifacts that have been excluded from architectural, and historical documentation. Second, the act of documenting experiences and interactions with buildings over a period of time can add a dynamic fourth dimension to a structure that is otherwise static in its three-dimensional form. And third, it can result in the development of a distinct form of architectural design, characterized by its embodiment, performative nature, and emotional resonance.[90]

90 Gosseye, Stead, and Van der Plaat, *Speaking of Buildings : Oral History in Architectural Research*. p.26

Oral histories are represented through the act of quilting, embodied within the artifact of the quilt is knowledge passed on through generations. Exemplified through the methods of traditional path work and contemporary paper piece methods, narratives and embodied knowledge are transmitted through the object of a quilt. When the method of quilting is imposed through architectural analysis, it is possible to convey narratives that are nuanced and hold intricate histories. The process alludes to a type of resistance to contemporary architectural analysis, research and design. Structures of power are challenged beyond their status quo to offer new initiatives and forms of practice to engage with the underrepresented population whose voices are silenced or have gone unheard. In addition, embodied knowledge of oral history is used as a teaching tool to instill generational knowledge of design and stewardship.

Although the research was successful in showing water as a tool for community empowerment and stewardship. The theory of the design is only as influential as the policies and structures that support them. As stated in McDowell's text, "socio-economic policy must parallel design solution". So there needs to be more effort placed on establishing policies that can support innovative design theory and solutions for better community sustainability.

The contribution of this thesis has been to the test and reveal by the means of quilting, how traditionally marginalized groups within the realm of contemporary architecture, urban planning and mobilizing can establish a framework for community engagement and resistance to traditional practices that are exclusionary and a form of activism to empower communities at a grassroots level. Laying the foundation for the future sustainability of community resources. The research challenges power structures to go beyond their status quo to offer new initiatives and form practices to engage with the underrepresented populations

whose voices have been gone unheard. Through the study of pedagogy, this thesis utilized the methodology of oral history through the craft of quilting to provide a platform for marginalized voices to construct narratives, to document experiences and interactions with buildings that add a dynamic fourth dimension and offer an architectural design that is embodied, performative and emotional. In addition, utilized the embodied knowledge of oral history in quilting as a teaching tool to instill generational knowledge supports an approach of decolonized community stewardship.

Using quilting as a method of architecture sets not only operational assumptions and priorities in the sense of graphic representation and interpretation but also provides spatial relationships and pragmatic elements of design not found in traditional forms of architecture. The lack of diverse community engagement in the decision-making process can lead to the displacement of marginalized groups and the erasure of their histories and cultures. Therefore, it is crucial to involve all participants in the planning and implementation of such initiatives to ensure their sustainability and positive impact on the community.

The investigation of this thesis was inspired by the lives and stories of the residents, workers and communities that are been gravely affected by the greenifying of the post-industrial landscape of the Lachine Canal. It is the hope of this thesis to encourage further exploration and representation of Indigenous, Black and female voices within architectural discourse. Quilting is a convergence of the three cultures and demonstrates their contribution to the epistemology of architecture.

Still Waters Run Deep

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