Echoes of Industry:

Reinterpreting Artifacts of The Lachine Canal

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

Montreal's Lachine Canal, once the cradle of Canadian industry, is now riddled with industrial ruins, testaments to its productive past. Since the canal's closing in the 1970's, different attempts were made to reinterpret its role within the city. Contaminated sediments pollute the manufactured waterway, now stagnant and derelict. These toxic remains impact the redevelopments and heritage parks of the canal corridor. In the absence of any holistic future vision, these conditions pose a threat to local inhabitants and industrial artifacts. Meanwhile, Parks Canada's approved heritage status pertaining to certain parts of the canal, further contributes to the segregation of the corridor into sporadic developments and static voids.

Antoine Picon refers to these networks of technological remnants as 'Anxious Landscapes' – landscapes of artifacts that exist in the realm between technological obsolescence and ruin in the process of returning to nature. These landscapes are charged with industrial ruins and their residues in decay, perceived as waste, make us feel ill at ease with them. Portions of the canal and its industrial artifacts have been identified as having significant heritage value, but what productive possibilities do these heritage artifacts hold beyond their identified status? What possibilities do these imaginative playgrounds possess to reshape the corridor beyond its static blight?

In abandoned industrial icons such as the Canada Malting Plant, resides the potential to address the remediation and reinterpretation of the corridor. The thesis investigates whether interaction with these industrial remnants can permit a tactile connection that allows us to uncover and explore the significance of such landscapes in a larger temporal perspective that considers past, present, and future. It proposes to reveal and express the historical development of the canal, exploring remedial solutions and spaces of community participation, energizing the Lachine Canal and its anxious landscape.

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Anne Bordeleau for her guidance, support, and thoughtful criticism that greatly helped to shape this thesis. Her depth of knowledge made this a fruitful learning experience. I would also like to thank my committee members, Ryszard Sliwka and Marie-Paule MacDonald, for their thoughtful and inspiring discussions.

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To my family, my mom in particular, your generous support is greatly appreciated. I will forever be grateful for your encouragement.

To my Dad,

CONTENTS

LIST OF ILLUSTRATIONS

Images by author unless otherwise noted.

PRELUDE

TRAVERSING THE CANAL

On my first journey to the Lachine Canal I was overwhelmed by its decay. Rust bled from every bridge and worn brick structures were the surviving remnants of a former era. I found myself imaging what it would be like to stand here one hundred years ago when the canal was bustling with the activity of loading and unloading goods. What did it feel like to peer at massive shipping vessels nearly brush against the canal's edge as they made their way down the St. Lawrence bypass? The sounds of sailors manning their vessels must have been wondrous as they passed through the canal's locks, finally anchoring at their destination to unload or load goods with massive floating cranes; Similar wonder was undoubtedly expressed at seeing the novel railway lines and bridges, as trains whistled by. This immersion in industry and production was a way of life, and the very livelihood of the residents of St. Henri on the Lachine Canal – a way of life seldom experienced today.

As I passed along the canal path the true nature of the canal at present was exposed. New developments dismantled the archaic architecture in favour of new condominiums. Parkland maintained by Parks Canada and derelict open sites were an invitation for dens of homeless people to create a sanctuary of temporary structures made from salvaged materials. Signs warned of the potential dangers of swimming or fishing, revealing the toxicity of the seemingly harmless canal. Though the success of the canal network as a leisure path is unquestionable, the blatant contrasts exposed chaos in the corridor itself.

Exiting Montreal Harbour, the canal industry in operation droned and trains loudly passed overhead. It seemed as though the remnants of the industrial sector remained. However, as my journey progressed I could see the changes of the encroaching modern city. Nearby construction was underway laying foundations for a large condominium while brick buildings were slowly demolished. This segment of the canal path was

bustling with activity, though the canal itself was silent. Continuing down the path, the cyclist activity steadied and I was faced with a large group of pedestrians. It wasn't a swarm of tourist seeking industrial relics, but a large group of local residents at the Atwater Market shopping for goods. This must have been, at best, a glimpse of what the old canal felt like as I passed old warehouses smelling bread and flour in the air wafting from the bakeries of the Atwater Market. As the activity peaked, the path abruptly vanished forcing me onto a railway route. I followed the tracks to the nearest road where amongst old workers residences, I found myself entirely alone in silence. I kept walking along the street catching glimpses of the canal between buildings, confirming that I was moving in the right direction. As I glanced far in the distance I saw a structure that rivalled the height of the Atwater Market. It towered above the houses inciting my curiosity to discover this massive structure. The path suddenly reappeared and I found myself passing by even more industrial relics, eventually standing in front of the Canada Malting Plant identified by a graffiti coated Canada Parks sign. Though the path ahead continued under massive highway overpasses, I was content to remain and ponder this complex.

After reading Tim Edensor's *Industrial Ruins*, I began to understand the excitement and curiosity these structures inspire. In *Industrial Ruins*, the relics are described as having a living story – the captured life and activity of its day to day process that lend a greater understanding and possibilities in experiencing them.[1] The fear and excitement of attempting to break through the barriers drew me in further, calling to mind this quote, " … [T]he ways in which ruins are used to show that assumptions about their social uselessness, derived from assignations based on economic value and utilitarian notions of order, are groundless."[2] Segregated from its surrounding fabric, the malting plant and its value to its adjoining environment and community was clearly in dispute though the sublimity of the place spoke to its potential. Through exposure to this sublime industrial complex I began to question what this place could become and what this monumental link to the region's history meant for its future.

INTRODUCTION

Since the dawn of the industrial revolution a great impetus has motivated the constant manipulation of the landscape in favour of production and industry. Throughout Europe vast networks of canals were relied upon to transport goods and provide essential access to water. This extensive force was echoed in North America, where the European model was utilized until the advent of the railway system, which required even more manipulation of the landscape.[3] Vast rail networks disconnected cities from their shorelines while connecting the far reaches of the country to rapidly send products and goods on rail cars. New opportunity led to the exponential increase of density in industrial sectors as the promise of progress encouraged new industry. The immense productive and economic power seemed unstoppable, reshaping the city in its wake. This productive economy maintained itself until the landscape, moulded by human hands, reached its breaking point, and the economic power shifted, favouring cheaper labour along ocean-spanning networks. In Europe, many post-industrial cities bear the scars of industrial development including decay, rust, and contamination. The reinterpretation of these vast lands in a meaningful and productive way is a great challenge and a necessity to the future development of the city. In Montreal, the largest industrial sector at the peak of its industrial economy was the Lachine Canal Corridor, boasting its importance as the founding place of all Canadian industry. Its evolution and eventual decline left behind a vast network of decay and obsolescence, purposeless and stagnant.

This thesis explores the reciprocal relationship between landscape and built form that discovers a meaningful productive energy embedded the obsolescence that plagues them. The symbiotic relation of the landscape and architecture is evident particularly in the arena of production, where the landscape and industry work in tandem to shape the environment for a single purpose. In the landscape of obsolescence there is a need to repurpose the landscape and the industrial ruin to

once again work in tandem to revitalize the region. In manifesting a reading of infrastructure, production, decay, and toxicity the site and region can be reinterpreted into a new ecological program where the ruins play an active role.

Tim Edensor writes in *Industrial Ruins: Space, Aesthetics, and Materiality* that many factors can be credited to the enthralling nature of ruins. They are spaces outside the natural order of the city, where spectacle and sensual experience take hold. Referring to an extensive documentation of industrial artifacts, Edensor states that ruins of industry express multiple temporalities. Their past is evident in wear, their present in a semi-naturalized state, and future in an almost palpable fear of uncertainty.[4] These coexisting temporalities affect the perception and experience of ruin. It is perhaps this palimpsest of time that captivates interest in decay, imagining its future potential.

In the Lachine Canal corridor's landscape of rust and decay, the industrial ruins are threatened by a foreboding future. Since its decline the canal has endured through many diverse proposals of a potential future vision, ranging from tourism to an upper class residential sector, though none have been realized. The pivotal question of the industrial landscape in a post-industrial culture is: what is to be done with these vast expanses of a former economy and what relevance do they have to the current predicament of the region? Proposals that stem from developers and heritage enthusiasts segregate landscape, infrastructure, and the built environment instead of connecting to that which has been interwoven throughout the region's history.

Industrial ruins have always captivated. They make for curious and powerful forms in their vast scale, casting monstrous shadows on the landscape around them. Rusted and overgrown, it seemed their fate would always be destruction, vanishing from memory and leaving the surrounding worker's community with no sense of why it came to be. In the post-industrial culture, imagining a new future for the industrial ruin seemed inevitable, considering the expanding breadth of the suburban outreaches and the need to inhabit spaces closer to the city centre. However, because of their toxicity, the ruins were often a landscape of fear that has been left untouched. The Canada Malting Plant on the shores of the Lachine Canal is an example of one such landscape. Its massively scaled forms lie abandoned, overgrown, and decaying. The irregularity and complexity of the malting plant captivates such interest, leading one to imagine what the cavernous interior feels like when immersed in the ruin.

The mystery of the space itself conjures even more questions. What program would be fit or meaningful enough to inhabit this space? What potential does it bear to address the community around it? Can this structure heal the wounds of a district in decline and neglect? This thesis explores the relationship between landscape and artifact, intending to create a holistic proposal that connects past and present predicaments in a way that has a meaningful impact on the future of the canal and its artifacts. It poses the question facing many post-industrial cities on a global scale: How do we address and interpret our ruins of industry?

CHAPTER 1 SOURCE

HISTORY AND DEVELOPMENT

THE HISTORY OF THE LACHINE CANAL
CURRENT AND FUTURE INFLUENCES
TOXICITY

1.1 THE HISTORY OF THE LACHINE CANAL

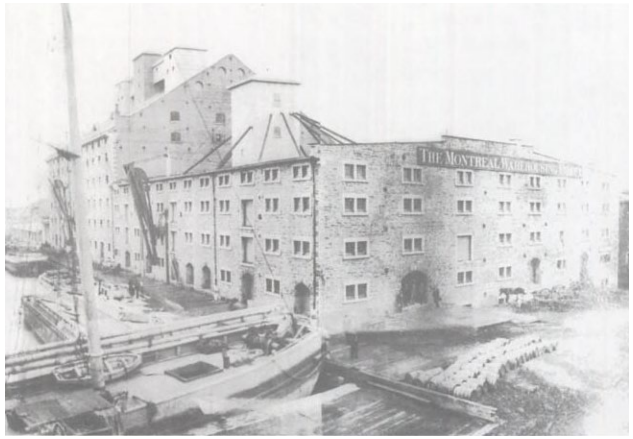


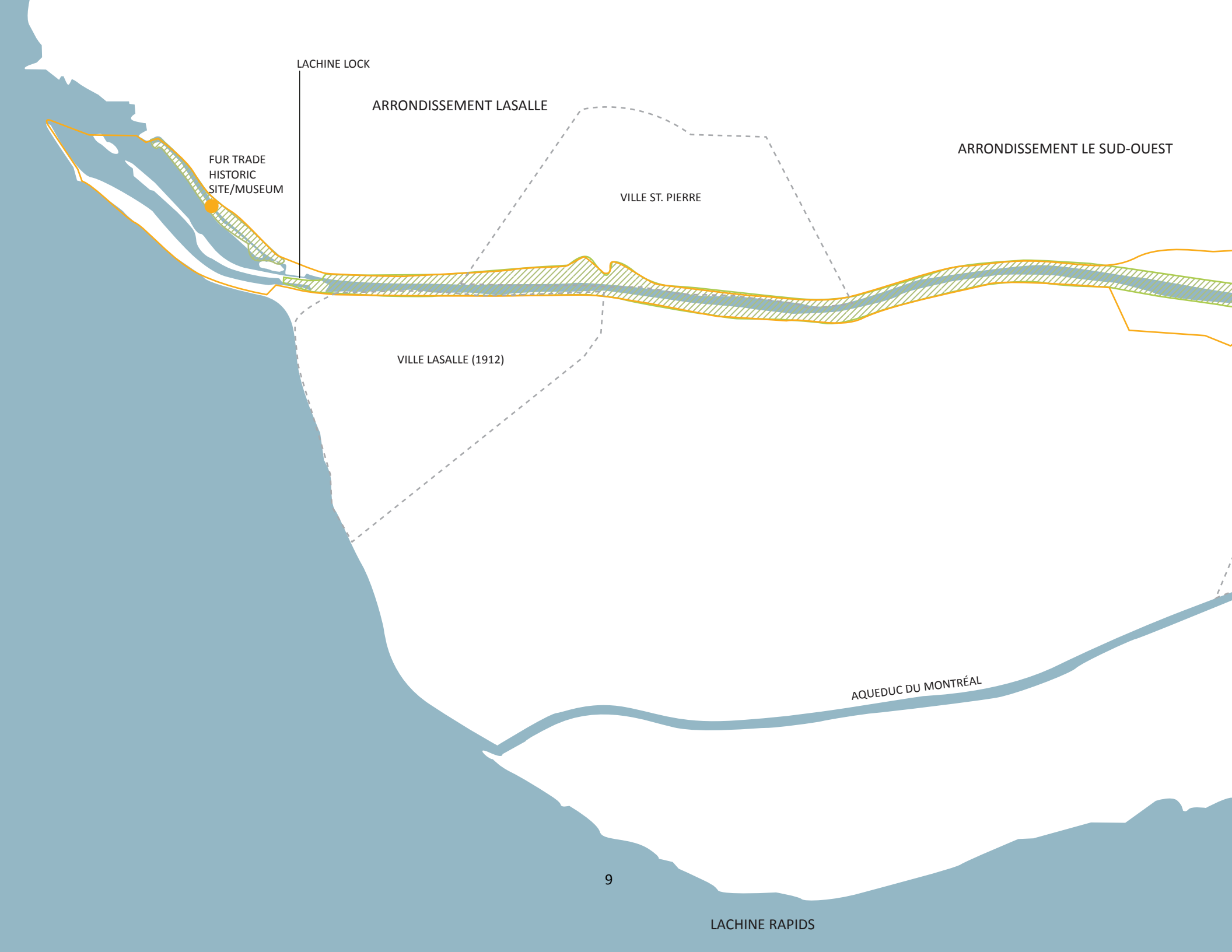
fig.1.1.1 (Opposite Page) The more heavily industrialized north bank of St. Gabriel lock showing sluices and operating industry, 1920.

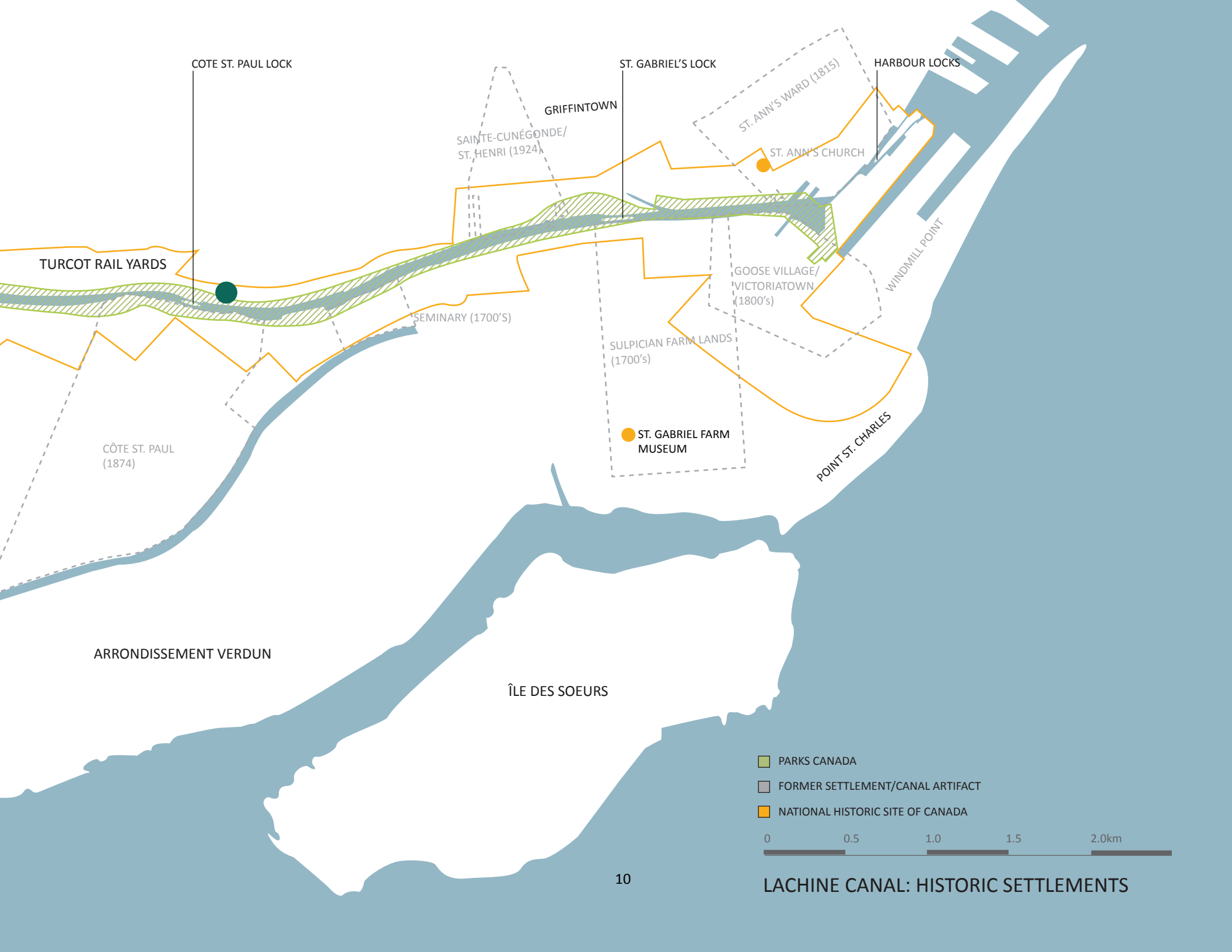
fig.1.1.2 Image of the Montreal Warehousing Company on the banks of the canal, c. 1875.

THE CANAL ERA

The Lachine canal, a constructed waterway, has been developed significantly since its creation, adapting through many cycles of economic and social change. It was scarred from decades of dredging that have formed its current path with the intent of increasing production efficiency and shipping traffic. Once a bustling port and industrious sector of Montreal, at present the waters of the Lachine canal remain stagnant. Under intermittent pressure for development, some of the region's greatest industrial landmarks have been left in disuse or slated for redevelopment.

In the early colonization of North America the St. Lawrence River became a significant artery for shipping between Upper and Lower Canada, which was slowed by the Lachine Rapids south of the Island of Montreal. Montreal became a vital nodal point as shipments had halted in the port of Montreal requiring land transportation to the south-west end of the island before resuming their shipping route beyond the rapids in Lake Saint Louis. New infrastructure was needed to form a bypass, inciting the planning for the Lachine Canal - a navigable passage to maintain a safe and reliable shipping route. Various individuals made different attempts to form a continuous canal, but these were halted by war, local disputes with the native population, or economic hardships. The earliest plans for a continuous canal were purposed to transport military personal in the War of 1812, yet were never completed.[1] Landowners also attempted to complete the network for access to water for irrigation, but were halted by local uprisings. In the early eighteenth century the plan for the construction of the canal began with the support of the government, pieced together from the various existing natural waterways including Otter Lake (Lac D'Outres) and the


LACHINE LOCK
ARRONDISSEMENT LASALLE
ARRONDISSEMENT LE SUD-OUEST
FUR TRADE
HISTORIC
SITE/MUSEUM
VILLE ST. PIERRE
VILLE LASALLE (1912)
AQUEDUC DU MONTRÉAL
LACHINE RAPIDS



LACHINE CANAL: HISTORIC SETTLEMENTS

partial segments of canals already begun.[2] In the late 1700s the official plan was enacted constructing a canal 15.5km long with a grade change of 13m, which was accounted for by seven locks dispersed along the canal. By 1825, the canal was in operation; a new bridge in Canada's shipping network measuring a meagre average of 2m wide and 1m deep.

This network provided a new bustling life to small farming villages organized as seigneurial systems, eventually drawing the interest of mills that benefited from the access to water for production and from the adjacent shipping network. With the increased shipping traffic and an abundant source of water, the shores of the canal became highly desirable for industrial and manufacturing uses. The first factories quickly formed, requiring basins for loading and unloading cargo. Along with basins for transport, the factories required races - offshoots of the canal for additional water access to landlocked lots and to more easily control the speed of the water. Access to water was vital for industrial production and for the use of hydraulic power, enabling more efficient production. Sectors of the canal hosted such diversities as textile production, tanneries, mills, lumber processing, breweries, and steel production.[3]

Along with the growth of heavy industry, communities developed along the canal. The towns of St. Gabriel, St. Cunegonde, and St. Henri were originally formed by parishes, but soon submitted to the power of industry.[4] They held a combined population of 16,000 by 1881 - over an eighth of the population of Montreal.[5] The two settlements that formed nearest Montreal were St. Augustine, based around a wealthier convent on the ridge above the canal in what is now called Westmount; and St. Anne's Ward, a predominantly Irish working class settlement which housed most of the workers responsible for the canal's construction.[6]

The elevation difference between the two settlements created a distinct class barrier that would continue to evolve as the canal developed. Saint Henri especially defined its role as an industrial suburb favouring heavy industry and its potentially adverse effects over the health of its residents. Saint Henri offered financial bonuses to any new industry that purchased property in its borders – even industry deemed noxious and prohibited by other towns.[7] Furthermore, Saint Henri was one of the last communities along the canal to offer water and sanitary sewer infrastructures for its residences, favouring industry instead.[8] The shift from an agrarian based village to modernized industrial suburb was just beginning.

Booming industry resulted in an increase of traffic and a need for further expansion of the canal in 1843 to a depth of almost 3m – the first of numerous expansions.[9] However, the newly formed industrial sectors were productive and prosperous to such an extent that they began to take precedence over shipping in the canal. An increase in water speed throughout the heavily industrial sectors was permitted to assist the production of hydraulic power and for the increased demand of water that industries needed to pump from the canal for production. At the end of the first era of the canal, production overtook navigation as its key purpose, attracting the attention and business of the Grand Trunk Railway, which would also replace the canal's need for a water-based shipping route.

fig.1.1.3 (Previous Page) Map depicting the approximated areas of villages and towns along the Lachine Canal that, due to its presence, significantly increased in population, eventually becoming districts of Montreal.

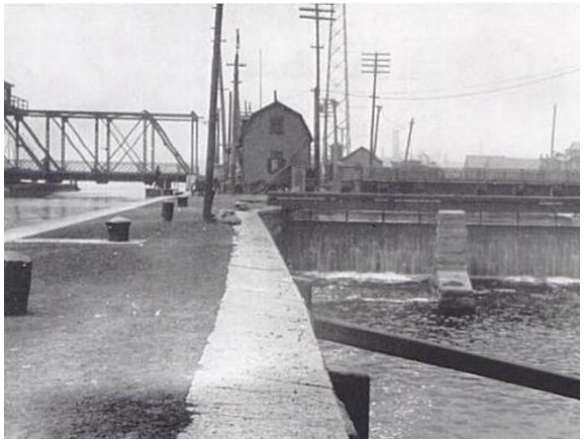


fig.1.1.4 St. Gabriel Waste Weir and control building at St. Gabriel Lock depicting the walls of the newly expanded canal, c. 1903.

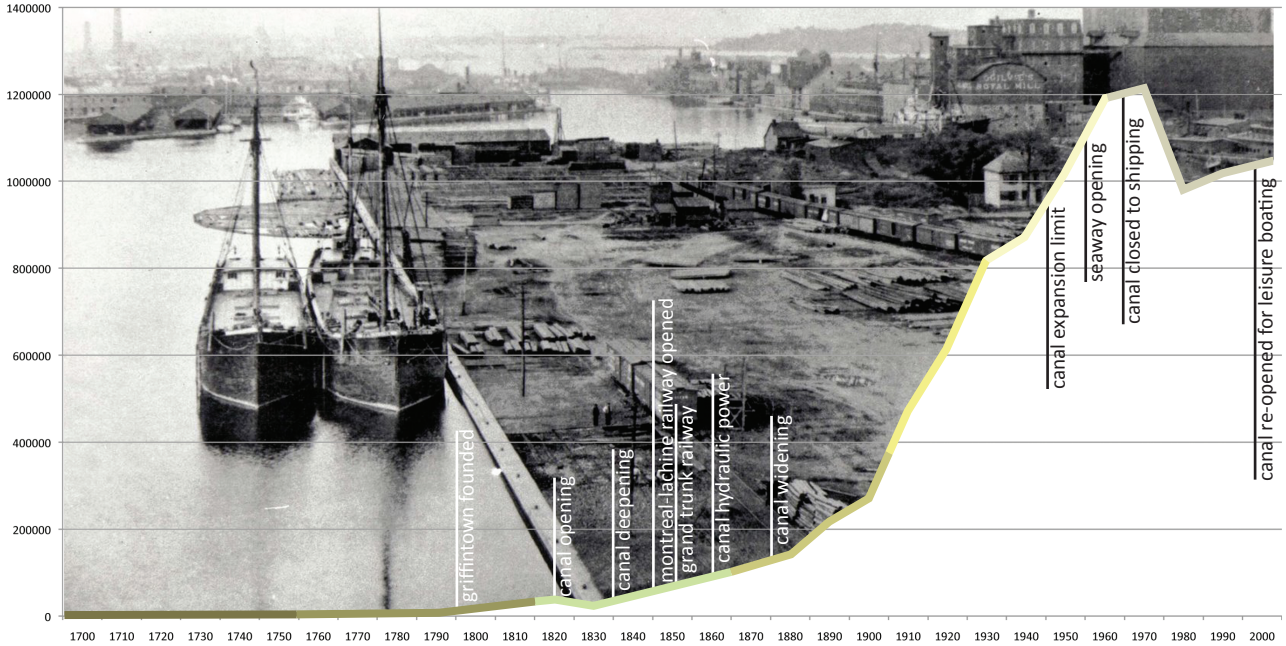
"Mills, grain elevators, warehouses have sprung up in solid blocks in front of the wooden houses, robbing them of the breezes from the country, stifling them slowly. The houses are still there with their wrought-iron balconies and quiet facades. Sometimes music penetrates the closed shutters, breaking the silence like a voice from another era. They are lost islands to which the winds bear messages from all the continents, for the night is never too cold to carry over alien scents from the warehouses: smells of ground corn, cereals, rancid oil, molasses, peanuts, wheat dust, and resinous pine. […]

fig.1.1.5 Image of the 'Jacknife' Lift Bridge over the Lachine Canal.

In the spring, to be sure, the nights ceased to be quiet. As soon as the channel was free of ice the sirens blow from sunset to dawn, echoing from the bottom of St. Ambroise Street over the entire suburb, and even as far as Mont-Royal when the wind blew that way.

The house where Jean lived was opposite the drawbridge at the corner of St Augustin Street. Flatboats passed before his door, tankers reeking of oil or gasoline, lumber barges, coalers, all hailing him with three powerful blasts of their sirens – a salute in passing and a cry for liberty for the open sea they would reach some day when they had left the cities behind and dipped their keels into the waters of the Great Lakes."

Gabrielle Roy, from 'The Tin Flute'

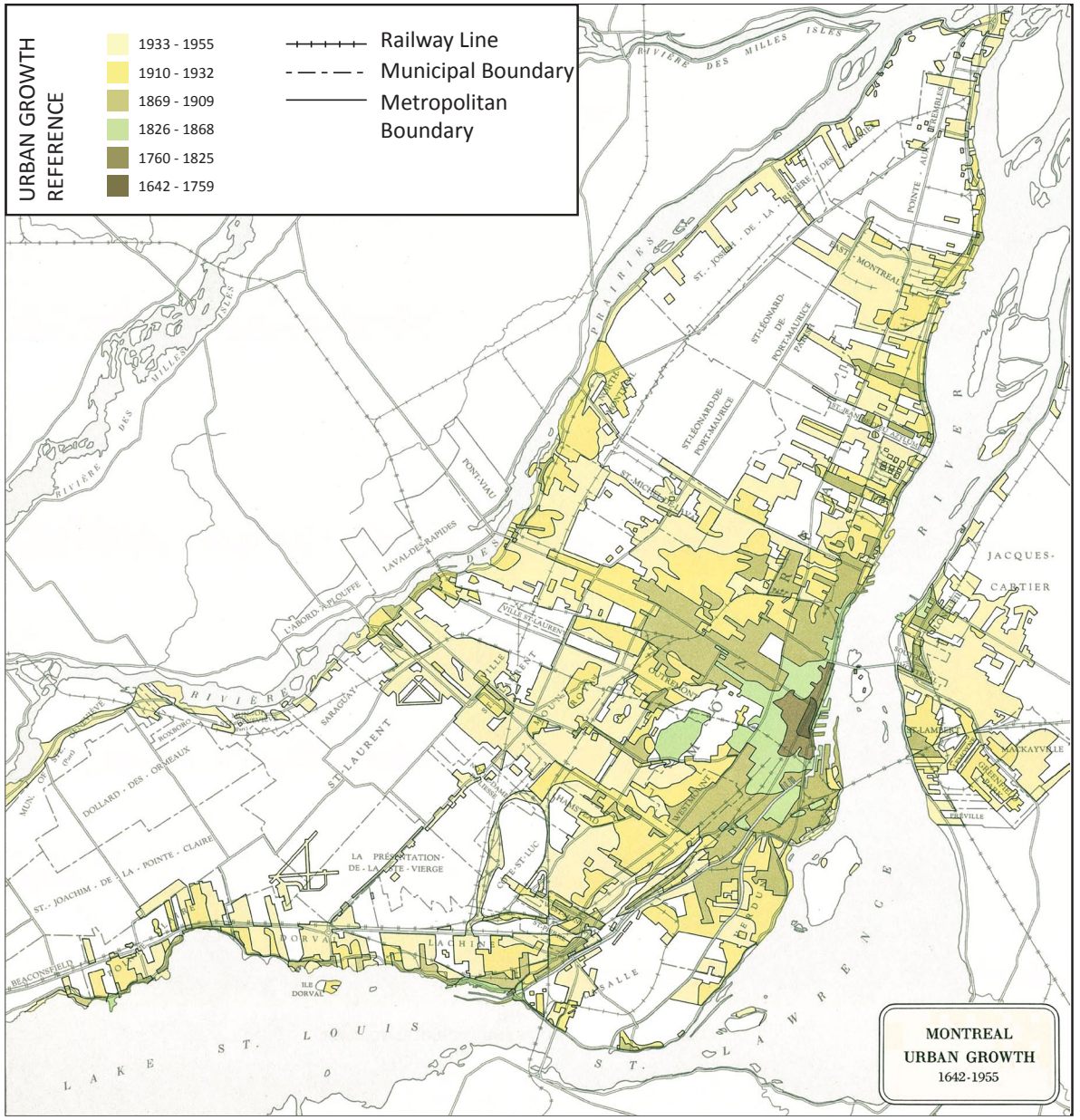


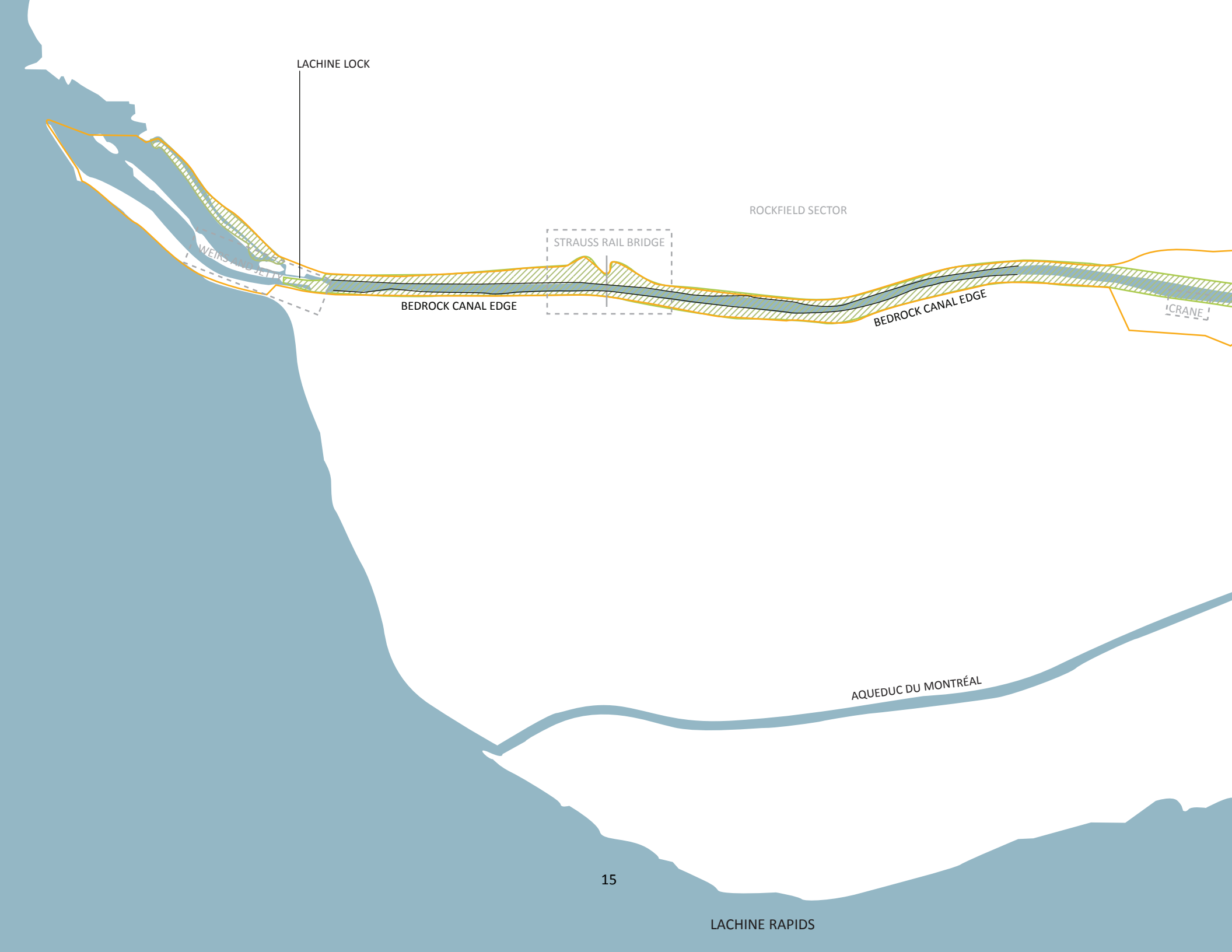
MONTREAL'S POPULATION GROWTH OVER TIME - INCLUDING KEY CANAL MILESTONES

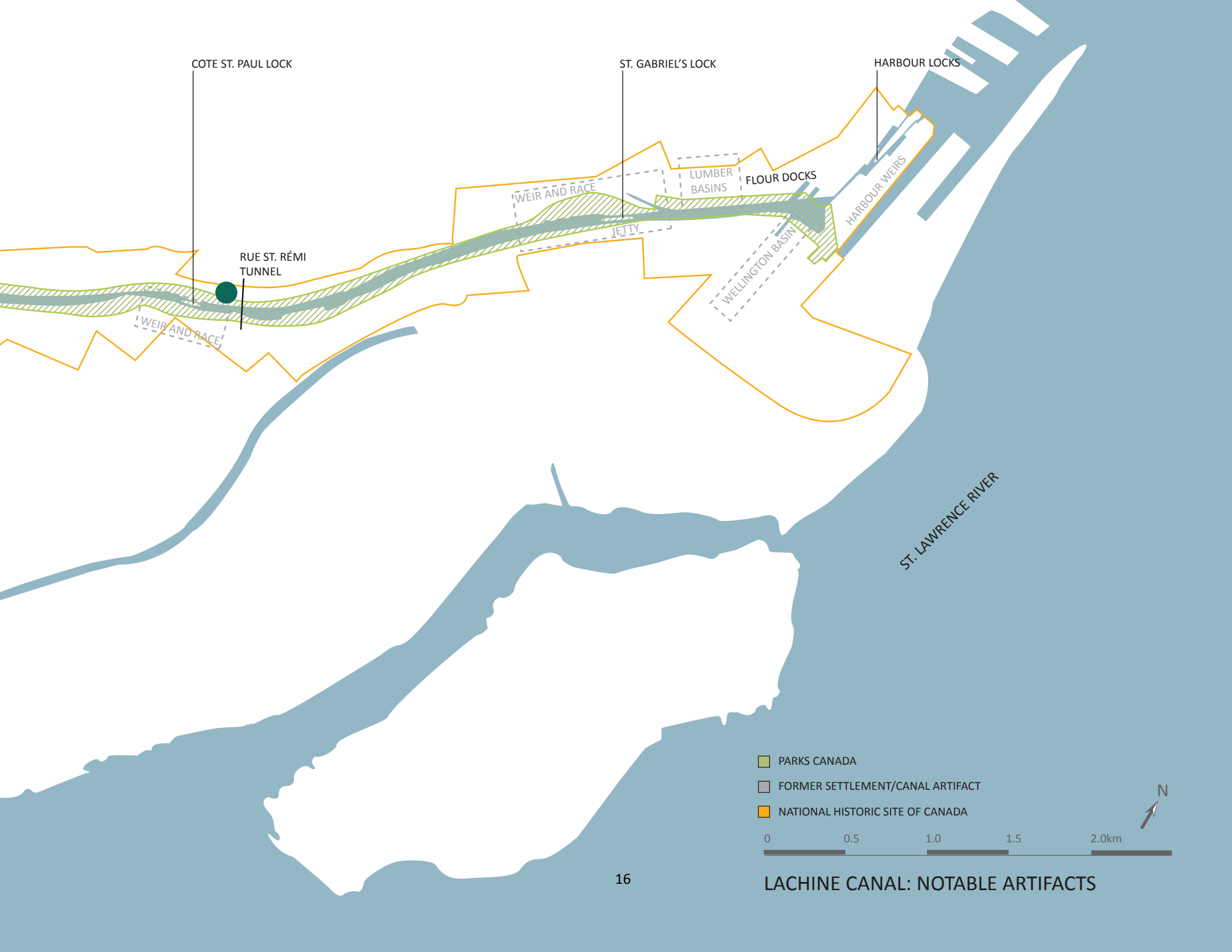
fig.1.1.6 Graph depicting the changing population of Montreal and the increasing sprawl indicated by colour (corresponds to map on adjacent page) marking key landmarks in the canal's history over time.

fig.1.1.7 (Opposite Page) Map depicting the urban growth of Montreal over time from 1642 - 1955. Colours corresponding to indicated years.

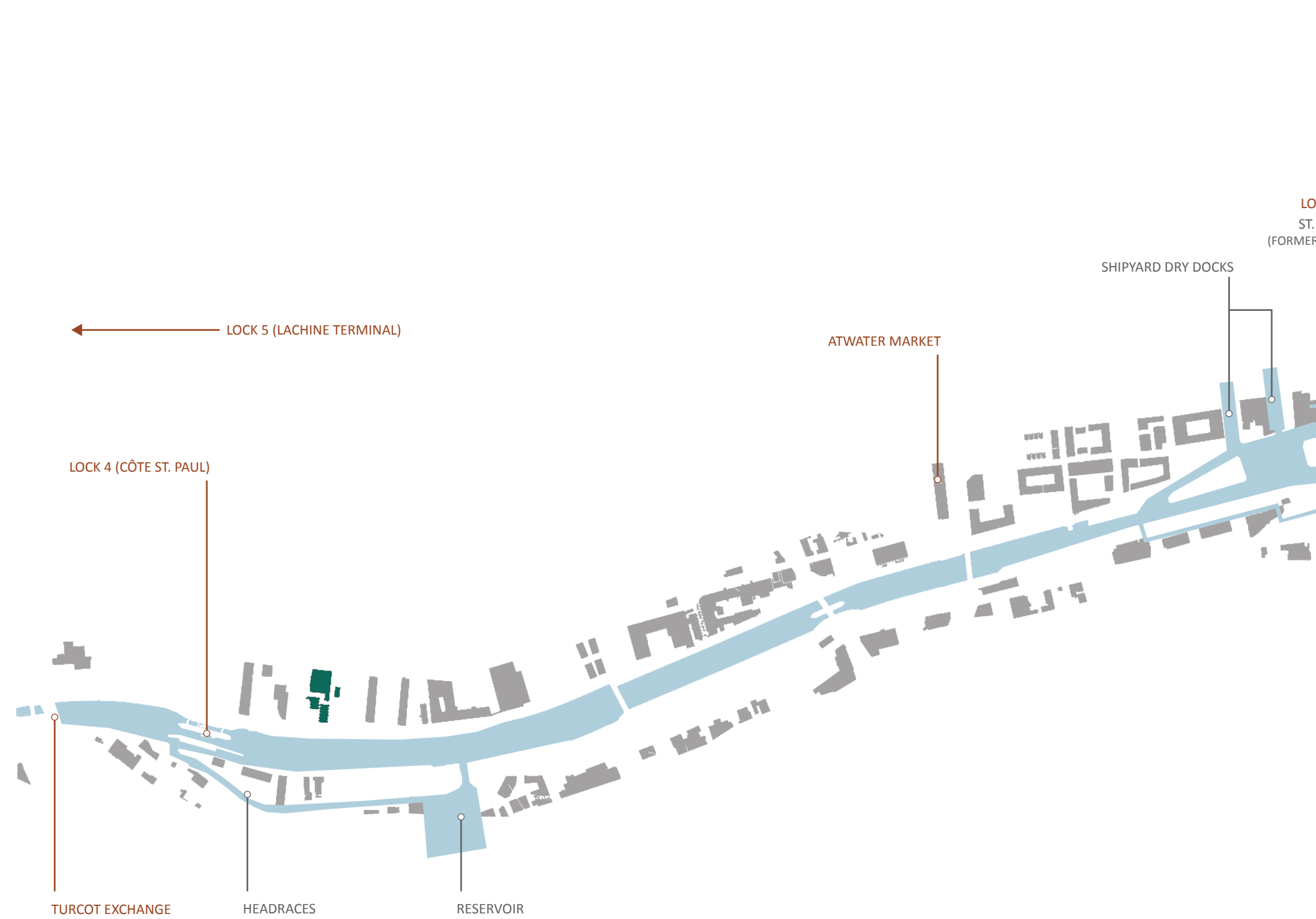
fig.1.1.8 (Next Page) Map indicating the location of key canal artefacts vital to the operation of the canal as a shipping route. The map indicates heritage zones under different jurisdictions.

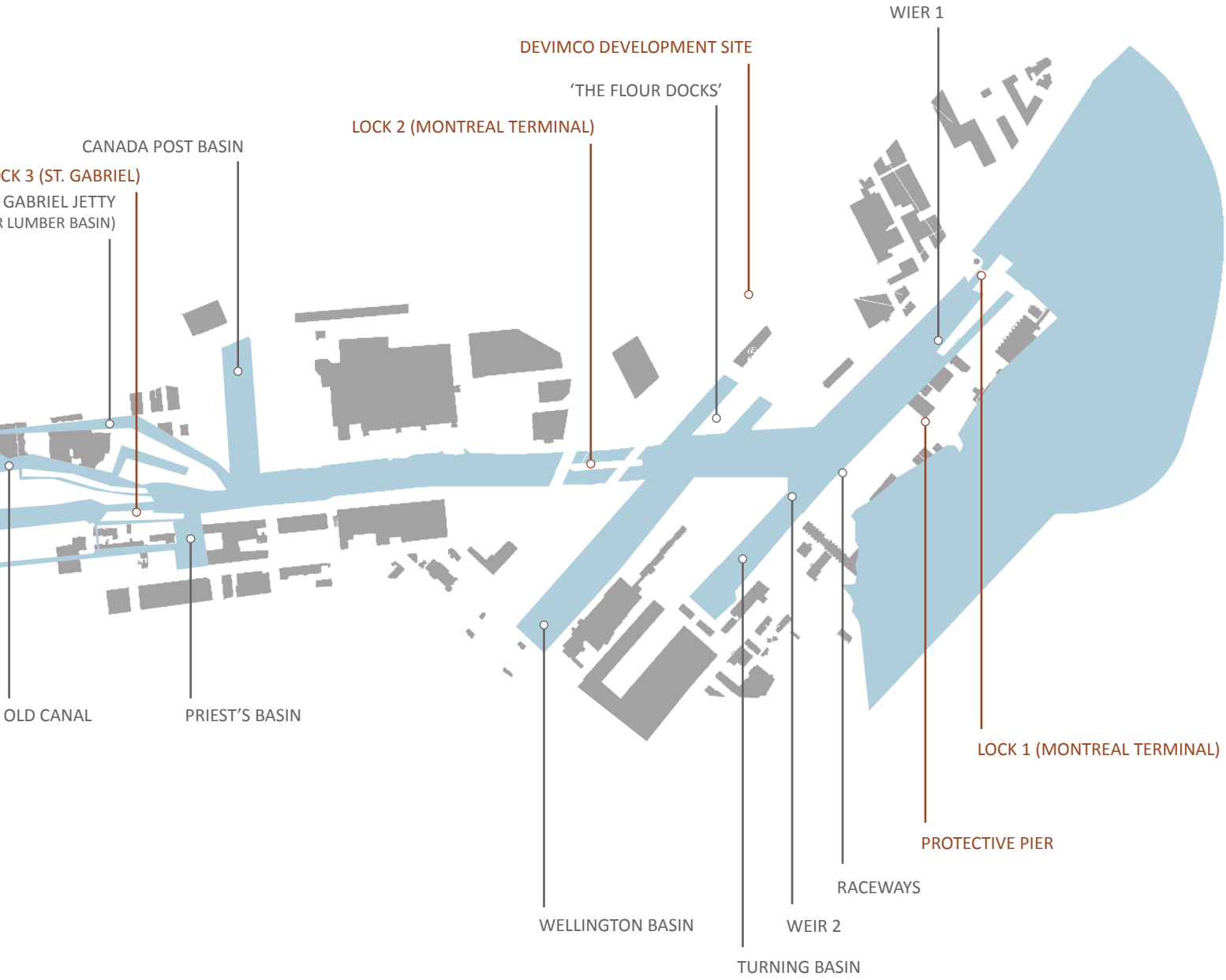

URBAN GROWTH REFERENCE
1933 - 1955
1910 - 1932
1869 - 1909
1826 - 1868
1760 - 1825
1642 - 1759
Railway Line
Municipal Boundary
Metropolitan Boundary
MONTREAL
URBAN GROWTH
1642-1955


LACHINE LOCK
ROCKFIELD SECTOR
STRAUSS RAIL BRIDGE
BEDROCK CANAL EDGE
BEDROCK CANAL EDGE
CRANE
AQUEDUC DU MONTRÉAL
LACHINE RAPIDS



LACHINE CANAL: NOTABLE ARTIFACTS


LO
ST.
(FORMER
SHIPYARD DRY DOCKS
LOCK 5 (LACHINE TERMINAL)
ATWATER MARKET
LOCK 4 (CÔTE ST. PAUL)
TURCOT EXCHANGE
HEADRACES
RESERVOIR



SITE BUILDINGS

CHANGING SHORELINE

PARK SPACE

CURRENT USE

FORMER USE

NEW DEVELOPMENTS

0 50 150 250 350m

N

INDUSTRIAL DEVELOPMENT:
CANAL ARTIFACTS

OF THE LACHINE CANAL

THE RAIL ERA

Advancing technology also led to an increase in industry as pneumatic power, requiring access to water, was replaced by steam and coal power, allowing expansion of the industrial sector further from the canal. Saint Henri and Griffintown quickly adopted these new energy sources earning it the name 'Steam Valley'. The power and dominance of industry spurred development and financial gains, but left its mark on the city itself. Attributed to the increased use of coal in areas such as Saint Henri, soot and other noxious industrial by-products that landed in the city of Montreal had the effect of rendering some city gardens infertile.[10]

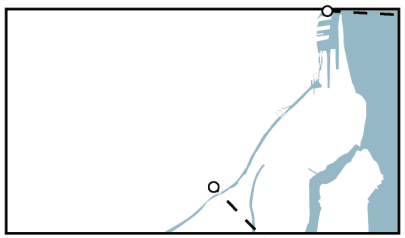
The rapid expansion of the area also drew the attention of the railway which laid track in the Lachine corridor in the late 19th century, to provide more reliable transportation. Since the canal was closed in winter when the waterways froze over, the railway was hailed for its increased efficiency. Further expanding the rail network the Victoria Bridge was constructed allowing rail passage across the St. Lawrence River year round. The railway served to further expand the reach of industry, regarded with such importance that navigational access to the canal was nearly erased in favour of factories and rail yards.

By the 1900s, the canal had been significantly widened and reshaped, further manipulating the land through dredging to access a greater volume of water. This desire for increased flow rates demanded fewer locks, leading to the demolition of two of the original seven. The increased demand for water continued to grow exponentially as over 600 industries settled between 1846 and 1945[11]. The economic power of the canal rested in the industry allowing alterations to the landscape with their sole interest in mind. Water speeds were increased to such levels that shipping became extremely difficult and the rail lines offered by the Grand Trunk railway became the sole solution to transporting goods and materials. Rail expansion dominated the Lachine landscape to such an extent that in the 1970's St. Anne's Church was razed in favour of potential infrastructure and industrial developments. This was impacted by such urban planning policies as those adopted in early 1900s Griffintown, dictating that the only new buildings to be constructed must be industrial.

The rapid industrial expansion ended in the 1950s with the realization that the canal had reached its greatest dimensions. With the rise of extensive highway projects locally and nationally as well as the popularity of the road transportation, rail transportation slowly became obsolete. Both the roadway tunnels constructed under the canal and the extensive reach of built industry dominating its shore, represented physical barriers to expansion. The waterway authority deemed the cost of removing the extensive industry along the canal as too costly and began to consider other options for expansion. This led to the consideration of alternative bypasses such as the St. Lawrence Seaway across from Montreal Island. The seaway, built in 1959, was part of this new set of national projects by Prime Minister Louis St-Laurent, made to define the country in its time, as once did the Lachine Canal.

fig.1.1.9 (Previous Page) Map indicating the layout of the canal during the era of its peak of production (approximately 1925) indicating artifacts still in use and existing at present.

fig.1.1.10 (Opposite Page) The hydrological and infrastructural state of Montreal in 1775, soon after the founding of the City.



HYDROLOGY

SHORELINE

PARKS AND CONSERVATION AREAS

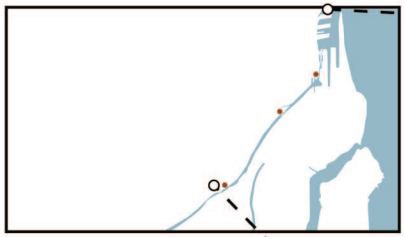
MONASTARIES AND CHURCHES

RAILWAY

0 0.5 1.0 2.0km

N

INFRASTRUCTURAL DEVELOPMENT
1775



HYDROLOGY

SHORELINE

PARKS AND CONSERVATION AREAS

MONASTARIES AND CHURCHES

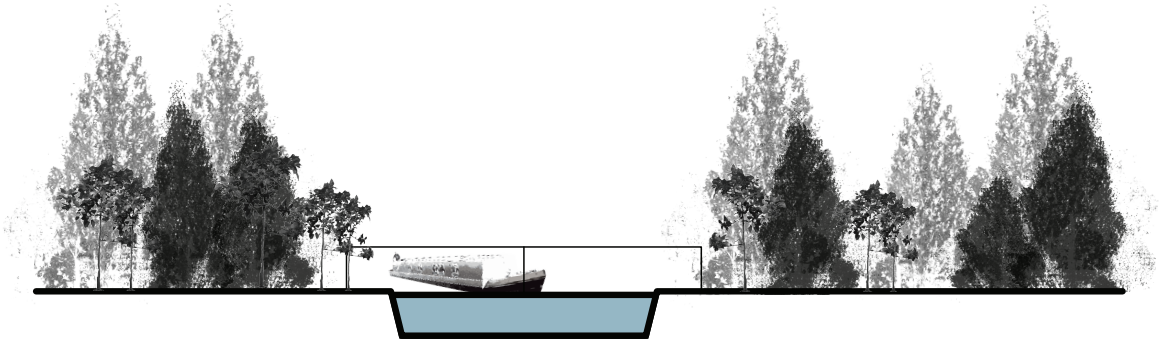
SITE STRUCTURES

RAILWAY

0 0.5 1.0 2.0km

N

INFRASTRUCTURAL DEVELOPMENT
1850



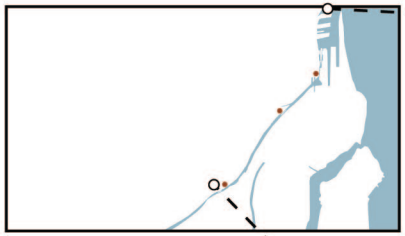
1850

By 1850, the Lachine Canal has been constructed including many basins, races, and jetties surrounding the locks nearest Montreal. The dredged soil had been massed outside Montreal harbour creating a formation of small manufactured islands. The rail lines had begun to develop along the canal's edge as had the planned connection across the St. Lawrence which is to become Victoria Bridge.

St. Gabriel's homestead, located south east of the canal, and the lock named for the homestead, marked the edge of the city of Montreal.

fig.1.1.11 (Opposite Page) The hydrological and infrastructural state of Montreal around 1850 at the advent of the railway.

fig.1.1.12 Diagrammatic section of the Lachine Canal in 1850.



HYDROLOGY

SHORELINE

PARKS AND CONSERVATION AREAS

MONASTARIES AND CHURCHES

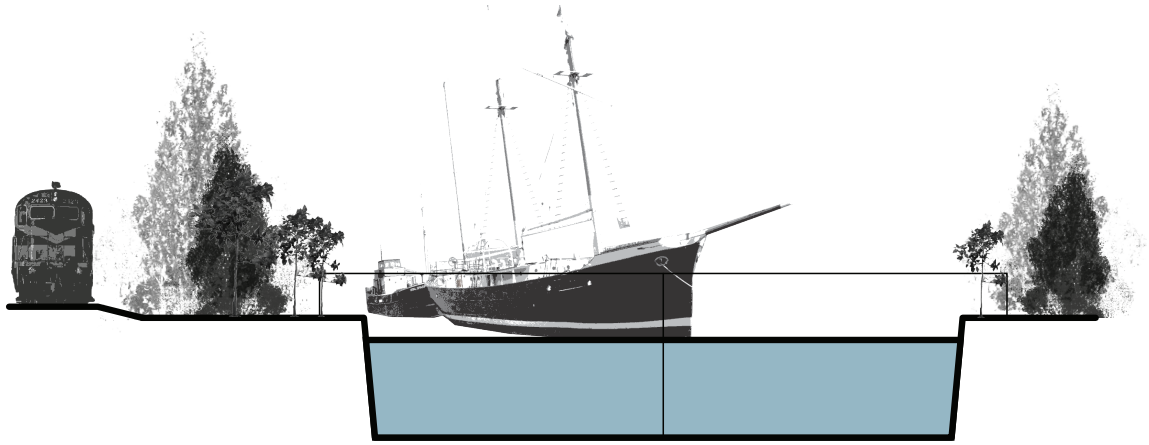
SITE STRUCTURES

RAILWAY

0 0.5 1.0 2.0km

N

INFRASTRUCTURAL DEVELOPMENT
1900



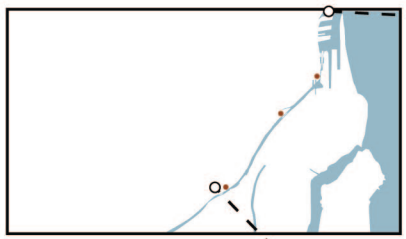
1900

By the 1900s Victoria Bridge was completed creating a stable year round means of transit for goods. Rail yards have also developed around Montreal, including the largest at Point St. Charles before reaching the bridge. Significant development of basins and docks in Montreal harbour, as well as the dredging of the Lachine Canal led to an expansion of the pier, marking the entrance to the canal.

The growth of industry has also promoted the expansion of the city border, which has extended past the St. Gabriel lock.

fig.1.1.13 (Opposite Page) The hydrological and infrastructural state of Montreal around 1900 after the completion of Victoria Bridge.

fig.1.1.14 Diagrammatic section of the Lachine Canal in the 1900s.



HYDROLOGY

SHORELINE

PARKS AND CONSERVATION AREAS

MONASTARIES AND CHURCHES

SITE STRUCTURES

RAILWAY

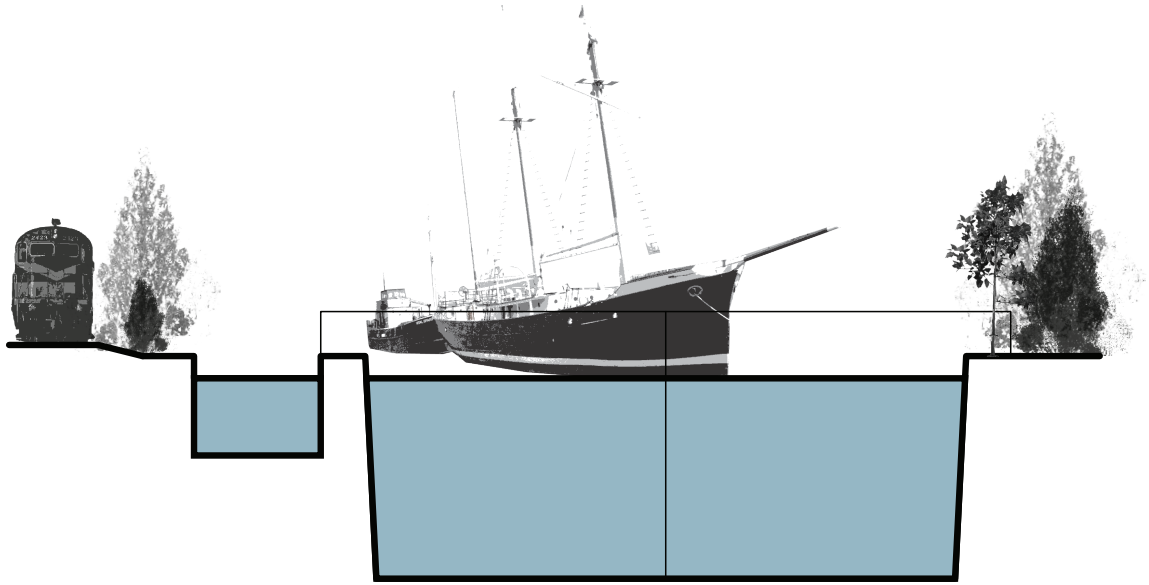
0 0.5 1.0 2.0km

N

INFRASTRUCTURAL DEVELOPMENT
1950

WINDSOR STATION

CANADA MALTING PLANT

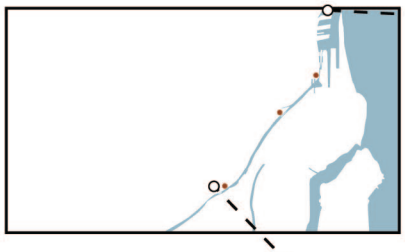


1950

By the 1950s, planning had begun on the St. Lawrence Seaway. Despite this, rail expansion had increased significantly throughout the Lachine Canal corridor including newly expanded lines leading to Montreal's main train station. The canal as well as docks and basins throughout the harbour had increased in size to match newer vessels. This dredging as resulted in a further manicured edge and the increased area of the manufactured islands which are to become île Sainte-Hélène - the site of the 1967 World Expo.

fig.1.1.15 (Opposite Page) The hydrological and infrastructural state of Montreal around 1950, shortly after the planning of the St. Lawrence Seaway.

fig.1.1.16 Diagrammatic section of the Lachine Canal in 1950.



HYDROLOGY

SHORELINE

PARKS AND CONSERVATION AREAS

MONASTARIES AND CHURCHES

SITE STRUCTURES

RAILWAY

0 0.5 1.0 2.0km

N

INFRASTRUCTURAL DEVELOPMENT
2010

2010

In the 1970's road transport began to decrease the demand for rail lines, clearly shown by the thinning of railways and rail yards in 2010. The St. Lawrence Seaway dredging added significant reclaimed soil to the site of île Sainte-Hélène, creating the landmass seen today. With the closing of the canal, several basins and jetties have also been filled in leaving traces of the former infrastructure behind.

fig.1.1.17 (Opposite Page) The hydrological and infrastructural state of Montreal around 2010 with the St. Lawrence Seaway fully operational.

THE ERA OF ABANDONMENT

With the dredging of the St. Lawrence Seaway and the relocation of these sediments, new parcels of land developed. These extensive changes to the landscape of the canal corridor are so significant that they are impossible to ignore, yet they have been integrated and expanded upon for over a century. The vast spaces of manufactured land formed by the dredging of the Lachine Canal and later the St. Lawrence Seaway were quickly claimed by industry – All save Île Sainte-Hélène, the island park formed over a century of dredging that hosted the 1967 expo, asserting its claim that desirable park spaces could be formed from this scarring industrial process.

As the density of industry continued to increase shipping constraints began to arise. With the canal at its peak of expansion and the continual increase in vessel size, industry began to seek other locations. This began the trend of abandonment as industrial production was slowed through the obsolescence of technology that once sustained it. The construction of the Ville-Marie Highway, leading into Montreal further exaggerated the undesirability of Saint Henri. As a shipping corridor for industry it was too far away to allow easy truck access on the narrow streets and, in terms of residential neighbourhoods, it created another physical barrier to separate it from the more wealthy lands on the ridge above.

The negative stigma associated with the industrial neighbourhoods and their effect on the city greatly influenced the neglect of regions such as Griffintown in the years of decline (1950-1970) ending with the closing of the canal. The blatant disregard for the former industrial sites and workers villages reached its pinnacle in 1964 with the demolition of Victoriatown (Goose Village). Victoriatown was named for its worker's involvement in the construction of the Victoria Bridge, which connected Montreal to rail lines leading to New York. With the industry already in decline and preparations being made for the 1967 Expo in Montreal, an entire village housing 330 working class families was razed in order to remove the 'shanty town' from the view of the Expo grounds. Île Sainte-Hélène, the site of the expo grounds, was manufactured by the debris from the dredging of the harbour and the canal – a fact that was disregarded in favour of the demolition labelled by the city's Urban Planning as 'redevelopment'.[12] The neighbourhood of Saint Henri also watched as its celebrated church of Saint Anne was demolished. Though reasons for this demolition are abundant, the motion was undoubtedly motivated by railway expansion required for the increased shipping, the need for even more industrial land, and the reduced desire for unsightly industrial worker communities especially after to the razing of Victoriatown.

Abandonment spread rapidly leaving the former and operating industrial and manufacturing lands devalued. The decline in industrial economy along the Lachine Canal reduced the need for rail lines, basins, jetties, locks, and sluices that controlled the waters of the canal since its inception. These artefacts of the former bustling canal were filled in or left as markers of the past to endure the wear of time. Soil and debris from the new subway lines constructed underneath the city were used to fill the basins and sluices in disuse.[13]

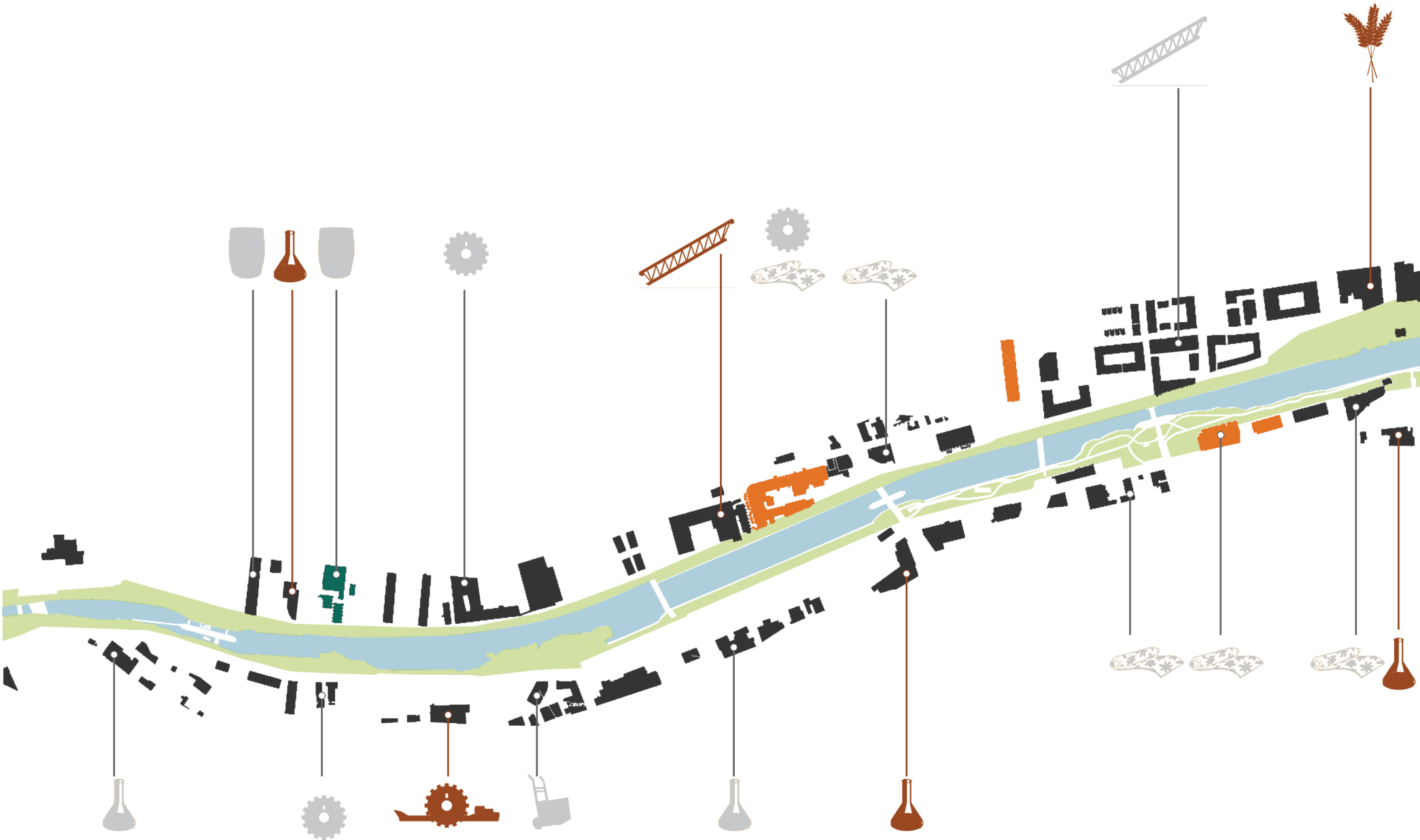
Parks Canada, citing the important role the canal played in the early industrialization of the country, deemed the shores of the canal and various sites along it a National Heritage Zone in 1977. Through great effort and expense - including the draining of the entire canal - the locks

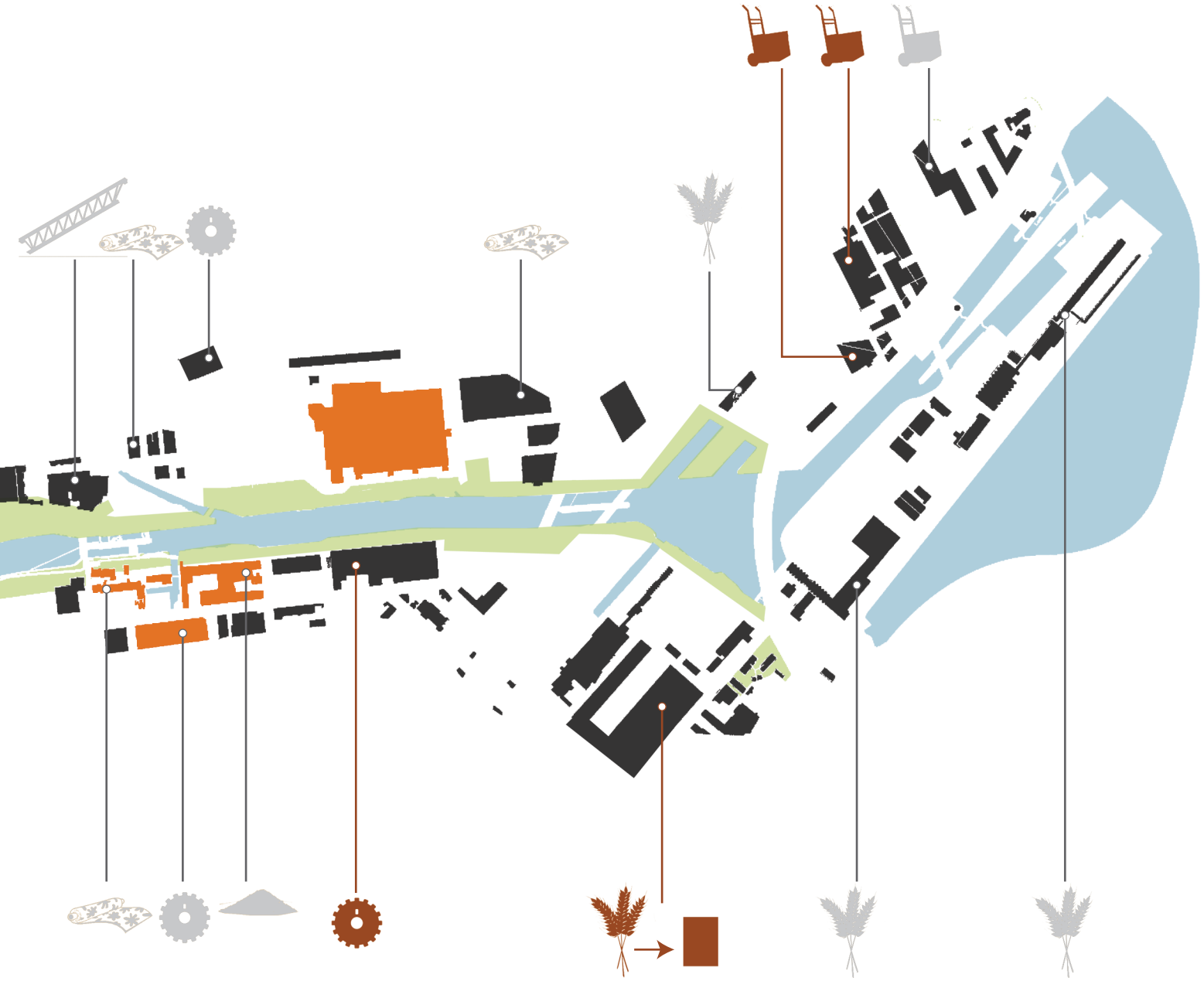
and walls were recreated or repaired to return them to the historic image of what they were, including the recreation of basins that were filled in with the closing of the canal.[14] A desire for reliving the canal experience was given utmost importance as Parks Canada pushed for the reopening of the canal to pleasure craft. After an initial opening in 1979, Parks Canada discovered an increase in suspended contaminants leading to an immediate closure in 1982. Warning signs were posted along the canal stating that fishing and swimming were prohibited. After an official contamination report was commissioned and acted upon, the corridor of leisure and historic attractions was planned leaving the canal and its surrounds contaminated, but open to new development.[15]

The desire to occupy these spaces of the industrial and historic legacy of the region has led to an increase in real-estate values and new developments. The legacy of the canal, however, lies in its reshaping and exhaustive energy that moulded an entire region along its path, altering and abusing its natural environment for the production of goods. The infrastructural developments it incited ultimately led to its demise; caught up in its own insatiable need for productivity it was made obsolete by its own technology and pursuit of profit.

fig.1.1.18 Image of the Lumber Basins of St. Gabriel Locks. The panorama is depicting the increasing use of steam power which earned the corridor the nickname, 'Steam Valley'

fig.1.1.19 (Next Page) Map displaying the current condition of industry along the canal (based on conditions in 2009). Symbols indicate the type of industry, and colour indicates whether it is abandoned or currently in operation.





WHEAT PROCESSING

NAVAL MANUFACTURING

SUGAR PROCESSING

STEEL PRODUCTION

BREWERIES

MANUFACTURING

TEXTILE

WAREHOUSE

CHEMICAL

SITE BUILDINGS

CHANGING SHORELINE

PARK SPACE

CURRENT USE

FORMER USE

NEW DEVELOPMENTS

0 50 150 250 350m

N

INDUSTRIAL DEVELOPMENT:
CANAL ARTIFACTS

OF THE LACHINE CANAL

1.2 CURRENT AND FUTURE INFLUENCES

fig.1.2.1 (Opposite Page) Basins du Havre development sign.

fig.1.2.3 Signage along the Lachine Canal depicting scenes of former industry and its historical facts. This sign depicts scenes from the interior of the former Northern Electric Company Building seen across the water, now a luxury loft named 'Nordelec'.

fig.1.2.2 A new development occurring along the canal near Côte Saint-Paul lock displays its signage. The development, called 'Berges du Canal', is replacing former workers housing and replacing it with brick to display the aesthetic of the region.

The desirability of the canal corridor has increased since its industrial abandonment, slated as a region of prime land for development. Factories and warehouses have been demolished or gutted in favour of luxurious lofts, selling the industrial appeal as a marketing feature. The new cladding of modern development acts only as a cloak to hide the scars of the past echoed in Parks Canada's need for upkeep of a canal that no longer functions.

Since the Lachine Canal corridor was designated a National Historic Site by Parks Canada in 1977, it has undergone a series of modifications. These renewal efforts focused on maintaining an image of what the canal once was. The deterioration of the canal walls and the disrepair of the locks and lock houses were of main concern to maintain the image of the canal as a tourist corridor of heritage parks. In order to foster this outdoor museum, Parks Canada created paths along the canal that are riddled with signage showing images of past industry and historical facts that are seldom viewed and point to absent structures, redeveloped lands, or inaccessible artifacts.

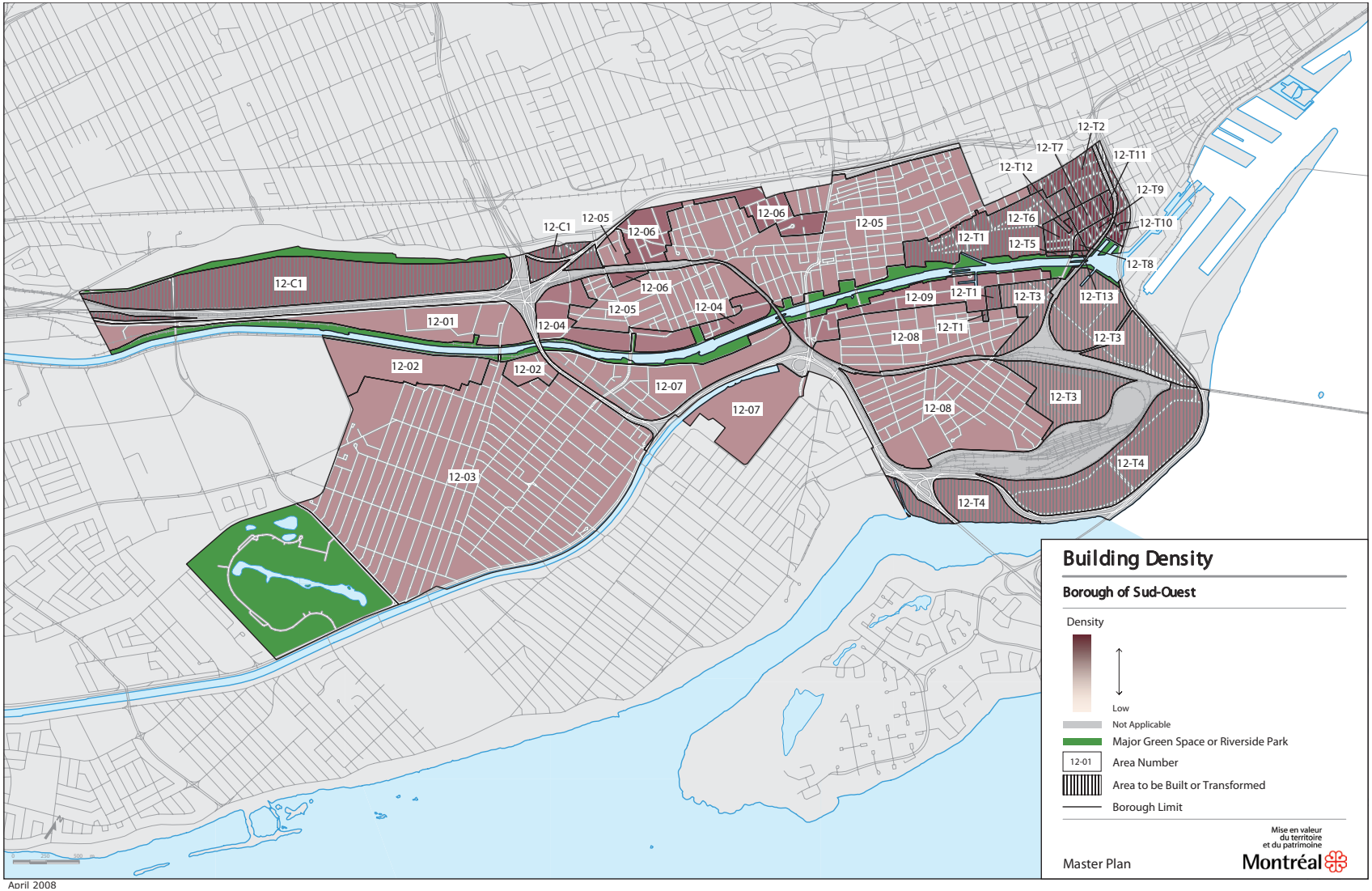


fig.1.2.4 From the Montreal Master Plan (2008), this map depicts the desired redevelopment zoning to be achieved slated by the 2025 Development Plan. The density on the canal shore is kept low.

fig.2.1.5 'Before' still taken from the Montreal 2025 Development Plan video demonstrate the intention of the development plan to create public space amongst ambiguous structures in a sterile setting.

fig.2.1.6 'After' still taken from the Montreal 2025 Development Plan video demonstrate the intention of the development plan to create public space amongst ambiguous structures in a sterile setting.

Various sites along the canal are slated for new development as part of the 2008 Montreal Master Plan, which has identified areas for increased density encouraging new developments and growth. These sites include significant areas of Griffintown – a larger district that includes Saint Henri. Though the master plan highlights intentions to redevelop the area, there is no included mitigation strategy for contaminated soil or water, leaving the issue of toxicity to the purchaser of the property. Often there is no available financing available for purchasers of Griffintown property due to the extensive costs of remediation which they are responsible for.[1] These costs are more easily carried by large developers who have begun to create large scale developments on numerous parcels of land. The developments often use the canal or its remaining artifacts in their project titles as an advertising ploy – such as 'Les Basins du Havre' as living near the water, albeit highly polluted, is deemed valuable. Local communities protested against these developments considering that they fail to address their concerns and needs as a relatively poor district. They are also contested on the ground that they have little to no sympathy for the historic fabric, preferring to recreate former basins, while ignoring their underlying problems.[2]

The largest changes spurred by the city Master Plan for this area is called the 'Montreal 2025 Development Plan'. In this scheme many lots in Griffintown are completely remodelled, including the extensive Turcot Rail Yards. The plan for this abandoned rail yard includes the development of a new seemingly isolated community as well as the expansion of existing cycling paths. It contrasts unclean and abandoned images of Griffintown, including brick warehouses, rusting infrastructure, and a scavenged bus with pristine images of glass facades and bustling pedestrian paths. It is these types of plans that perpetuate the disregard of the canal corridor's history. The master plan also indicates key zones of historic interest ranked by intensity

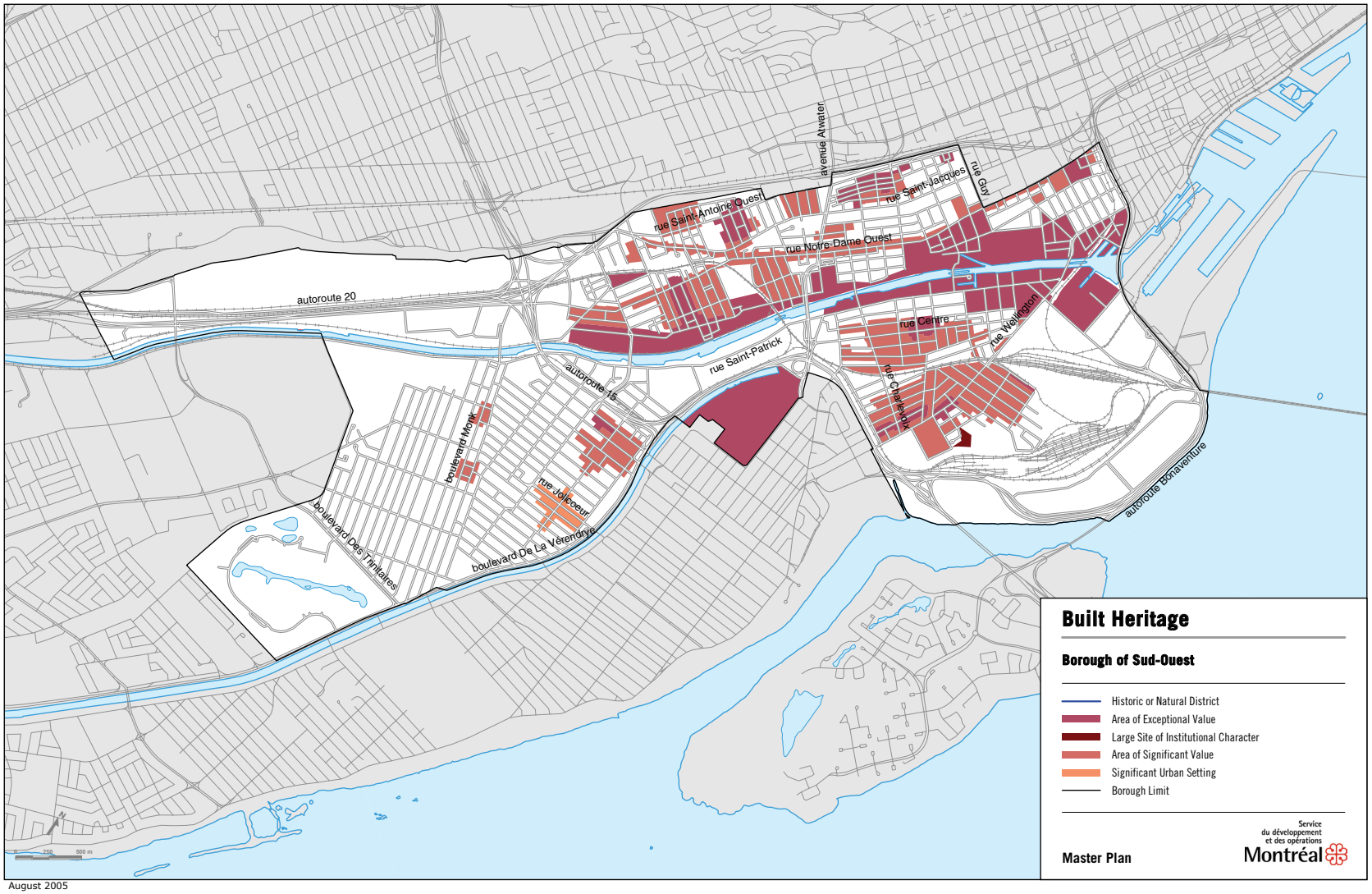


fig.1.2.7 From the Montreal Master Plan (2005), this map depicts the zoning of built heritage from 'significant urban setting' to 'area of exceptional value'. The zoning of entire blocks of land, including many buildings within, communicates a desire to maintain heritage status in the entire borough.

fig.1.2.8 (Opposite Page) This earlier plan from the 2005 Master Plan, shows the general desired outcome for the region as a connecting corridor of parks and bike paths. Areas slated for 'restoration' are listed as well, including areas for redevelopment.


QUALITÉ DE L'ENVIRONNEMENT
Atténuation des nuisances liées au bruit
QUALITÉ DES MILIEUX DE VIE
Secteur à revitaliser
RÉSEAU CYCLABLE
Voies cyclables potentielles
SECTEUR INDUSTRIEL
Développement d'un nouveau secteur d'emplois
SECTEUR D'EMPLOIS INSTITUTIONNELS
Consolidation des activités
PATRIMOINE NATUREL
Protection de la falaise Saint-Jacques
RÉSEAU ROUTIER
Réaménagement projeté de l'échangeur Turcot et amélioration des liens entre les parties est et ouest de l'arrondissement
SECTEURS MIXTES
Diversification et intensification des activités
RÉSEAU ROUTIER
Réaménagement projeté de l'échangeur Angrignon
SECTEURS À TRANSFORMER
Réaménagement et développement de secteurs d'emplois diversifiés
PAYSAGE URBAIN ET QUALITÉ DE L'ARCHITECTURE
Amélioration du paysage urbain des autoroutes 15, 20 et Ville-Marie
RÉSEAU ROUTIER
Déplacement et rabaissement projetés de l'autoroute Bonaventure et sa transformation en boulevard urbain
PAYSAGE URBAIN ET QUALITÉ DE L'ARCHITECTURE
Mise en valeur du parcours riverain
PATRIMOINE BÂTI
Protection et mise en valeur
PAYSAGE URBAIN ET QUALITÉ DE L'ARCHITECTURE
Mise en valeur des entrées de ville
SECTEURS INDUSTRIELS
Consolidation et revitalisation des secteurs
RÉSEAU ROUTIER
Liens routiers potentiels entre Pointe-Saint-Charles et le secteur adjacent à l'autoroute Bonaventure
QUALITÉ DES MILIEUX DE VIE
Soutien de la vitalité commerciale
RÉSEAU CYCLABLE
Voie cyclable potentielle
QUALITÉ DES MILIEUX DE VIE
Secteur à revitaliser
TRANSPORT COLLECTIF
Système léger sur rail à l'étude
TRAME VERTE
Protection et mise en valeur du parc Angrignon
PAYSAGE URBAIN ET QUALITÉ DE L'ARCHITECTURE
Réhabilitation des berges
Parachèvement du parcours riverain
RÉSEAU CYCLABLE
Voie cyclable potentielle
La synthèse des orientations pan-montréalaises
Arrondissement du Sud-Ouest
Plan d'urbanisme
Montréal
Août 2005

and significance of the artifacts present, but fails to isolate buildings or any industrial artifacts in particular. There is a great pressure to brand this region as historic, yet none of the artifacts present are treated as more than objects, a backdrop to remind the new residents of the site's historic ties.

Amongst the paths along the canal are sites such as the 'Archaeological Gardens' where the ruins of a former mill have been preserved and fenced off for archaeological exploration. Though I have passed this site on a number of occasions, I have never witnessed any archaeological digs occurring. On one visit in particular, I was photographing the site when asked by a resident out for a morning walk if I knew what the site was. There was no signage present to identify it and no interaction was allowed. After explaining to him its significance to the history of the area, the resident assured me that he would have to come back sometime and scale the fence to explore the site himself.

fig.1.2.9 The 'Archaeological Gardens' contain the ruins of an old mill, fenced off from public access. A sign indicates the area is under the jurisdiction of Parks Canada for archaeological studies, through the digging seems to be of little concern as the site is left untouched.

fig.1.2.10 (Opposite Page) This map depicts the most common path along the Lachine Canal and its major points of interest along its path.

MAIN LACHINE PATH AND NODES

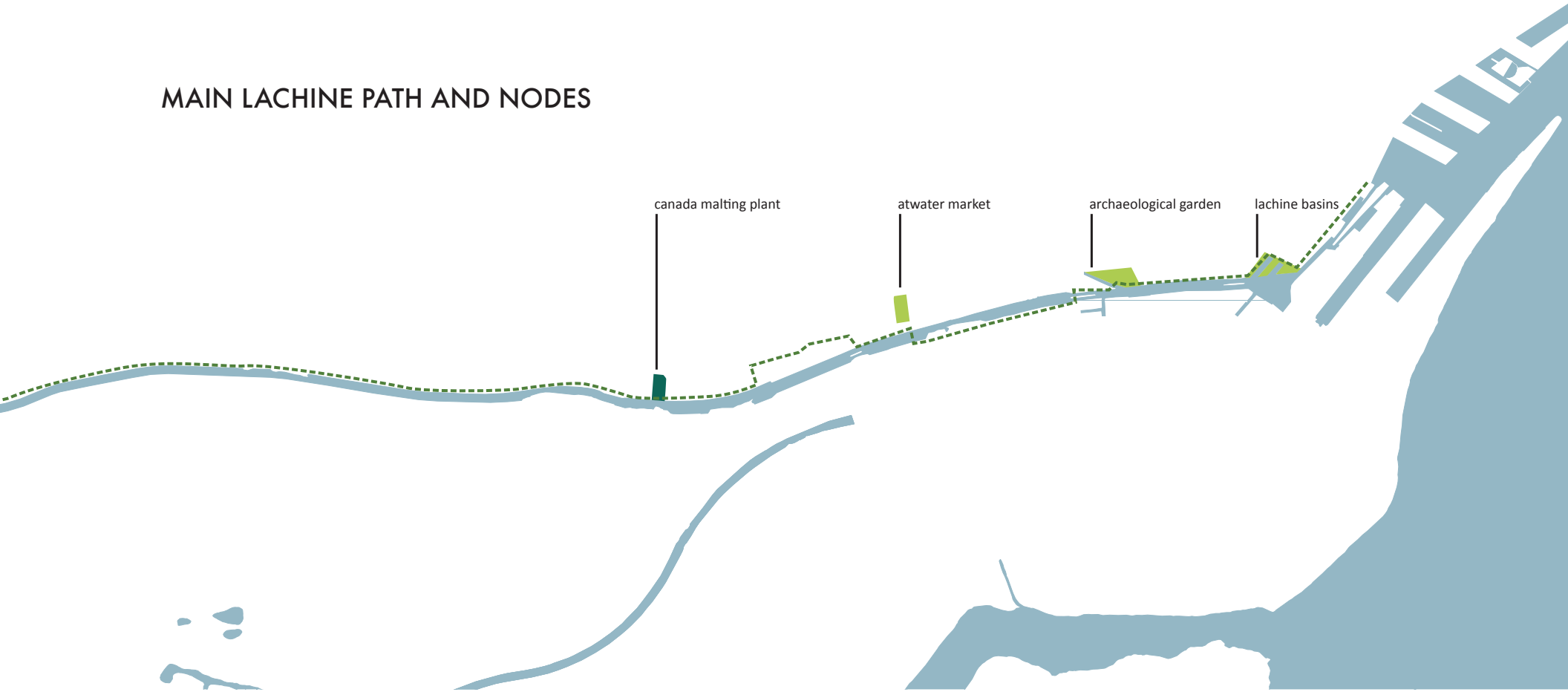


fig.1.2.11 Le Bassins du Havre construction site, where construction has halted due to various financial reasons. In its abandonment as former Canada Post sorting site it housed a popular dog park that despite the construction has endured.

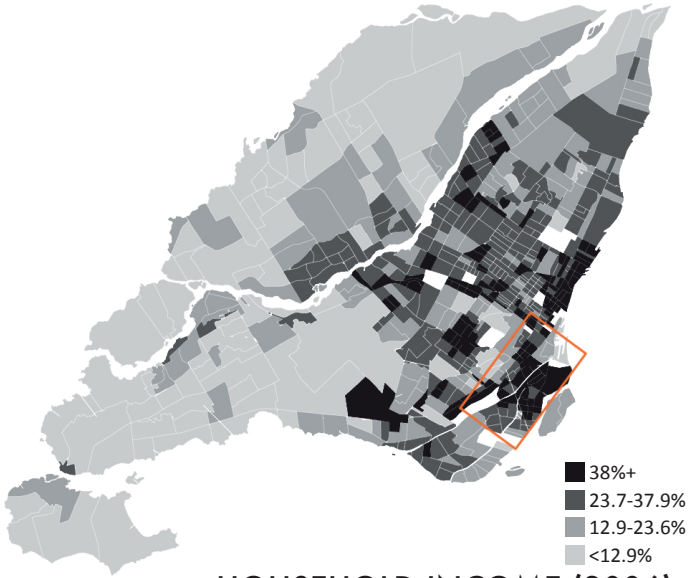
fig.1.2.12 Le Bassins du Havre construction site signage litters the Lachine Canal path promising new luxurious residences and commercial opportunities.

fig.1.2.13 (Opposite Page) Based on the 2006 census, the areas of Griffintown and the Sud-Ouest Borough area areas with a low household income.

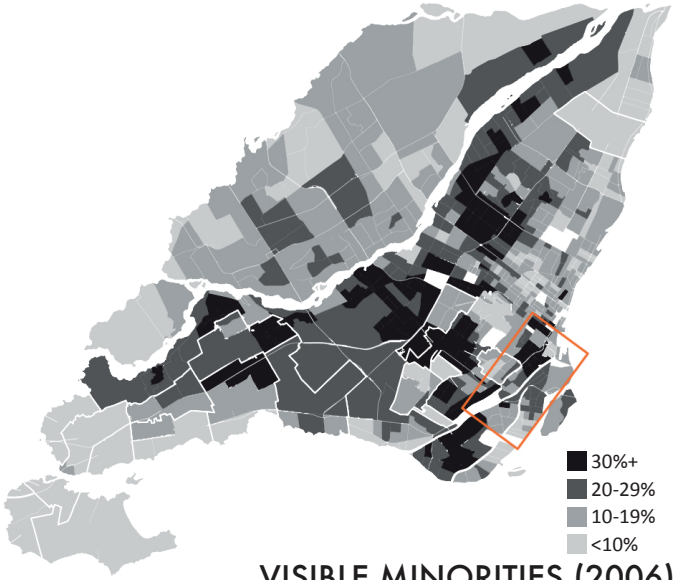
fig.1.2.14 (Opposite Page) Based on the 2006 census, the areas of Griffintown and the Sud-Ouest Borough area areas with a high percentage of visible minorities. With low real-estate values and older housing, the area can be viewed as a popular hub for new immigrants.

"According to the proponent, once the work is completed, the project will have a positive effect, For example, it cites the improvement in recreational and tourism activities and in the quality of life of most residents as well as economic spinoffs for businesses along the canal. However, real estate development could lead to the gradual displacement of certain segments of the population. Since Parks Canada has no authority in this regard, it suggests that the municipalities concerned have an important role to play in preventing such an occurrence."

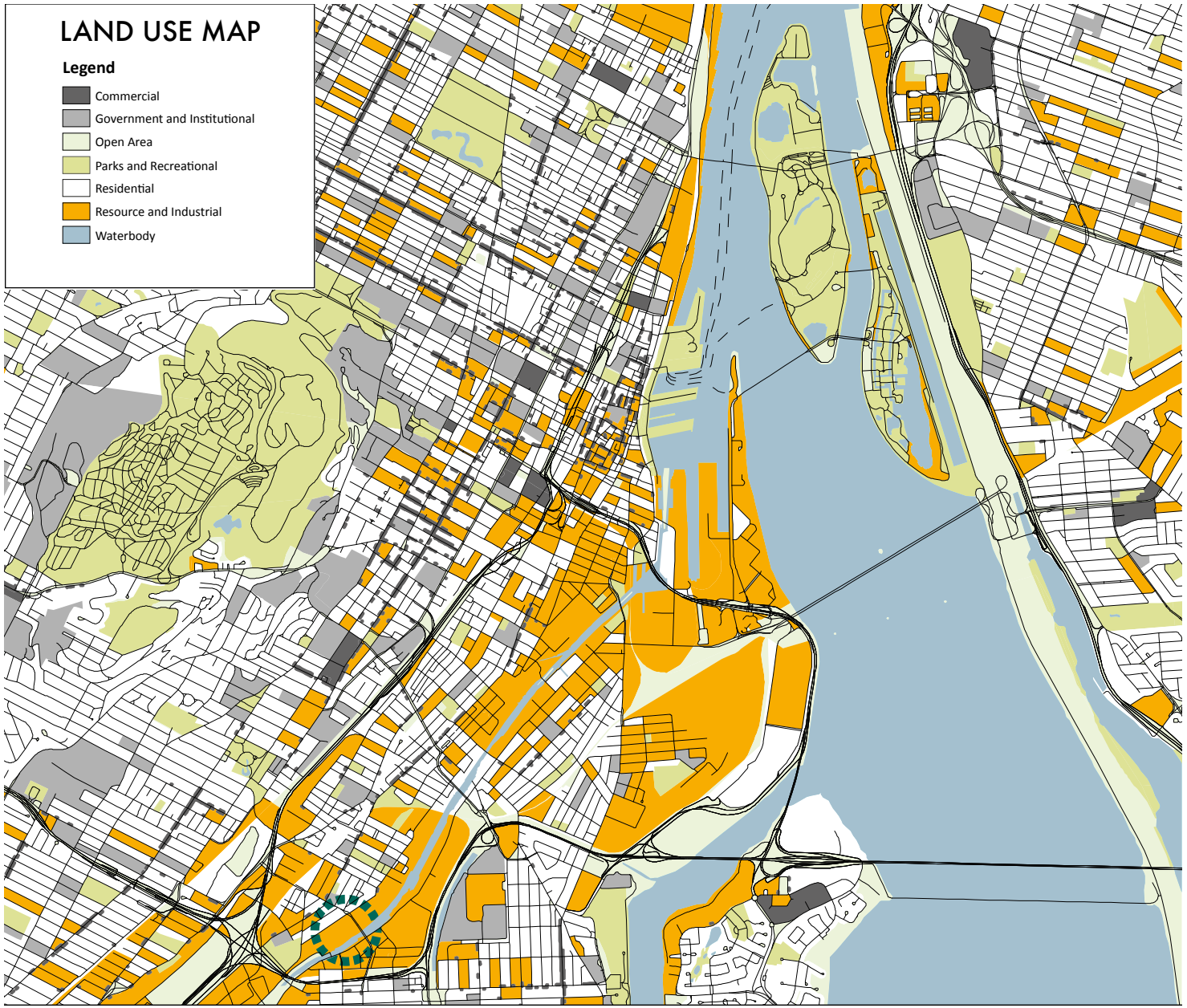
Lachine Canal Decontamination Project, 19



HOUSEHOLD INCOME (2006)
PERCENTAGE OF POPULATION IN LOW INCOME



VISIBLE MINORITIES (2006)
PERCENTAGE OF POPULATION


LAND USE MAP
Legend
Commercial
Government and Institutional
Open Area
Parks and Recreational
Residential
Resource and Industrial
Waterbody

Though the historic treatment of the canal is questionable, the success of the corridor as leisure network is evident. The bike paths along the canal are popular and heavily used to the point of being overly trafficked particularly from Montreal Terminal to Atwater Market – it's largest point of interest. Leisure in the canal corridor however, had also been planned by Montreal and Parks Canada to include a water leisure network, and to that effect it has been greatly unsuccessful. Residents in the area are aware of the dangers of the water and avoid it, rendering any intention of leisurely activity undesirable.

Beyond the heritage corridor and the contaminated canal remains a town that bears the burden of any changes to the region. Though the resident's livelihood no longer depends on the canal corridor, its impact permeates their daily lives. With the increasing number of developments changing the outlook of these towns, it begs the question of what is to be done with the canal; can it evolve beyond its stagnant toxicity?

fig.1.2.15 (Opposite Page) The Land Use Map above indicates a high level of enduring industry before new developments began to occur. The commercial centre of Griffintown can be easily distinguished as Rue Notre Dame contains the majority of commercial zoning.

fig.1.2.16 This photo, taken at Rue St-Ambroise, indicates the level of change in real estate values as both old houses and new lofts are for sale in great abundance. It is a neighbourhood in transition.


LE CANAL DE LACHINE
THE LACHINE CANAL
Précurseur de
la voie maritime
Precursor to
the Seaway

1.3 TOXICITY

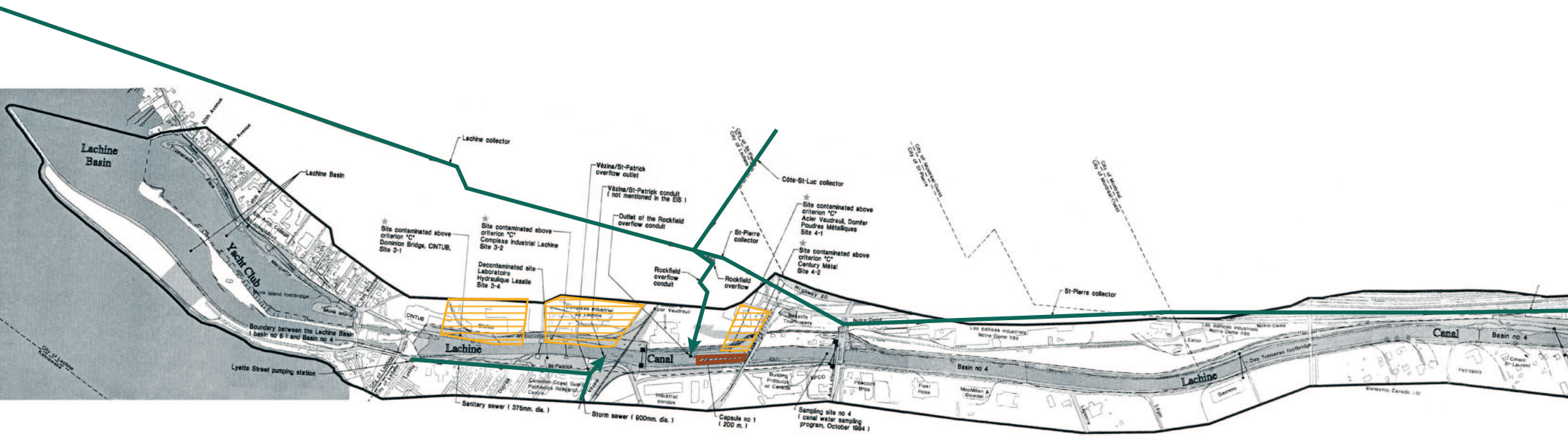
Since the inception of industrial activity along the Lachine Canal periodic dredging was required to remove contaminants from settling along the bottom of the canal. These contaminants were transported elsewhere, and since the closing of the canal and its locks to the normal water flow, a bed of contaminants averaging 26cm has amassed.[1] Though studies have been conducted to assess the environmental impact and health concerns of the contaminants, including hydrocarbons, coolants, and heavy metals (such as lead and mercury), they remain entirely in place.[2] The canal is still annually drained and cleaned, but now it is for the removal of garbage – modern technological wastes including refrigerators, laptops and water heaters[3] – adding insult to its neglect.

Shortly after the closing of the Lachine Canal in 1970, master plans were developed for the industry dependant canal corridor to stem the affect of the declining economy through increased notice. The area, now under the jurisdiction of Parks Canada, was focused to enhance and restore its historic value to display as an artifact of the city's rich history.[4] Along with the restoration efforts, Parks Canada invested in new trails to open the canal to increased leisure activity. However, concerns for the toxicity led to a decrease in activity and eventual closure of the canal followed by funding for a Decontamination Report headed by several stakeholders.

fig.1.3.1 (Opposite Page) Rusted CN rail bridge on the canal path.

fig.1.3.2 Image depicting the draining of the canal to cleanse it of recent accumulations of garbage.

fig.1.3.3 Image depicting the garbage found in the canal, including a water heater and shopping cart. Often obsolete technology such as laptops are found.



"In 1989, the intention of the Canadian Parks Service was to open the canal to all types of recreational activities, including swimming. Hence, this justified the decontamination project on the grounds of safeguarding public health. Moreover, the joint panel developed its guidelines with this use in mind However, in 1993, the proponent scaled back its plans for recreational activities in the canal to secondary contact activities only. Nonetheless, in the proponent's opinion, these activities still justify decontamination of the canal sediments. Moreover, in the context of the federal policy which calls for the Government of Canada to set an example in the area of environmental clean-up, the proponent considers its project a measure to clean up the aquatic environment."

(Lachine Canal Decontamination Project, 43)

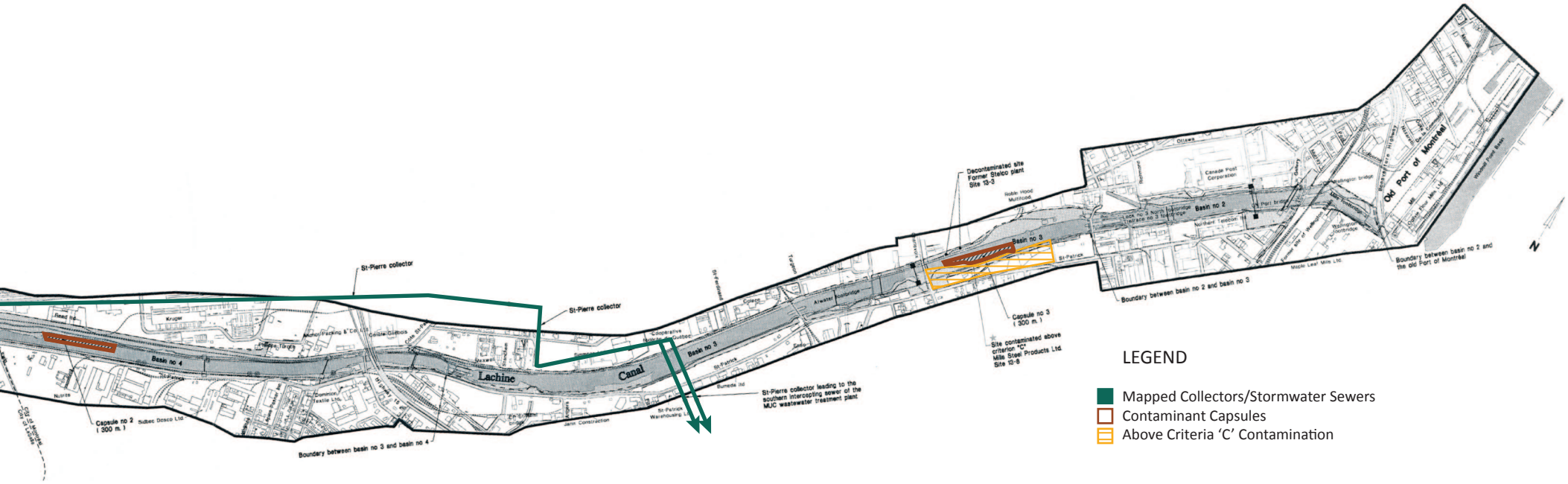


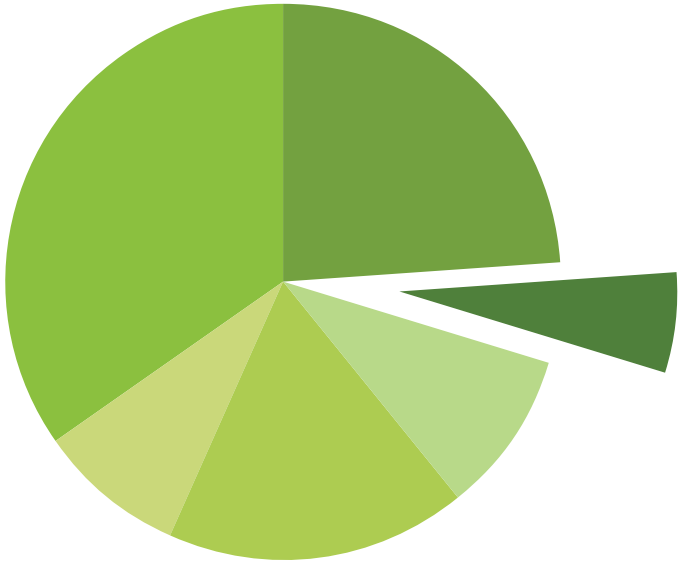
fig.1.3.4 The map included in the Decontamination Report indicates key areas for concern including soil and water contamination. As disclosed in the report, the majority of the canal was listed as Level 3 indicating a health risk to 90% of benthic organisms. The map identifies the sedimentation caps that were introduced as a result of the report and the areas that were listed as 'above Level 3'.

"In June 1989, … the Canadian Parks Service asked the federal environment minister to appoint an environmental assessment panel to conduct a public review of the Lachine Canal decontamination project. … Parks Canada and the Old Port of Montreal Corporation proposed to conduct a clean- up of their respective sections of the canal and to dispose of contaminated sediments in order to reopen the canal to the public for recreational use. Given the scope and nature of the project and its potentially significant environmental and socio-economic impacts, the federal authorities requested … that the project be referred for public review by an independent panel."

(The Joint Environmental Assessment Panel, 43)

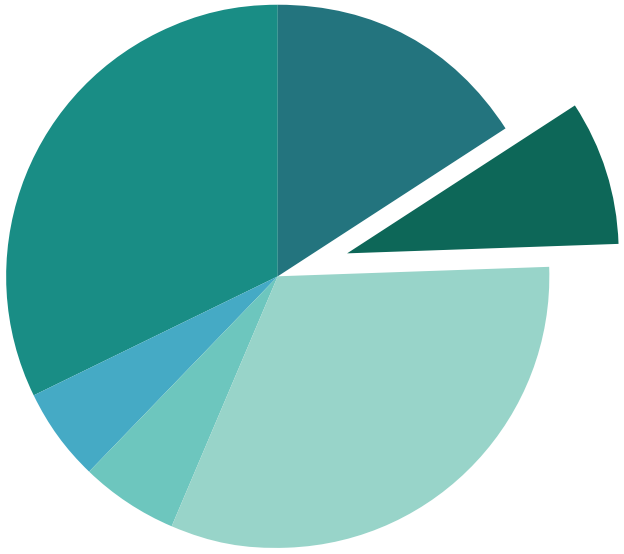
After extensive studies the Decontamination Report identified areas of extremely high contamination in the water, listed either by levels 1, 2, or 3. Level 3 which included the majority of the canal, was described as "Adverse effects threshold, affects 90 per cent of benthic organisms; above this level, dredged materials must be treated or contained."[5], warranting immediate action. The report highlighted several key factors in the decontamination process including concerns for the recontamination of the canal by the resuspension of settled contaminants. It was feared that reopening the canal to pleasure craft traffic – the largest concern for the tourist based economy planned for the canal – would aggravate the problem, warranting testing on what method of decontamination would be most suitable for water traffic. The report included information provided by experts in the fields of environmental science that outlined the treatment methods available ranging from capping as least expensive and least time consuming, to chemical and organic separation, as the most expensive and most

fig.1.3.5 (Opposite Page) Graph depicting data accumulated from the Lachine Canal Decontamination Project that indicates duration and cost of the reviewed methods of remediation. The isolated data indicates the method selected by Parks Canada and the independent review panel.



Estimated Cost Per Method

- **In Situ Containment** (containment on the bottom of the canal)
- **Terrestrial Containment** (dredging and containment on a seperate site)
- **Physico-Chemical Extraction** (chemical and organic seperation of contaminants for re-use)
- **In Situ Stabalization** (solidification through chemicals and filtration of contaminants in the canal)
- **Ex Situ Stabilization** (dredging and chemical solidification off site)
- **Encapsulation on Bank** (dredging and containment on the canal's shores)



Estimated Time Per Method

- **Terrestrial Containment** (dredging and containment on a seperate site)
- **In Situ Containment** (containment on the bottom of the canal)
- **Physico-Chemical Extraction** (chemical and organic seperation of contaminants for re-use)
- **Ex Situ Stabilization** (dredging and chemical solidification off site)
- **In Situ Stabalization** (solidification through chemicals and filtration of contaminants in the canal)
- **Encapsulation on Bank** (dredging and containment on the canal's shores)

time consuming. The report contains comparisons of cost and time as the two key factors, neglecting the most important factor – the achieved decontamination levels. Capping, the method chosen by the decontamination project, serves to either isolate the contaminants using geotextiles or to move the contaminants to another location without eliminating or separating the harmful compounds to be broken down and reintegrated into the natural system. This method, however, was favoured for the shortened timeline in regards the reopening of the canal and the lower cost.

The Canadian government invested approximately $100-million in the Lachine Canal corridor improvements organized by Parks Canada between 1984 and 2001.[6] As the choice method of decontamination, capping in situ was estimated at a cost of $6-million (in 1993)[7], it is clear that the majority of the investment was spent on improvements to the corridor in the form trails and historic signage as well as the restoration of the historical condition of the canal in place of the more pressing decontamination efforts. The greatest obstacle to decontamination lies in the complexities of brownfield redevelopment from a number of disparate sources, including the diverse interests of all stakeholders involved as well as political and economic motivations.[8] The recurring dilemma of the Decontamination Project Review Panel was a lack of clear distinction of what the canal's future will be. Devoid of any accordant future scheme, the panel deliberated with individual concerns in mind that the canal's toxicity required little to no acknowledgement, only addressing a handful of the most volatile sites. In conclusion, the panel ended with comments such as these:

"At the beginning of the public review, the health risks associated with contact with the water were perceived as real concerns. Decontamination of the sediments was therefore endorsed by the participants at the outset. There was no particular public concern about cleaning up the aquatic environment. Most of the participants considered decontamination of the sediments a worthwhile end in itself but it was no longer viewed as essential to the protection of their health or to the development of the canal. Moreover, some participants questioned the need to decontaminate the canal, preferring to see public funds used to enhance rather than decontaminate the canal"

(The Joint Environmental Assessment Panel, 45)

Activities such as swimming and fishing are still banned in the Lachine Canal for the potential health risks, but as of 2002, leisure boating was allowed to resume. Despite the efforts of Parks Canada the canal remains largely unused, understood by the public as toxic and harmful. Even now, after the 'decontamination' efforts have been long concluded, levels of harmful biological contaminants and the suspension of heavy metals have increased.[9] Monitoring by volunteer community organizations, headed by local scientists have found an increase in E-coli bacteria and blame the former industry's water output connections along with unknown city sewer connections that have been long forgotten for the increase. Some of the potential biological contaminant sources had been identified by the Decontamination Report, but were neglected on the basis that the known storm water drains and overflows connected to the canal would not resuspend the industrial contaminants, relegating their responsibility to another regulatory authority.[10] Some scientists such as Catherine Mulligan, who has extensively studied the canal's contamination believes that there are a number of possibilities

as to why the contamination levels have begun to rise, citing a need for in situ analysis and a level of standardization for testing that would enable a holistic solution. She also states that "[l]ong-term monitoring will assist in determining the effectiveness of source control and the mitigation strategy. … Public perception will be improved through citizen and community forums and education of the public of in situ means"[11]. Her call for further transparency has the potential to incite the interest of the public and effect a change of policy that scrutinizes current mitigation strategies, including the implementation of capping which has yet to prove itself as a permanent solution.

CHAPTER 2 INTERFERENCE

DESIGN INFLUENCES AND STRATEGIES

RUINS AND OBSOLESCENCE

POST-INDUSTRIAL CULTURE

NETWORKS OF PRODUCTION

2.1 RUINS AND OBSOLESCENCE

PERCEPTIONS OF THE INDUSTRIAL ARTIFACT

Common interpretations of obsolescence, in particular the industrial ruin, reside in the realm of societal perception. Their treatment speaks of the state of society today and its perception of the obsolescent. The ruin captivates when made of stone or brick, but rust and grime are indicative of the machines of technology that enslave us.[1] It is in this sense that modern ruins are treated as either canvases of art or mere wastelands awaiting the clean slate of new development. Even amongst these disparate views there is a dismissal of the scale of impact these networks and structures of industry made that still resonates today.

Our urban cityscape is flooded with the technologies of function and convenience. However, when these technologies cease to function, they are either destroyed or enter into a purgatory of stagnation. This de-valued space is what Antoine Picon describes as 'Anxious Landscape' - a landscape of technological obsolescence and abandoned networks of production that we are uncomfortable with.[2] In our rapidly expanding realm of obsolescence we confront more dereliction within our cities and their peripheries then ever before. The question that remains is: What is to be done with these technological artifacts and the landscapes they inhabit to return them to a productive and meaningful urban artifact?

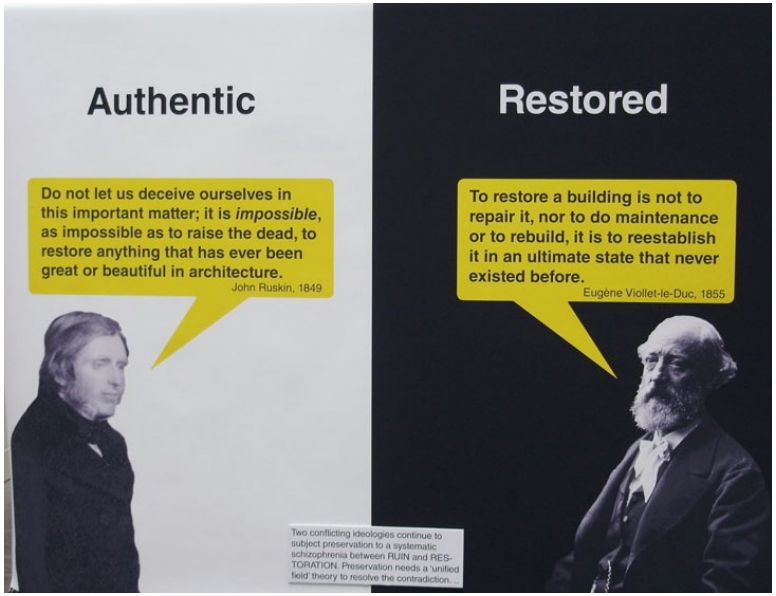
fig.2.1.1 (Opposite Page) The former mill ruins at the St. Gabriel lock site, identified on Parks Canada maps as 'The Archaeological Gardens'. Seemingly accessible to the public by the park name, they are in fact fenced off from the public path and locked for archaeological digs slated for the unforeseeable future.

BETWEEN GENTRIFICATION AND PRESERVATION

As polar opposites gentrification and preservation imagine two distinctly different futures for the Lachine Canal region. Where preservation and gentrification collide exists a community devoid of continuity, perpetually relegated to the past and relocated by the promise of progress. Both motives alter the perception of the ruin in the landscape, condemning and mimicking the decay that defines it as sublime.

The forces of gentrification are mainly politically and economically based, targeting the undesirable areas of the city. Through the recasting of neighbourhoods, the image of an area may change to draw people of a higher social class. Gentrification frequently involves the alienation and eventual removal of local inhabitants in favour of the new.[3] In many abandoned or relatively uninhabited areas, the renewal creates a positive effect energizing an otherwise stagnant area. However, in an inhabited area, it forces a relocation of an otherwise entrenched people.[4]

Devimco, Montreal's chosen developer for Griffintown and parts of the Lachine Corridor, proposes new projects focusing on the restructuring of commercial activity. Their proposed and adopted developments create new shops and condominium towers casting the area as prime real estate.[5] These developments treat the site as a slate to be wiped clean of the grime of it's industrial past. The impoverished neighbourhoods are recast with steel and glass, removing the brick and rust that lends the area its character and aesthetic appeal. In an ironic twist, the developments seek the industrial character, but treat its aesthetic as waste. It relegates the ruin to merely a backdrop, displaying the



old factories and mills across the canal as only a canvas to see from condominium windows.

In counterpoint to gentrification, preservation glorifies the historical promoting it to such an extent that its perseverance is paramount. In essence, it promotes the maintenance of the original as an image of its past frozen in time. This exemplification of the past relegates regions deemed historic to static voids of inactivity. This frequent occurrence is highlighted in the OMA exhibition titled 'Cronocaos', where world heritage sites were identified as occupying a large percentage of land internationally.[6] This exponentially growing percentage of heritage land is problematic in a world where space is of great value, particularly in dense countries where agricultural lands and natural habitats are limited. It is in this framework the arguments of Violet Le-Duc and John Ruskin were exhibited, each defining preservation and restoration in unique ways, asking what needs to be preserved, how, and why?

"We need alternative ways of translating the remains from the past, and this need is especially urgent because, given the over abundance of historical information, there is a risk of saturating memory with a proliferation of narratives and details, which may eventually neutralize and trivialize the past ..."

(Alfredo Gonzalez-Ruibal, 250)

fig.2.1.2 (Opposite Page) The Nord-Elec Loft complex, originally the Northern Electric Manufacturing Complex, was one of the first redevelopment projects along the Lachine Canal. It included a small marina and dock space so that residents might easily access the canal.

fig.2.1.3 (Opposite Page) St. Ambriose St. residences clearly depict the differentiation between adaptive re-use and new development mimicking the former industrial aesthetic.

fig.2.1.4 Exhibited at Rem Koolhaas' Cronocaos, this image depicts the arguments of Viollet-le-duc and John Ruskin in the debate of restoration and the authentic. Other exhibits expressed the percentage of heritage areas contributing globally to 12% of inhabitable land area.

Over time, the relationship of the artefact to its surroundings is trivialized through heritage restoration. Restoration can accommodate a new purpose and history, though frequently the aim is towards a false image isolated from its current time. This appropriation of the industrial aesthetic is well represented in the gallery DIA:Beacon. The modern art gallery promotes the reading of the space as an artist studio through its industrial aesthetic to make the art more accessible to the visitor.[7] This former Nabisco factory, decked in its patina of lightly covered pollution, is catering to a reading of the space that has never existed through a fantastical past that the aesthetic communicates. The very processes of preservation and gentrification are displayed in the architecture behind the artwork, catering more to tourism than the artifact and place. The adaptation of the derelict transforms it into a palimpsest of history, but what is conveyed through its reuse and historic narratives?

Though the aesthetic communicates a narrative of its own, it is the form that better interprets and displays the relationships of the past. Herzog and DeMeuron represent the propagation of the past in the Tate Modern Museum where the architecture manifests the former relations between industry and the city, while imbuing the artifact with a new purpose. The former power station was constructed in the heyday of industry across the Thames from St. Paul's Cathedral. Its main turbine hall rivaled the towering cathedral representing the prowess of industry. In the Herzog and DeMeuron design, the height of the turbine hall can

fig.2.1.5 The restored canal basins labeled by Parks Canada are aimed at retuning the canal to its past image.

fig.2.1.6 The restored canal basins showing the new concrete walls cast after the site was dredged of soil infill from the subway construction.

fig.2.1.7 The typical DIA:Beacon gallery space.

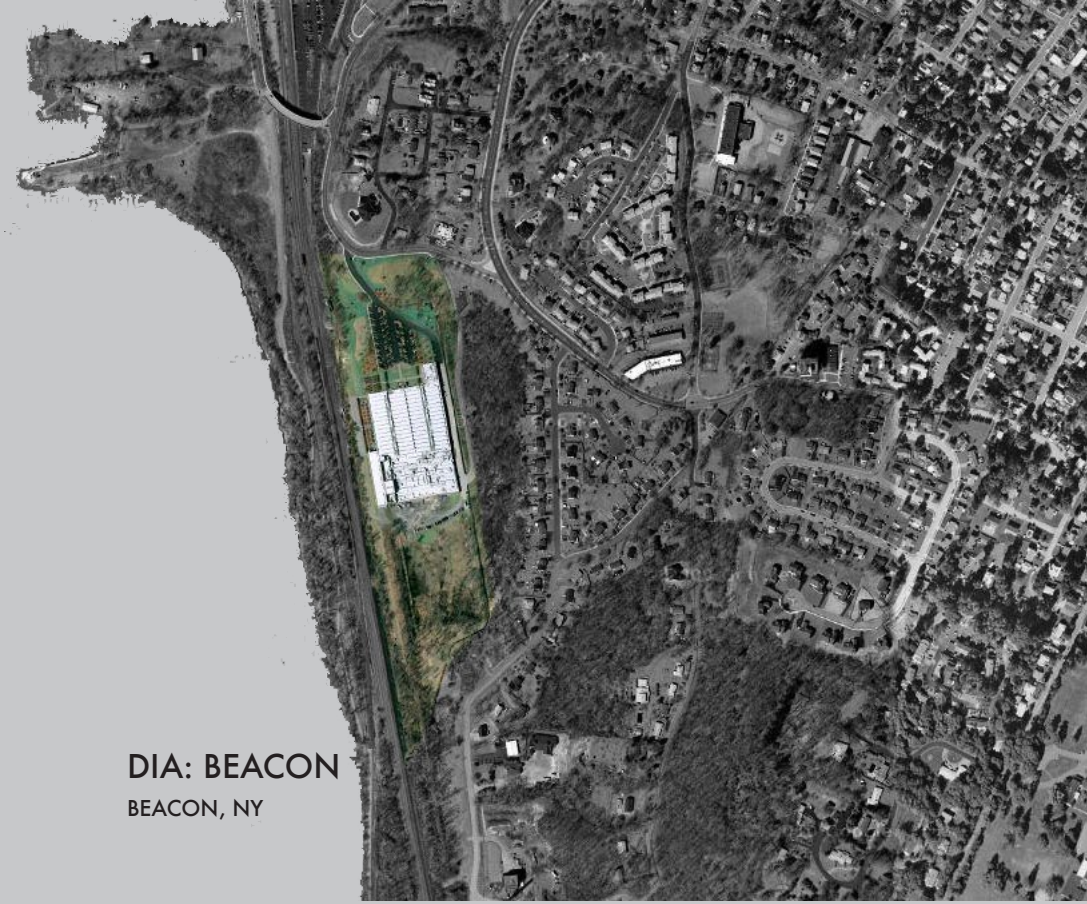


fig.2.1.8 Aerial map of the town of Beacon, highlighting the DIA gallery and lands.

DIA: BEACON

BEACON, NY

The DIA: Beacon modern art gallery in the former Nabisco factory of Beacon, New York was a means of reinvigorating the local economy through tourism. The gallery spaces are a testament to the change that gentrification caused in Beacon through the renewal of a post-industrial town.[i] The galleries feature the industrial structure and brick which in turn attracts a modern art with an industrial aesthetic. The featured materiality of decaying technology and rusting metal is seen in such artwork as the Richard Serra sculptures housed here. This preserves it as a museum for a higher class tourists seeking out these art works in their seemingly native production space. In fact, the former Nabisco factory was a factory for production, and never an artist studio.

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i. Vogel, Carel. 'An Old Factory is a Haven for New Art' The New York Times Apr. 23, 2003

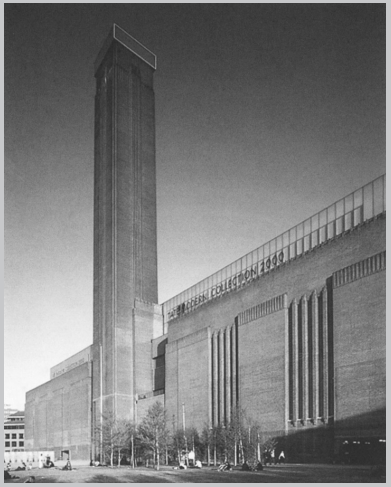
be scaled by the pubic through an accessible 'beacon' encouraging the public to observe this relationship. It creates a visible connection to the cathedral, serving as a reminder of past dystopias obsolete.

" … [In] his book 'The Tourist', sociologist Dean MacCannell had argued that the myth that binds industrial, and hence postindustrial, society was that we no longer live the real life in the real place. This unending search for the real and authentic makes us all tourists. We travel and we seek and we look. … industrial society anxiously strives to learn about what lies behind the scenes of our lives."

(Marc Trieb, 205)

Marc Trieb describes this need to learn the truth behind the ruin; the search for the authentic.[8] The reality of the Lachine Canal and its artefacts lies in the contamination and succession of infrastructural developments that it has evolved from. It is the changing landscape and the relationships between the ruin and the natural world that incite interest beyond mere aesthetic. It is communicated by the ruin and its context when allowed to evolve outside the museum of the heritage park and beyond the sterilization of modern developments.

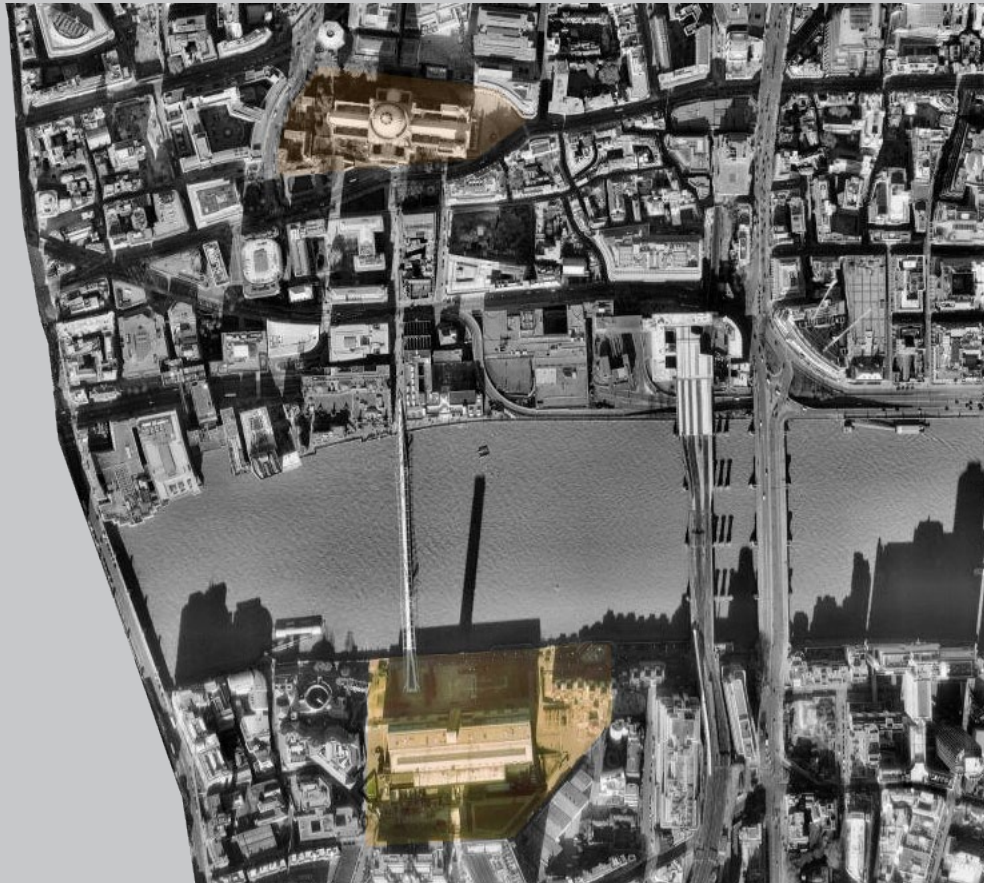
fig.2.1.9 View from the Tate Modern's accessible cafe overlooking the Thames River and St. Paul's Cathedral in the distance.



TATE MODERN

LONDON, UK

The Tate Modern, located on the Thames across from St. Paul's Cathedral, is an industrial adaptation of a Power Station by Herzog and De Meuron. This modern art gallery was treated as a palimpsest of history as it preserves not only the existing patched brick, but also the relationship between the cathedral and power station that once exemplified the power of industry in England.[i] Though only the facade and turbine hall remain of the original building, the dominance of this landmark is maintained by its scale and its perspective through its accessible balconies and glazed additions on the city surrounding it.[ii]



i. Crisman, P., '*From Industry to Culture: Leftovers, Time and Material Transformation in Four Contemporary Museums*', The Journal of Architecture, Vol. 12 No. 4 (2007), 408

ii. Mignon Nixon; Alex Potts; Briony Fer; Antony Hudek; Julian Stallabrass, *Round Table: Tate Modern*, The MIT Press, October, Vol. 98, (Autumn, 2001), p. 20

fig.2.1.10 The Turbine Hall entrance to the Tate Modern gallery.

fig.2.1.11 Aerial map of London highlighting the Tate Modern and St. Paul's Cathedral - two diverse poles of power in the city fabric.

(WASTE)LAND

The abject derelict of the industrial ruin is defined by modern society's perception of waste. The connections between the convenience of modern technology and the waste we produce is not apparent. The efficiency of removal immediately sterilizes our environment of the outmoded. This lack of exposure to the processes of industry and its potentially scarring effects has left us in a culture of dismissal and irresponsibility. It is in this mentality that our industrial ruins – testaments to past networks of production and their toxicity – are considered wastelands.

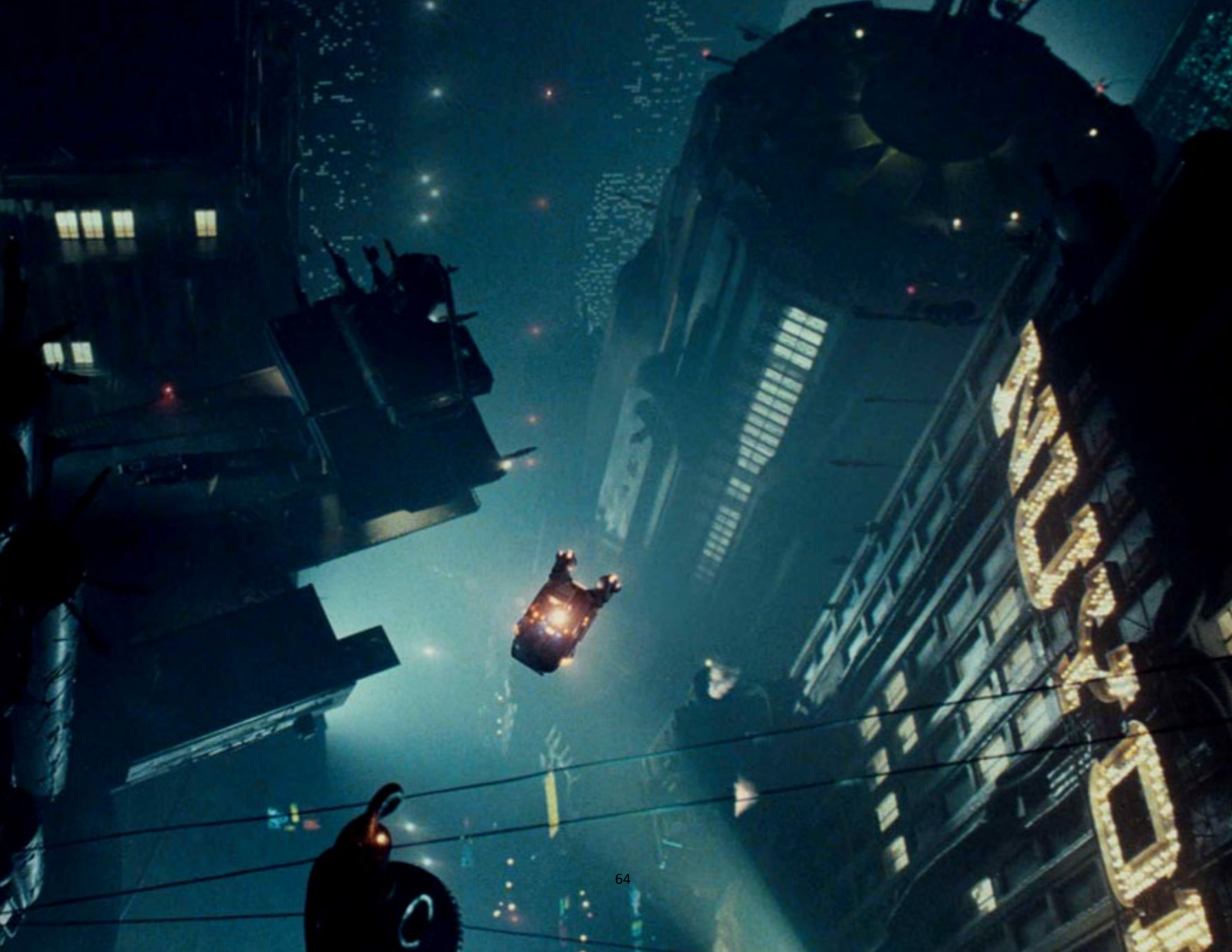
"It is necessary to go down to the ground and describe stinking rubbish … to destroy the virtual myth, because the world is still about material things. Archaeology reminds us that there is a chaotic material reality behind the clean and invisible net-works of globalization and the digital media, a materiality that is not reducible to social constructions and symbolic meanings."

(Alfredo Gonzalez-Ruibal, 254)

There is a fear and abhorrence exposed in not only the landscapes of waste, but those of technology as well. When Picon discusses the futuristic scenes of films such as *Blade Runner* that predict the future of our urban environment in the glorification of technology, there is made visible as sense of these prisons of obsolescence amidst the total annihilation of nature.[9] In this future, we are immersed and trapped

fig.2.1.12 The former Canada Post Lands on the Lachine Canal in the process of redevelopment into a luxury loft complex were abruptly halted leaving mounds of gravel over a former dog park. The local inhabitants however, continue to use the site as a dog park.

fig.2.1.13 (Opposite Page) A scene from 'Blade Runner' depicting the density of technology and infrastructure in the imagined future city.



by the fear of our technological achievements at the cost of our natural environments. The necessity to confront the ramifications of modern technology, its rapidly outmoded obsolescence, and its pollution is paramount in an age of responsible architecture.

This disconnect is made apparent in modern buildings such as the B_mu tower by R+Sie(n) Architects, where the building actively participates in the cleansing of the air. Though this design is ambitious, it opens new possibilities for architecture to expose and participate in the inevitable pollution as a product of its construction and use. The façade of the art gallery physically bears the pollution but there is no interaction with it due to the inevitable disconnect between the interior galleries and the exterior dust collectors.[10] The harsh confrontation between occupant and its waste is avoided where instead this abrasive conflict could incite a message of responsibility. This is exemplified in Montreal by the acceptance of the annual cleansing - a mere superficial scraping - of the Lachine Canal from dredged garbage. Cited by industry professionals as an underfunded project[11], the decontamination effort could never truly succeed without this abrasive contact to foster more public support and interaction with not only this toxic riverbed, but also the obsolescence left in its wake.

All structures bear the inevitable patina of dust and toxicity that instil a sense of the unclean and undesirable. This manifests in the work 'The Ethics of Dust' where the pollution becomes the trace of all that is left behind. This project in particular isolates the dust and pollution, separating it from the building to be studied in segregation. Though we are repelled by the unclean, these traces are often what incite interest in buildings as they appear to have endured through time, measured by the ever increasing build-up of dust. Exploring this duality between fear of the toxic and the appealing patina of age, can foster a greater

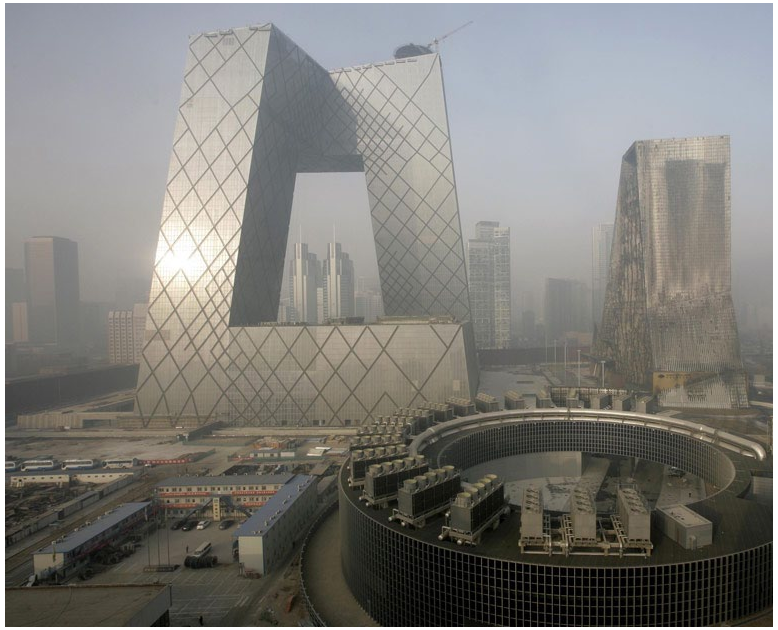
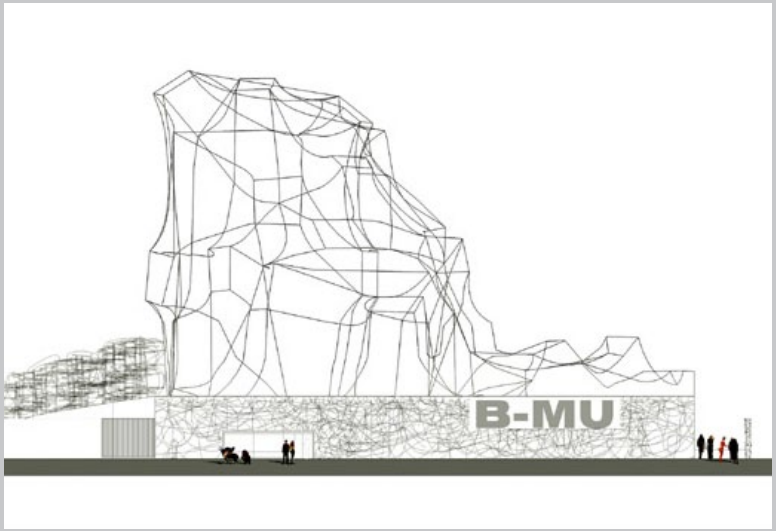


fig.2.1.14 Rem Koolhaas's CCTV complex in Beijing where smog from extensive air pollution changes the perception of the surrounding city. The facade of the CCTV building was intended to have projections displayed on it that negate the effects of smog and dust.



B_MU TOWER

BANGKOK, THAILLAND

The B_Mu tower, sited in Bangkok, was a proposal designed by R+Sie(n), for an art gallery with a unique facade meant to attract dust and grime. Over time it would evolve into a palpable facade of airborne pollution. The facade is unique in that it is formed from an electromagnetic mesh that attracts particulates suspended in the air. The pollution in Bangkok has contributed to a perpetual state of overcast skies. Though this project isn't likely to alter this state, it opens a dialogue as to how humanity might begin to address is pollution.[1]

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1. David Gissen, *'Toxic Territories'* in Architectural Design, vol. 80, no.3 (2010), 57

fig.2.1.15 B_Mu Tower Elevation.
fig.2.1.16 B_Mu Tower Concept Rendering.

THE ETHICS OF DUST

VENICE BIENNALE

'The Ethics of Dust', a project by Otero-Pailos represents the physical built-up of grime and pollution on the façade of buildings over time. By rendering visible the pollution, the wall is left in an incomplete state of restoration where its character has been stripped away and it awaits a new covering from the scars of absent grime.[1]

Through the application and careful re-ordering of latex restoration sheets, the form of pollution is reassembled where the absent structure once was.

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1. Gissen, David. '*Subnature: Architecture's Other Environments'*. New York: Princeton Architectural Press. 2009, 96

fig.2.1.17 The Venice Biennale Exhibit 'The Ethics of Dust'

fig.2.1.18 Latex restoration strip removing the now archived grime and dust build-up.

understanding of our own perceptions of obsolescence.

The apparent connection between architecture and pollution is frequently relegated to the realm of art. This abject treatment of obsolescence and its uncontrollable decay is seldom permitted in the inhabitable spaces of the city. When the decay it permitted to endure, it exposes our discomfort with these wastelands and the fear of entrapment which they represent. There exists a great need for this dialogue in the Lachine Canal corridor although the industry has all but disappeared.

fig.2.1.19 (Opposite Page) Edward Burtynsky's 'Nickel Tailings #34'.

THE TOXIC SUBLIME

Ruins are described in traditional landscapes as the constructs of humanity in the process of returning to nature. They embody a sense of the sublime, of the destructive and overpowering forces of nature that affect the very structures that we intend to outlast time. Traditional landscape design would also assert that the built forms of humanity are meant as a completion of, or a way of framing the importance of nature. This cohesion is lost in the typical reading of the technological where such buildings are seen a means of conquering nature. They display a contradiction of death and life, technology and nature, and a new essence of the sublime where cycles of economy and aesthetic degradation relegate them to obsolescence. When left to evolve naturally, the landscape of obsolescence is exhibited as hostile, battling between technology and nature; as technology erodes nature inevitably takes root.

Peter Latz, Landscape Architect of Duisburg-Nord Landschaftspark refers to the rusted machinery of the former steel processing centre as mountains and valleys, where the technological ruin becomes the new landscape.[12] These ruins exhibit a new form of romanticism – a technological one. Much like the stark and massively scaled natural landscapes of the romantic era, they fall prey to the same perspective of conquering or overpowering humanity. In the case of technology, natural forces act upon the constructs of humanity, showing the inevitable death and decay of our creations. The photography of Edward Burtynksy continually demonstrates the sublimity of our technological ruins and manufactured landscapes in decline. The scale and inaccessibility of his subjects, along with their implied mass production and toxicity, stimulate a response of unease that rivals the

fig.2.1.20 Caspar David Friedrich's 'Sea of Ice' demonstrates the destructive forces of nature featured in landscapes of romanticism.

fig.2.1.21 Photograph by Edward Burtynsky titled 'Oil Fields #30' showing the endless landscape of technology.

natural landscape paintings of the romantic era.

The manifestation of fear in the technological ruin not only pertains to the scale of the structure, but also originates from the trepidation of toxicity that threatens us and yet has the potential to excite our interest.[13] The segregation between nature and technology in the cultural perception of landscape propagates the stigma of the industrial derelict as devoid of the redeeming qualities of the typical leisure landscape. It is this perception of the fear and distrust of industry and its contaminants that has replaced the romantic notion of the seemingly natural landscape.[14] The toxic, rusting, and decaying ruins of technology have thus become the sublime.

"Why does rust frighten us so while the ruin is adorned with a reassuring character? … The ruin, as we have said, restores man to nature. Rust, on the other hand, confines him in the middle of his productions as if within a prison, a prison all the more terrible since he is its builder. ... The simple perspective of a destiny of this kind reveals what is inhuman in the work of man. The biggest fear suggested by the contemporary technological landscape is that of the death of humanity in the midst of the signs of its triumph over nature."

(Antoine Picon, 79)

The preservation of a ruin denotes it as an integral point of history, perhaps the traumatic event of its decline. Its desired continuity is for the purpose of collective memory. However, when the fragment is marginalized, such as a devalued industrial space, it becomes merely the residue of a former network of economy. It is in these landscapes, humanity is faced with its own inhumanity. Our industrial landscapes are constructed to house machines, leaving us to feel ill at ease within them.[15] Occupying these landscapes allows the confrontation between the humane and inhumane, offering a new perspective on what we deem obsolete. It poses the question of who or what is meant to inhabit these spaces?

SPECTACLE

To generate historical interest through tourism these abandoned forms and the stigmas they represent are showcased and sold as spectacle. As a culture we objectify them, demeaning the reality of their toxicity, dereliction, and rich past. The spectacle regards the forms as a stationary backdrops, exhibited by the frequent occurrence of light shows on industrial ruins – common practice not only in Quebec on massively scaled abandoned silos, but also Duisburg-Nord Landschaftspark. This form of spectacle mutates the abandoned into art, which has the effect of drawing public attention and activity, but is devoid of any connection beyond a superficial reading of the ruin.

In Quebec, 'Les Moulin' by Robert Lepage was a popular projection of the history of Quebec on an abandoned silo complex along the waterfront. At the very least, it nurtured an understanding of the place in time these relics belong to that resonated their scale and importance to the city.[16] Other projections, such as those of Axel Morgenthal displayed on the Canada Malting Plant attempt to express the lost industry by projecting a grafted fantasy. In this example, the Malting Plant – a former production space of malt and beer - was turned into a fantastical forge with flashes of multicoloured lights that coated its towers and silos in an entirely fantastical past.[17] It is this type of spectacle, devoid of an understanding of the monument's rich history that showcases the stagnation of the post-industrial.

fig.2.1.22 The Canada Malting Plant on the Lachine Canal showcasing the eerie colours of the light show by Axel Morgenthal.

fig.2.1.23 The Cranes of Duisburg-Nord are frequently displayed with glowing light shows at night that captivate and attract the public to the showcased industry.

DUISBURG-NORD LANDSCHAFTSPARK

DUISBURG, GERMANY

The foremost example of industrial adaptation openly encouraging public experience with ruins and remnants is Duisburg-Nord Landschaftspark designed by Peter Latz. In the landscape of the park the ruins of the former coal and steel processing plant become a tactile and integral leisure park. The park contains a myriad of activities from climbing bunker walls to diving in water filled tanks, as well as light shows and an agricultural education centre.[i] The site affords a playful exploration amidst remediation gardens that silently process and cleanse contaminated soil. The landscape design treats the ruins as the sublime landscapes of romanticism in place of modern toxicity.[ii]

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i. Duisburg-Nord Landschaftspark: http://en.landschaftspark.de/startseite

ii. Latz, P., Landscape Architecture as an Intercultural Principle, Topos no. 50 (2005) pg. 50

fig.2.1.24 Aerial image of the Duisburg-Nord Industrial sector highlighting the leisure park.

fig.2.1.25 Path through the bunkers, now used as climbing walls.

fig.2.1.26 View of the walled remedial gardens.

IBA: EMSCHER PARK

EMSCHER VALLEY, GERMANY

Duisburg-Nord Landschaftspark exists in the greater network of Emscher Valley where a massive industrial sector is in the process of being converted to leisure tourism and remedial landscapes. In Emscher Valley the renewed interest of the historical era of production and its abandonment is spurred by interests in not only remediation, but also the legacy of Germany's production on a national scale. A network of trails frequented by avid cyclists links the monuments of abandoned steel and coal processing plants in an industrial remediation site spanning 300 $km^{2,}$ and including over 120 sites to be experienced.[i] Amidst these sites is the Lusatian Lake Landmark, a corten steel tower that points to the former icons of the natural landscape.[ii]

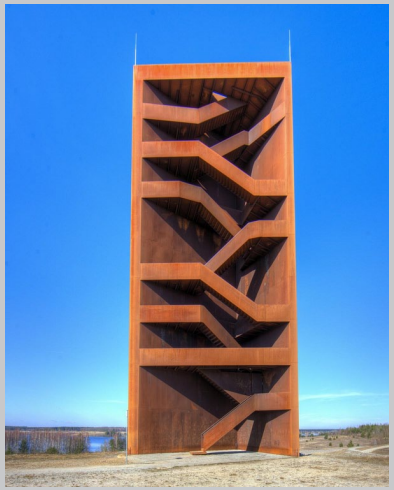
i. IBA: Emscher Park: http://www.iba.nrw.de/main.htm

ii. ibid

fig.2.1.27 The Main Courtyard of Duisburg-Nord Landschaftspark.

fig.2.1.28 Remedial plantings in the Duisburg-Nord Landschaftspark Landscape.

fig.2.1.29 The Lusatian Lake Landmark tower as part of the IBA's extensive redevelopment and restoration of the Emscher Valley Landscape.



"The open-air museum is ... almost a contradiction in itself, since vernacular architecture is existentially linked to its surroundings ... Hence, there is the almost inherent tendency of the open air museum to evolve into a Disneyland: No longer is it a preservation of history in the present, but rather a projection of fantasy into objects of the past ..."

(P. Philippot, 272)

The obsolete becomes a canvas for art as these spectacles celebrate not only outmoded technology but also its stagnation. It is therefore essential that these artifacts be integrated with their surrounding urban landscape, not as mere objects, but as living terminals of the past. The technological ruin will remain a devalued space unless imbued with some form of process or activity that reveals its value. In the case of Duisburg Nord leisure park, there is also an underlying and invisible layer of restorative process in the remediation of the landscape. It isn't openly celebrated as such in a leisure park but nonetheless this landscape of healing provides another layer of depth to the adaptation of the industrial. The interest of Duisburg-Nord lies in the experience of the place, its history, and the apparent cohesion of nature and technology. Beyond solely a spectacle, it demonstrates the inherent flaw behind the preconceptions of society that label such ruins as waste and slate them for redevelopment without envisioning the possibilities of its endurance. Though there are no signs and displays of historic facts as in the Lachine Canal, landmarks and plantings hint at its past and present contamination; it is a landscape of ruins to be experienced.

Imbuing the landscape with the function of leisure and free public movement is vital to erase the stigma of the industrial in decay. Public interaction and direct contact allow the experience of the ruin, and can encourage the contemplation and acceptance of the meaning of the technological in landscape as the truth behind our consumerist past and present. Permitting contact with the these derelict houses of industry is essential to acknowledging the power of technological process and the wounds of the Lachine Canal's past. It is essential to uncovering its future potential to the surrounding urban fabric.

2.2 POST-INDUSTRIAL CULTURE

RE-THINKING TECHNOLOGICAL LANDSCAPES

The design of most largely scaled traditional landscapes create the image of the natural scene untouched by human hands. There is a false notion here that the toxicity and contamination of any technological landscape can easily be solved by the forces of nature wiping the slate clean.[1] This ideology of covering over what we are unwilling to confront perpetuates the notion that derelict ruins of technology stand as hurtles to be overcome by development.[2] These ideologies further permit the devaluing of the space and the experience awaiting within. The previously mentioned vastly scaled parks such as the Emscher Valley network openly challenge these perceptions, encouraging exploration. Subtle landmarks for the visitor to not only allow a unique experience of the landscape, but also an understanding the place itself – what it has been, and what is it becoming. In this sense, architecture and landscape can expose and reveal, through interaction, the importance of these landmarks on the urban fabric and cityscape. In the experience of such places manifests the sensual nature, history, and toxicity of the artifact and its surrounding landscape.

Adopting the successful ideologies of the Emscher Valley park, the Lachine Canal has the potential for a productive leisure park that returns an identity to the region and speaks to its current time. The vast area it impacted through its past development acknowledges its former influence. Through the analysis of its past, a befitting adaptation must address not only the community's past and present, but the surrounding region's as well.

fig.2.3.1 (Opposite Page) Factories and warehouses facing Saint Gabriel lock.
fig.2.3.2 A photo by Edward Burtynsky showing the expanses of a coal processing complex.

LANDSCAPE OF EXPLORATION

The Lachine Canal has always embodied a sense of exploration dating back to the colonization of the 'New World'. Even in its name, Lachine (from *La Chine*) meaning China, is named mockingly for the story of Cavelier de Lasalle, who sold off his seigneurial property on the banks of former Otter Lake, with hopeless intentions of discovering the passage to China.[3] As a prosperous shipping route it sought to tame the wild and unnavigable waterways to maintain a stable path deep in the interior of then Upper and Lower Canada. Novels written during its industrial height refer to the Lachine corridor as an extended port landscape excited by the presence of travelling sailors, ships, and the scents of goods in production.[4]

"Ruins make us think of the past that could have been and the future that never took place, tantalizing us with utopian dreams of escaping the irreversibility of time."
S. Boym, 'Ruins of The Avant Garde: From Tatlin's Tower to Paper Architecture'
('Ruins of Modernity', 58)

The canal has come a long way from its colourful roots to exhibit a shore of rust and decay along a toxic manufactured riverbed. Parks Canada, in planning a tourist based economy for the region, has created an 'open-air museum' with live exhibits in the form of decaying industry. These artifacts are exhibited behind a form of restrictive museum glass box, segregated by such borders and deemed unsafe by the regulations of the city which seek to order and maintain its sterile environments.[5]

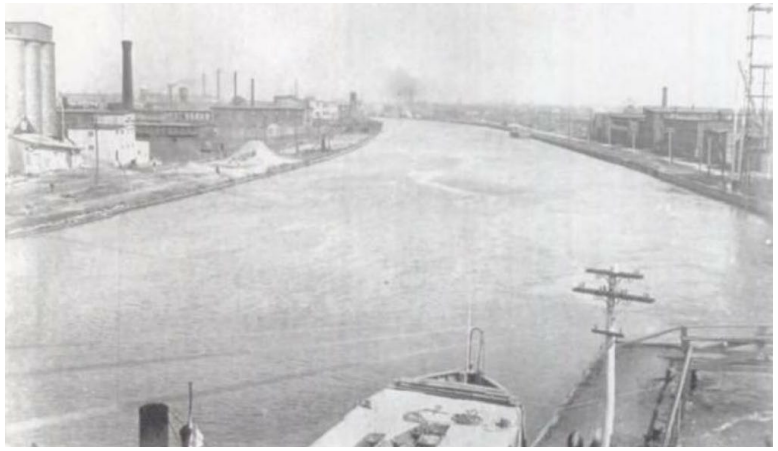
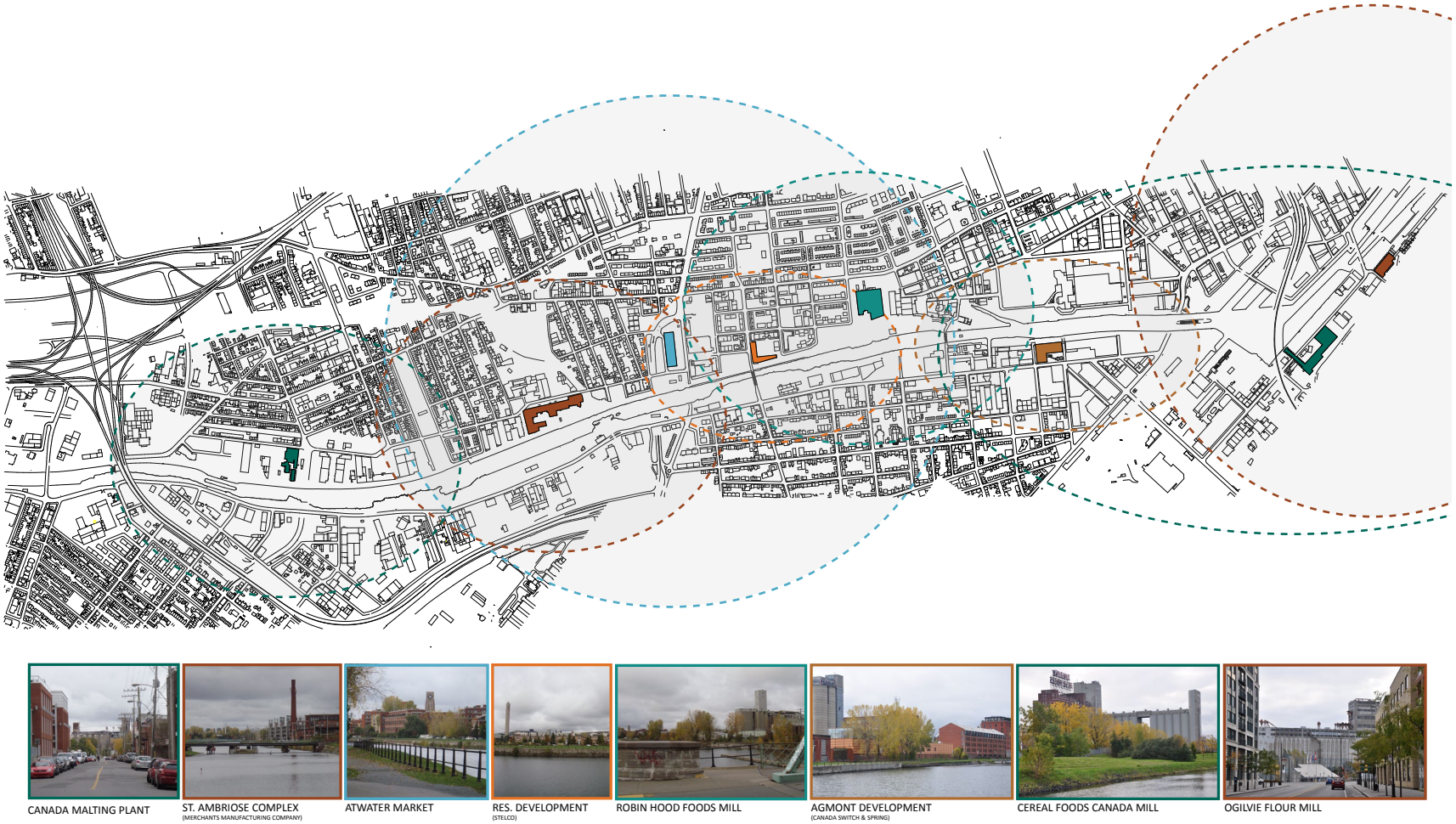


fig.2.3.3 View from Cote Saint Paul lock showing the Canada Malting Plant's sole clay tile silo complex on the far left.

fig.2.3.4 The Canada Malting Plant is entirely fenced off from the Lachine canal path forcing avid explorers to either scale or breach the fence.



MAPPING THE LACHINE CANAL PATH: LANDMARKS AND VISIBILITY

fig.2.3.5 'Mapping the Lachine Canal Path: Landmarks and Visibility' maps the path of the canal heading from downtown Montreal to Lachine. The buildings represent key industrial structures either newly redeveloped or still abandoned. Their corresponding radii mark the point at which the structure, whether towers or chimneys, were visible along the path.

The manicured cityscape is in its stark contrast vilifies the abandoned technological landscape.

"… a public space in which difference and disruption was sensually confronted has become restricted, and sensory deprivation suffuses the contemporary Western city as regulated tactilities, sounds, aromas, and sights become predictable and unstimulating."

(Tim Edensor, Industrial Ruins: Space Aesthetics and Materiality, 57)

As an imaginative playground, the ruin conjures images of the past and the evolution of a space through time, bearing the life and memory of the place and those who inhabited it.[6] Throughout the Lachine Corridor these remnants of past industry lay in isolation, overgrown and in the process of decay. Though they are barred from access, they have become active playgrounds for those willing to scale the barriers, drawn by the experience of the place. In this node where ruin, uncontrollable nature, tactile memory, and toxicity meet exists a space of sublimity where a myriad of experiences await. The obsolete, when viewed in this sense, now becomes integral to the community as part of a larger system of renewal and healing for the site itself as well as the collective perception of the ruin.

fig.2.3.6 Lock 1 on the Lachine Canal in a semi-closed position limits the water flow through the canal to near stagnant. The locks and canal edges are inaccessible in this basin, though further along the canal moving away from the city centre, Côte St. Paul lock and St. Gabriel lock are traversable.

fig.2.3.7 (Opposite Page) The climbing walls of old bunkers in Duisburg-Nord Landschaftspark are a key attraction to the leisure park. These complexes encourage close interaction and play within the ruins through a tactile connection.

A NEW PERSPECTIVE

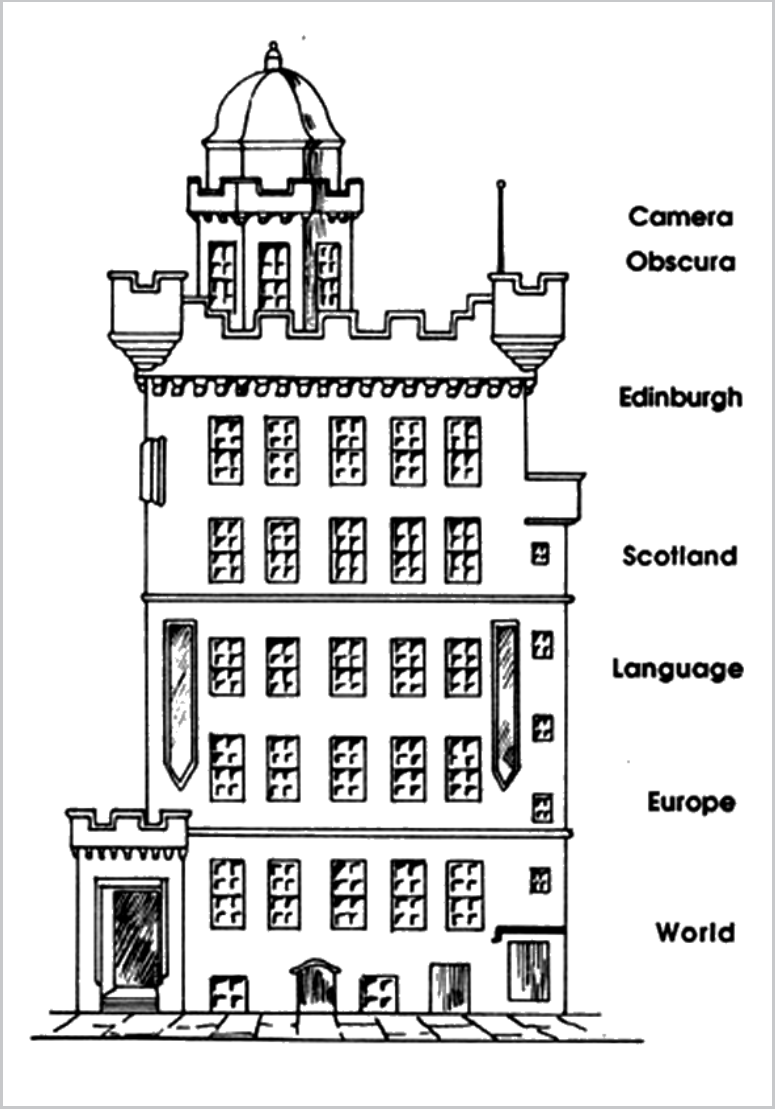
An understanding of the evolving site connects the ruin in a dialogue with its temporal relation to the landscape, communicating history and imagining its future potential. Viewing the corridor in its entirety through a lens of historical evolution can nurture its future development and provide a unifying gaze onto the surrounding territory.

Industrial artifacts offer a unique way of viewing the past through an abandoned era of production, which has greatly influenced the physical and cultural development of its surrounding city. It is this very relationship of nature and the city that Patrick Geddes demonstrated in his Edinburgh Outlook Tower. The tower, an adapted artifact, was created as a series of chambers and levels by which the relationship of the city and its place, geographically and temporally, could be identified. These viewing chambers displayed maps and a camera obscura, which promoted the viewing of the city as a museum of cultural growth and development.[7] Geddes perpetuated a past artifact, not as mere nostalgia, but as a means of understanding the past and re-interpreting it to have a place in the present, and thus an impact on the future.[8]

This concept of a visual understanding of the landscape is also present in the Emscher Valley, where no displays are present to include historical dates and facts about the artefacts and their surrounding landscape.

fig.2.3.9 The view from The Canada Malting Plant Silo Complex overlooking Greater Montreal.

fig.2.3.8 (Opposite Page) A sectional representation of Geddes Outlook Tower with the narrowing perspective as the visitor ascends, ending with the camera obscura room.



OUTLOOK TOWER

EDINBURGH, SCOTLAND

The Outlook Tower in Edinburgh, Scotland was designed by Patrick Geddes as a way of viewing the world and one's place in it through a succession of levels. His conceptions of spreading knowledge were rooted in the design of the former observatory.[1] In each level, ascending from the most general to the increasingly specific, the location of the visitor was slowly elaborated upon until the top camera obscura showed the active surrounds as the precise location of the tower. The concept was made to view and understand the evolution of the surrounding context through time.[2]

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1. Earley, Joyce, Sorting in Patrick Geddes Outlook Tower, Places (1991), 62-71

2. ibid

Newly created landmarks such as the Lusatian Lake Landmark, a viewing tower that through its design points towards former mines from a panoramic view, reveals in its form the evolution of the landscape.[9] It may also be revisited and experienced many times over as the transformed site develops. In this vast landscape, the landmark provides a connecting link or node that observes the land reclamation process from a unique perspective that is constantly evolving.

fig.2.3.10 (Opposite Page) View from the top of Outlook Tower shows surrounding Edinburgh.

fig.2.3.11 The Lusatian Lake Landmark provides a lookout to observe the landscape in a constant state of flux by remediation and landscape alteration efforts. The hiking and cyclist trails provide a constant stream of visitors, some of which will return to see how the IBA's restoration efforts in Emscher Valley have evolved.

Since the early 1990's, a shift formed in the understanding of the urban fabric that focuses at the scale of the evolving territory.[10] More encompassing than the traditional street level, infrastructural projects at a territorial scale have a means to span vast distances and connect many diverse regions. It is in this episteme that architecture has begun to incorporate "the anthropomorphic environment (systems connected with the infrastructure, environment, landscape, reclamation, energy conservation, etc.)" incorporating a myriad of diverse activities into a hybridized landscape[11]. The resulting active landscape provides a rich new fabric for the city, connected physically and visually at the scale of the region.

Since the construction of the revolutionary Eiffel Tower, the desire to view and understand the city from an aerial perspective has gained great impetus as a landmark[12], becoming a common feature in most metropolises. Similarly, the sublimely scaled silos and towers of industry act as a monument of technology and a landmark for the Lachine Canal. Generating an opportunity for an lookout tower on the Lachine Canal has the potential to create a understanding between the visitor and the culture of the place through a novel viewing of the city and its historical development. This comprehensive reading can foster a complete understanding of how the canal has come to be, its current predicament, and opportunities for its future development that serve to re-energize the surrounding fabric.

fig.2.3.12 (Opposite Page) Fresh Kills Park rendering by landscape architects Field Operations. The park is formed by the capping of a former landfill and includes a number of activities ranging from leisure to education.

2.3 NETWORKS OF PRODUCTION

FROM INFRASTRUCTURE TO ARTIFACT

The Lachine Canal itself is relegated to the status of a heritage artifact, like the relics in decay along its shore. The closing of the canal meant the inevitable erasure of the industries that depended upon it, identifying the inevitable connection of infrastructure and ruin in the intrinsically connected cycles they have endured. In order to reinterpret even a single ruin along the canal into a viable productive force for the region, the canal and ruin in whole must be addressed. It is within this mindset that the industrial ruin from the scale of the infrastructure to the site of the artifact must be considered as two parts of the whole in a unifying design that returns energy to the canal corridor.

fig.2.3.1 (Opposite Page) A cyclist on the popular cycling network that includes the Lachine Canal path.

fig.2.3.2 Edward Burtynsky's 'Oxford Tire Pile #8'

INFRASTRUCTURE

The Lachine Canal has endured through over a century of technological changes that have seen successive progressions of infrastructure to service the region. Each alteration progressed towards a changing economy and focus for the canal. In its current contamination, the canal is in dire need of new vision – a new economy to repurpose and mould the landscape, addressing the toxic traces of the past. In response to the ever evolving landscape, the consistent advancement of infrastructure serves as a catalyst for new life and activity. It is through this pattern that a novel infrastructure can be extrapolated, defining a new future for the canal in a dynamic ecological process.

Transit has played a consistent role in the formation of the canal even in its obsolescence. The canal corridor includes a scenic bike and walking path that spans the length of it. The popularity of this conduit far exceeds a simple tourist path as it provides a new network for avid cyclists and alternative daily transportation. It is in part this burgeoning activity and its currently fragmented path that may re-invigorate the obsolescence of the canal through a new network.

This network, broken by diverse public and privately owned lots ranging from Parks Canada to private industry, requires a single unified path throughout its length. In this move to appropriate a single stretch of land along the shore, the path of the canal is thus closely connected with industry in operation, heritage parks, and abandoned ruins. This continuous path encourages access to the canal, exciting interest in its current state, and offering a new link between artifact and industry that binds itself to the existing canal.

fig.2.3.3 Edward Burtynsky's 'Shipbreaking #4'

fig.2.3.4 (Opposite Page) Rail lines, now obsolete intersect the canal ending abruptly at highway overpasses - the new infrastructural wall of the Lachine Canal.

These perpetual evolution of infrastructures moulded the landscape of the canal permanently altering it through the cycles of erosion and dredging. Though some alterations have been erased from all visible evidence, Parks Canada has added new layers of tourism as reminders of the canal's former purpose. These perpetual scars in the palimpsest of the landscape serve as a constant reminder of past motives to repurpose the canal and its artifacts.

fig.2.3.5 (Opposite Page) What appear to be boat launching ramps, likely created by Parks Canada during restoration of the canal wall.

fig.2.3.6 (Opposite Page) Former rail lines are marked in brick and stone along the heritage park sites.

AN INDUSTRIAL RELIC

Midway along the canal path, a derelict icon of industry lies dormant. Surrounded by contamination, derelict artifacts, and new developments, the site of the Canada Malting Plant is disputed in value, relegating it to dismissal and chaos.

'... [T]his abandoned factory in Saint-Henri is either a blight to some or a thing of decayed beauty. I say both. … It's a good reminder of the past, something most people don't want to deal with.'

(Vanishing Montreal)

Stigmatized by rust and decay, and encroached upon by new developments, the artifact awaits demolition or restoration. The former Canada Malting Plant lies at the edge of St. Henri, marking the abrupt bounds of development amidst the antiquated relics of the canal and a community in need of recasting.

On approach from the interrupted canal path on St. Ambroise Street, the Canada Malting Plant silos and tower can be viewed even from many blocks away. Nearing the complex, the canal path is saturated with smells of oil and chemicals as remnants of industry encroach upon it. This segment remains significantly less manicured and redeveloped than any block along the journey thus far. Continuing on the trail, the massive silos abruptly announce themselves from behind obstructing warehouses, all safely secured behind chain link fences and overgrown

fig.2.3.7 View from the canal's edge as the Malting Plant slowly appears from behind trees and shrubs.

fig.2.3.8 (Opposite Page) The ladders and stairs attached to the concrete silo complex are tucked safely behind a chain link fence and lifted high enough to be entirely out of reach.

shrubs. Attached to the closest set of silos are ladders and rusted stairs, hanging far out of reach above, taunting any visitor to try and breach the walls and explore. There is no access to the site from the trail – no clearly defined holes in the barbed-wire fences that have been patched countless times. Circling around the block, the street side offers little better. Taller fences block the entry points and all gates are securely fastened with chains. The brick walls of the oldest factory complex however, are so suffocating close to the sidewalk that some form of contact is inevitable. A myriad of graffiti art plasters the walls finding any accessible blank spot to cover. Contemplating how someone might have scaled the warehouse or climbed the silos incites the visitor to speculate what wonders remain behind the fence.

The Canada Malting Plant, near the Lachine Canal's Côte St. Paul lock, remains a perceived unclean and unsafe environment of dereliction frequented by urban adventurers and graffiti artists. It is outdated by antiquated technology and rendered obsolete by the closing of the canal in 1970's.[1] Its concrete and clay tile silos, both defining features of the complex, were loaded by floating cranes in the canal to begin the process of manufacturing malt. The site, initially featuring solely brick structures and clay tile silos, was expanded upon to meet the increasing demands of production. A new set of concrete structures and silos were added. The most defining feature of the complex is the tower that rises higher than either silo complex rising above a key node in the underground tunnel system. The tower contains a continuously looping belt lift designed to quickly navigate the many levels of the site

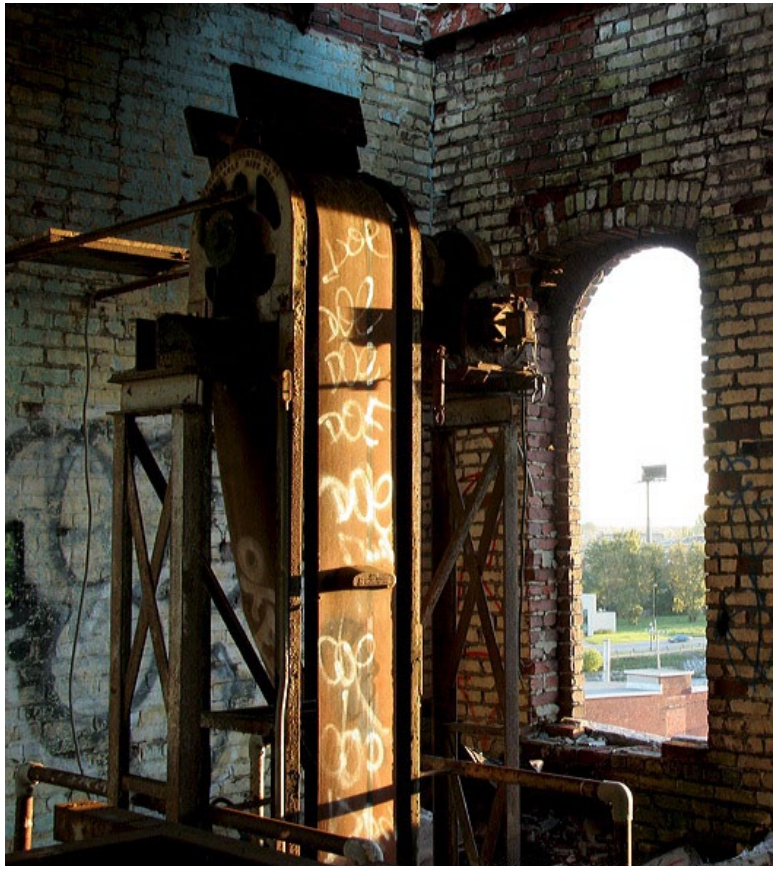


fig.2.3.9 (Opposite Page) Along the Canal's Edge maps the paths and developments in the Cote Saint Paul lock area including new developments and infrastructure that has severely isolated this pocket of landscape.

fig.2.3.10 The Malting Plant tower's 'Man Lift' that allowed workers to quickly scale the tower.


Along The Canal's Edge
New Developments/Adaptive Reuse
Industrial/Manufacturing
Canada Malting Plant
Former Industry
Lachine Pedestrian Path
Rail Lines
0
0.25
0.5km
N

from underground to soaring heights.[2] Panoramic views from the tower span far into the distance serving as a base for viewing the changing landscape.

Though in passing the site appears a little more than a decrepit heap of brick and stained concrete, it has much potential. The sublime, massively scaled structures captivate the intruder to climb and explore leaving graffiti signatures in some seemingly unreachable locations. Though access may be difficult, interest to scale the structure is not barred by any chain link fences or trespassing signs on the site. Like Duisburg-Nord Park, there is a need to open the site promoting imaginative and playful habitation. Through a new layer of architectural intervention and remedial landscape, the site may resonate with new life and purpose.

fig.2.3.11 The complex is entirely fenced off from each side, making entry extremely difficult.

fig.2.3.12 (Opposite Page) One of the many interior spaces coated with graffiti, overlooking the site's tall brick tower.

fig.2.3.13 (Opposite Page) A view from within the clay tile silo looking upwards at the decrepit roof.

fig.2.3.14 An interior view of the malting tanks suspended above floor level.

fig.2.3.15 The roof of the Malting Plant is overgrown with new trees that have taken root since its abandonment.

fig.2.3.16 A view of the interior courtyard showing the clay tile silos, brick structures and the interjecting sheds.

fig.2.3.17 An interior view of the original brick warehouse. The window provides a view towards Montreal.

CHAPTER 3 ECHOES

DESIGN PROPOSAL

REMEDIAL NETWORK

THE CANADA MALTING PLANT

3.1 REMEDIAL NETWORK

Extensive mapping of the historic infrastructural development of the Lachine Canal indicates its importance throughout Montreal's development. It has shaped not only the urban fabric of the city, but large expanses of landscape along the canal's edge. As a series of nationalist minded projects that sought to unite a fledgling country, and later a post-war country, the Lachine Canal and St. Lawrence Seaway projects respectively were responsible for large scale alterations that affected a territory far greater than their own reaches. Though the St. Lawrence Seaway shadowed the Lachine Canal in its grandeur and efficiency, they are intrinsically tied to one another as part of the ever evolving cycles of technology and obsolescence. The obsolescence of the canal, as an artifact of industry, holds the potential through new infrastructure to promote a novel vision for the canal corridor. The advancing infrastructure of waterways, rail lines, roadways, and subways, culminate in the proposed ecological infrastructure of remediation to reshape the canal region. The new infrastructure proposes to expand upon and link existing path networks and proposes a double canal to address the remedial needs of the canal.

fig.3.1.1 (Opposite Page) The canal path along the entrance heading towards the Peel Basin and Flour Docks where new developments are under construction.

fig.3.1.2 A view of the Malting Plant site as seen from the roof of the central brick structures.

REMEDIAL LANDSCAPES

Remedial landscapes become necessity in regions such as the Lachine Canal corridor where even fishing is prohibited for its adverse effects on human health.[1] Former industrial practice has abandoned harmful heavy metals and chemical substances along with its derelict factories. The toxicity of soil and water negatively affect the residents' health and safety as well as the residential development of the region. With the high cost of site remediation and the onus left to the property owner to enact mitigation strategies, the historic neighbourhoods along the canal are relegated solely to large development corporations.[2] Remediation throughout the canal is essential for the health of the community and the historic fabric that defines the region.

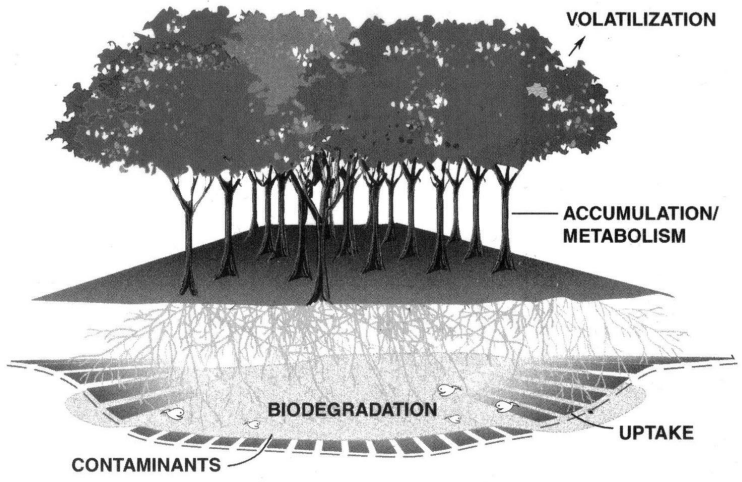


fig.3.1.3 The process of phytoremediation that breaks down, absorbs, or traps contaminants in the plant and its roots.

Bioremediation, the cleansing of the soil through contaminant absorption and digestion, is relatively new practice in landscape.[3] These bioremediation methods promotes the productive planting of a contaminated sites to remove harmful substances over an extensive timeline, while promoting a newly introduced, diverse ecosystem.[4] The Lachine Canal corridor, though extensive in green space, is devoid of significant numbers of mammal life and notable plant life.[5] It is in a former industrial landscape such as this, that phytoremediation may have the greatest restorative benefits and opportunity to encourage productive green spaces suitable to the site. A diverse myriad of industries inhabited the corridor each producing unique chemical by-products ranging from harmful heavy metals such as cadmium, zinc, lead, and mercury, to organic carbons such as oils and greases.[6] Each industrial and manufacturing complex tapped directly into the canal's abundant and rapidly flowing water resource for production and also utilized it for industrial discharge, often treating it as little

more than a sewer drain. Several storm water drains and potential sewage connections are also present, but remain mostly uncharted. They are however thought to be present by the steadily rising e-coli levels in the canal marked by volunteer testing organizations.[7] Levels of heavy metal and organic carbon contaminants are also changing which some industry professionals believe is due to the unmonitored and untested remediation solutions – in this case, sediment capping - that may have an unanticipated low durability in the event of flooding and storms.[8] Though several potential sources seem to exists for the rising contamination levels, few have been specifically identified.[9] It is known however, that the massing of contaminants on the canal bed are potentially the greatest threat, necessitating extensive testing on the re-suspension of sediments from pleasure craft operation for the tourism and leisure activities planned by Parks Canada.[10]

In the Lachine corridor, land ownership is frequently divided between Parks Canada, derelict sites, and industry currently operating, creating a barrier to a continuous landscape of remediation. Through its droning production, dereliction, and ruins the extensive 'anxious landscape' of the Lachine Canal captivates interest, warranting a continuous experiential path. The canal however, named a national historic site by Parks Canada, is mainly under their jurisdiction, permitting an opportunity for remedial efforts to positively affect the canal. In the interest of curing the blight of toxicity, a unified site spanning the length of the canal is required to link the canal and its remedial network to its industrial artifacts.

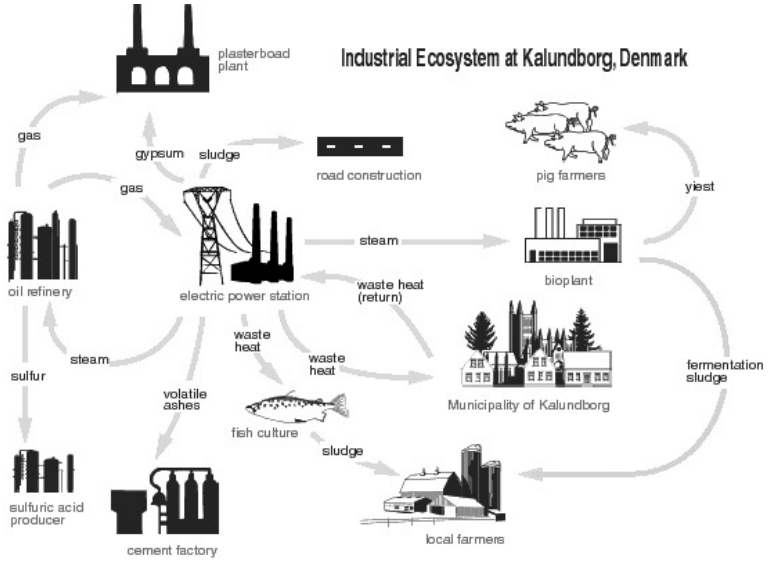


fig.3.1.4 Kalundborg in Denmark demonstrates a hybridized landscape that incorporates the industrial process into the all aspects of the city. In this mindset, a remedial network of the Lachine Canal, can be seen as part of an industrial ecosystem of remediation and education.

THE ECHO

The proposed echo of the Lachine Canal, a doubled remedial canal, seeks to define a new purpose in ecological restoration and education. The echo is a distorted version of the source which questions the purpose of the original, while sustaining and reinforcing its existence. If the canal was the artery for the industrial age of its past, the echo is the life support for the ecological present. It defines a new purpose for the site, drawing new activity and exposure to remedial methods.

The echo or double is a means to create a relationship between two objects. The new form is influenced by and completely dependant on the original to provide a commentary that is stronger than the echo in isolation:

" Another important means of expressing unity is to mark some kind of sympathy among the different objects, and perhaps the pleasantest, because most surprising, kind of sympathy, is when one group imitates or repeats another; not in the way of balance or symmetry, but subordinately, like a far-away and broken echo of it."

(John Ruskin, 167)

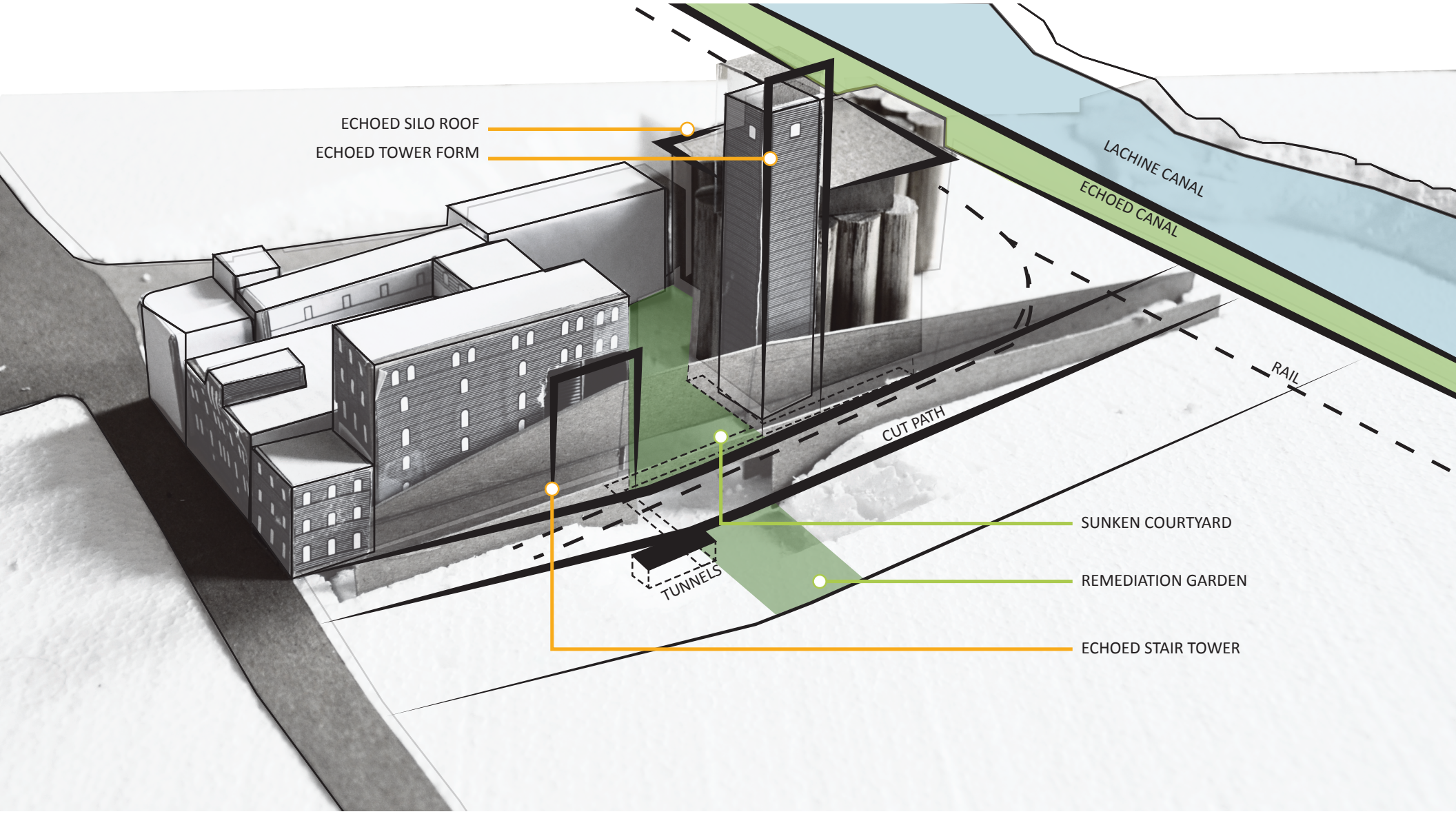
The echo is in constant flux. It speaks to a different time and purpose which itself is transient in the constant evolution of the site. However, it seeks to create a sense of relevance of the artifact in present time. The echo is a new layer set to re-invigorate the Lachine Corridor and its artifacts by creating a sympathy between old and new. In this relationship is a dialogue that promotes a new productive reading of the site through exposure and connection. The echo imagines a new distortion of the site that creates a positive energy and perception of the ruin and infrastructure.

Through adopting the theme of the echo the industrial artifacts and infrastructure of the site can be maintained through a new form. The similarities of the two temporally distinct layers are blatantly displayed by the physical form of the echo, though the differences in materiality are distinct. It is through the materiality, form, and program that the echo reveals the new possibilities of the obsolescent.

This sympathetic relation is a means of endurance that allows the artifact to exists as it never has before. The new layer calls interest to the ecological future of the canal while maintaining a dialogue with its industrial past. Unlike the nostalgic, which glorifies the items of the past and gives permanence to them, the new and temporary layer proposes a current intervention which focuses on continuity while still allowing the artefact to evolve as a medium of remediation. The programmatic repetition is also an echo which, through juxtaposition, serves to critique both; if the original was the source of the pollution, the echo is the focus on healing and community.

The recurring theme of the echo transcends the design from infrastructure to site, through pairing of either visually apparent programs, doubled

fig.3.1.5 (Opposite Page) The design concept includes a series of echoes in form and program that communicate a connection between old and new, citing their relevance in the present.



ECHO DESIGN CONCEPT

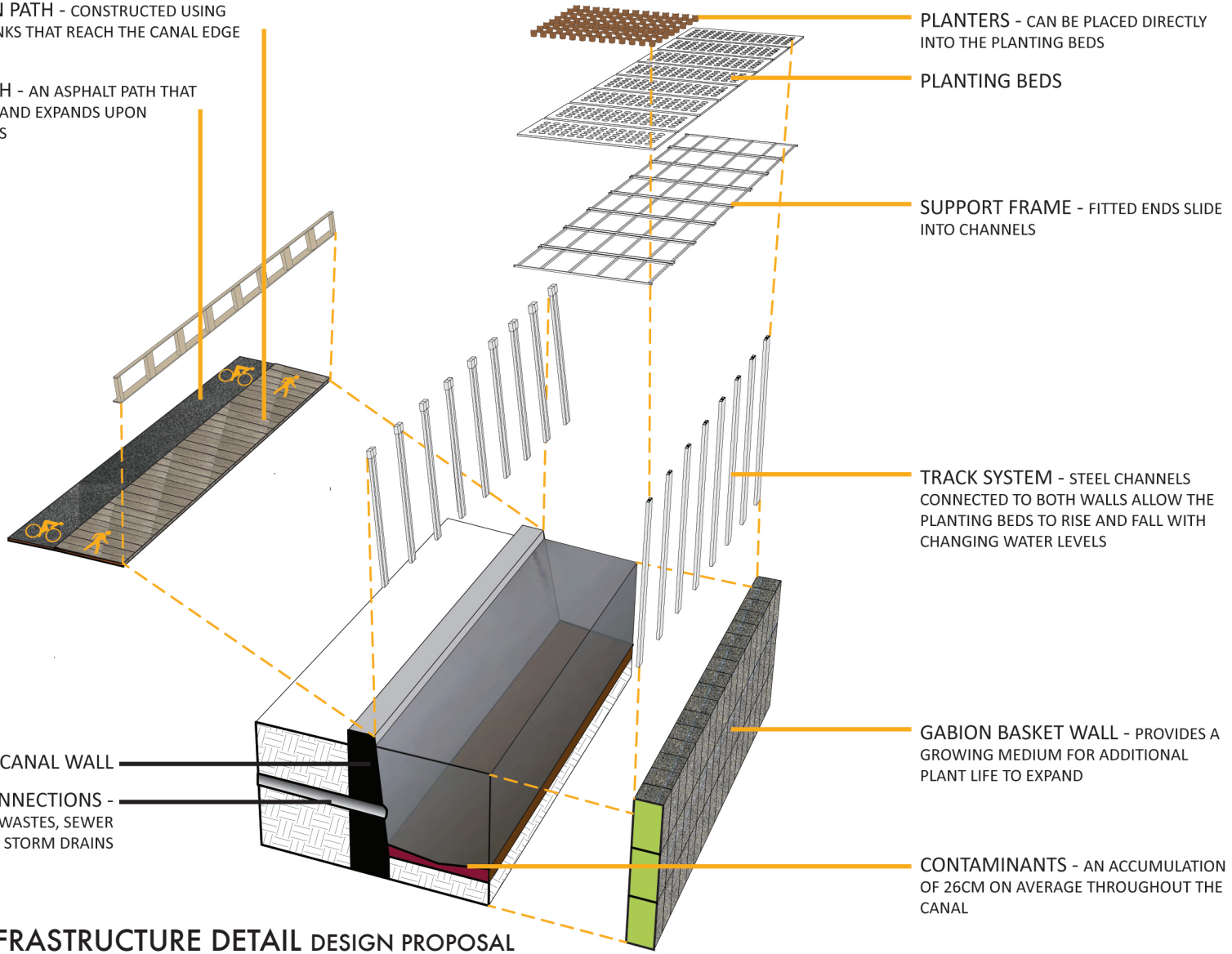
forms, materiality, or is inferred through the palimpsest of layers on the site. The sympathetic echo theme as described by Ruskin manifests a new interpretation of the site, providing a new perspective of the Canada Malting Plant's potential. As an extension of the theme expressed in the echoed or doubled canal, the forms of the tower and brick addition are doubled, adding a new layer of vertical circulation and access to the site. The echo also informs the layout of program on the site in such a way that a dialogue is initiated by the pairing. For example, this theme informs the echoing of the remediation research and education programs. It also informs the layout of exterior program such as the remediation garden which is the response to the central courtyard of the research centre, mirrored by the main path.

Activity and public access are paramount to the adapted artifact. In order to encourage the bustling activity of avid cyclists along the canal corridor, an expansion of the path was needed. This proposal creates a continuous network that physically links itself to the echoed canal, encouraging public exposure to the built form of remediation. A thin, yet territorial span of gabion wall lines the existing canal wall of the north shore, promoting the natural habitation of flora and fauna that serve to reinvigorate and cleanse the artery of the Lachine Canal. Planted with hyacinth, duckweed, eelgrass, and reeds such as sweetgrass, the new artery spans a width ranging from four metres to ten metres depending on site conditions and zones of high toxicity. Sweetgrass and similar reeds as well as hyacinth and duckweed are common wetland plants that excel at cleansing water sources.[11] Like water hyacinth, eelgrass, an underwater plant species, has more recently been found to reduce levels of organic carbons in salt water scenarios.[12] Though eelgrass can also be found in freshwater varieties, including some plots found within the Lachine Canal, it is still unknown as to whether this variety may effectively absorb these harmful materials, abundant in the canal.[13] These plants are merely sample varieties of possible planting species and a high level of diversity is required, warranting further research and testing into new possibilities for bioremediation. It is for this reason that the echoed canal must facilitate a changing palette of plant species. The echoed canal thus addresses the constant bombardment of new toxins and contaminants that enter into the canal from potential identified sources, trapping the contaminants in the roots of the plants. Particularly in the instance of a biological or bacterial contaminant, the plants can participate in the digestion and reintegration of the contaminants back into the natural system. This may be particularly true of the rising e-coli bacteria from sewage and storm water connections.[14]

Contamination levels are likely to rise during construction of the new artery, as with any disturbance to the canal bed. The ability to drain entire sections of the canal, utilizing the functioning lock systems, can easily facilitate the dredging of the edge region and allow for any removed material to be tested and sorted for in-situ treatment along the shore. The Canada Malting Plant, with its abundance of unused silos presents an ideal site for sorting, storage, and treatment of recovered materials and contaminants.

In inciting the logic of the echoed design, this doubling of efforts combines the existing and the response to not only the artefact, but the programmatic layout of the new infrastructure. In accordance, the ruin of the Canada Malting Plant and the echoed canal work in congruence to educate, research, and treat the contaminated canal. The existence of one is vital to the existence of the other, making both the source and the response essential components of the holistic proposal for the future of the Lachine Canal.

fig.3.1.6 (Opposite Page) A detailed axonometric exposes the components of the network to begin the remediation of the canal and its contaminants.



CANAL INFRASTRUCTURE DETAIL DESIGN PROPOSAL
TYPICAL SEGMENT

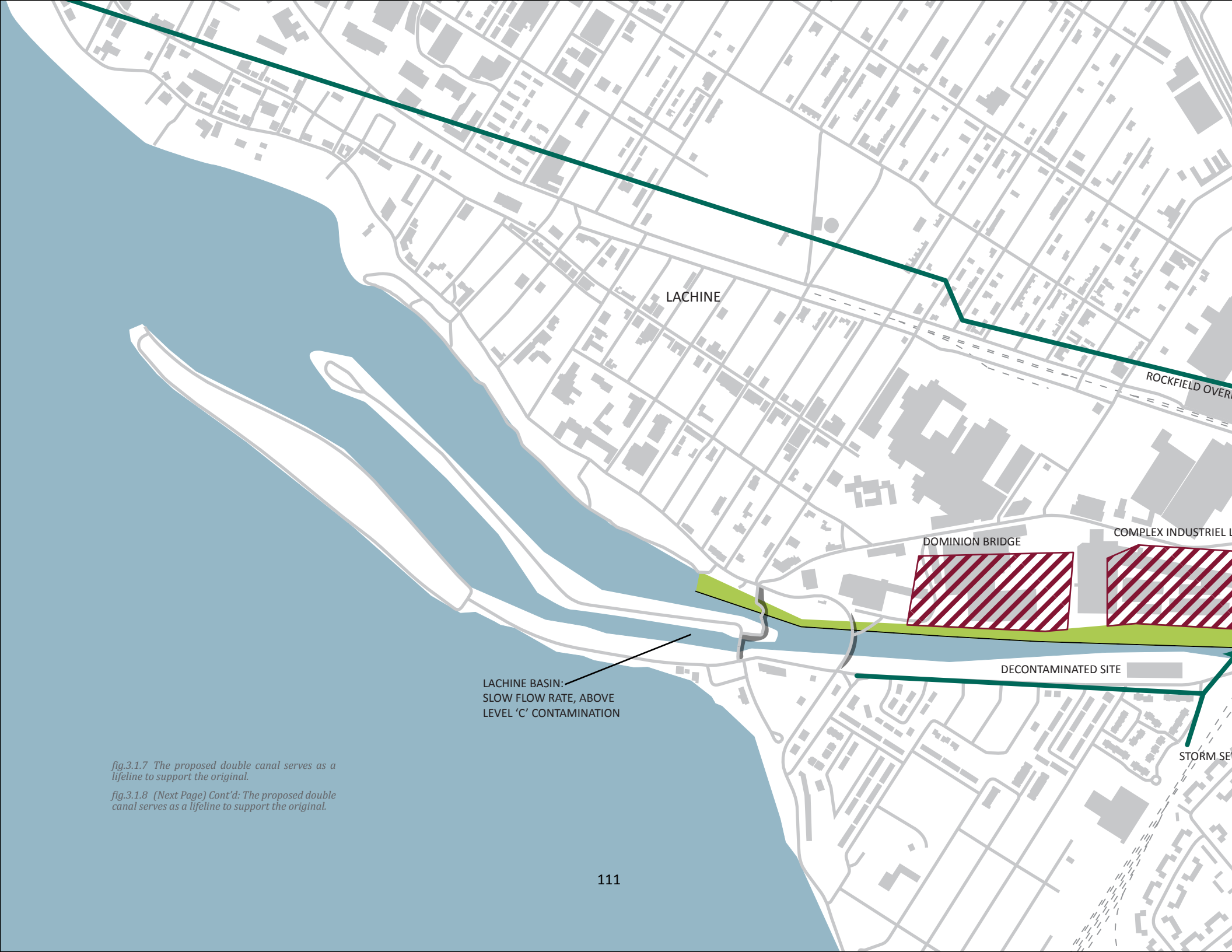
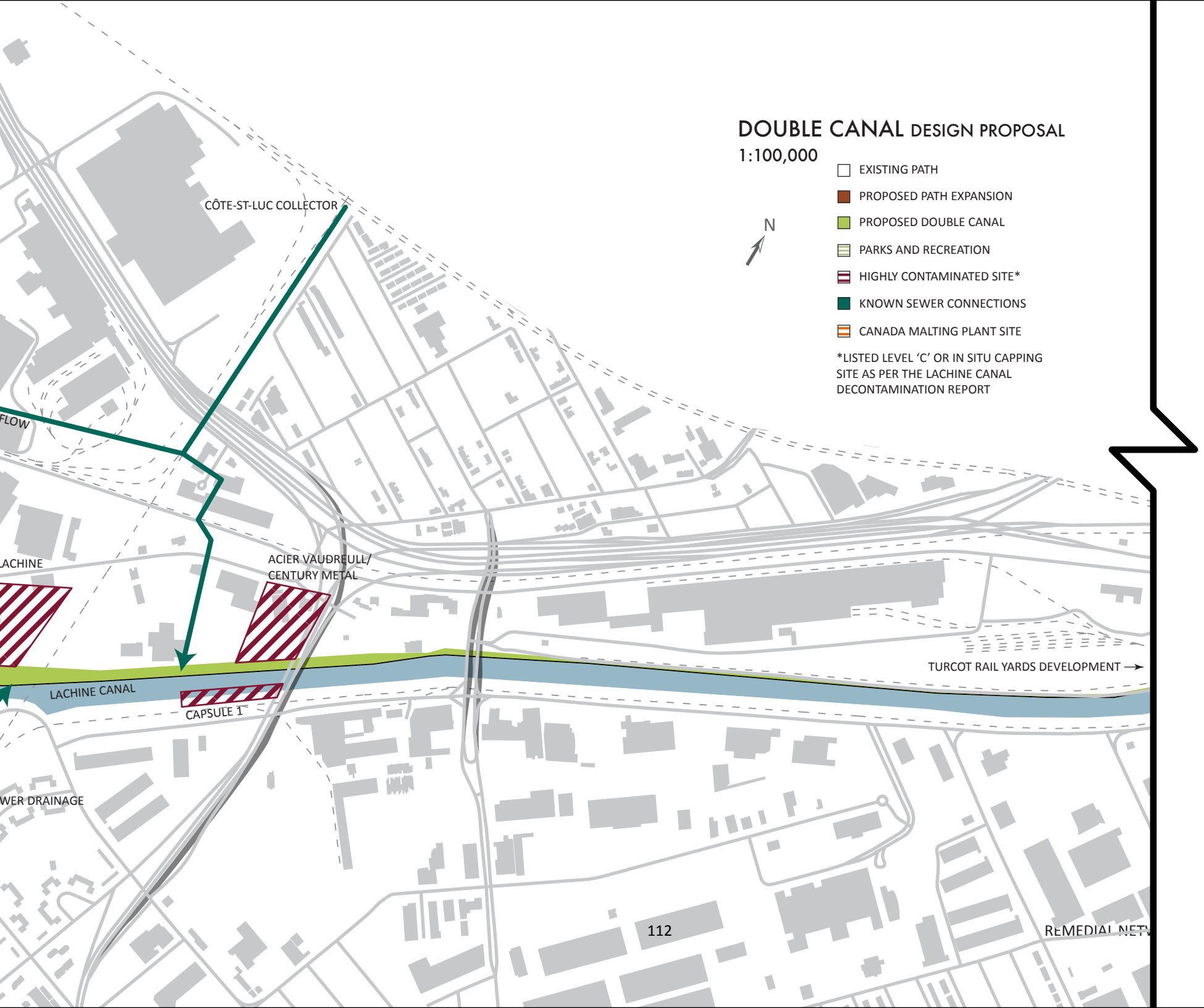


fig.3.1.7 The proposed double canal serves as a lifeline to support the original.

fig.3.1.8 (Next Page) Cont'd: The proposed double canal serves as a lifeline to support the original.


DOUBLE CANAL DESIGN PROPOSAL
1:100,000
EXISTING PATH
PROPOSED PATH EXPANSION
PROPOSED DOUBLE CANAL
PARKS AND RECREATION
HIGHLY CONTAMINATED SITE*
KNOWN SEWER CONNECTIONS
CANADA MALTING PLANT SITE
*LISTED LEVEL 'C' OR IN SITU CAPPING SITE AS PER THE LACHINE CANAL DECONTAMINATION REPORT
N
CÔTE-ST-LUC COLLECTOR
FLOW
LACHINE
ACIER VAUDREUIL/
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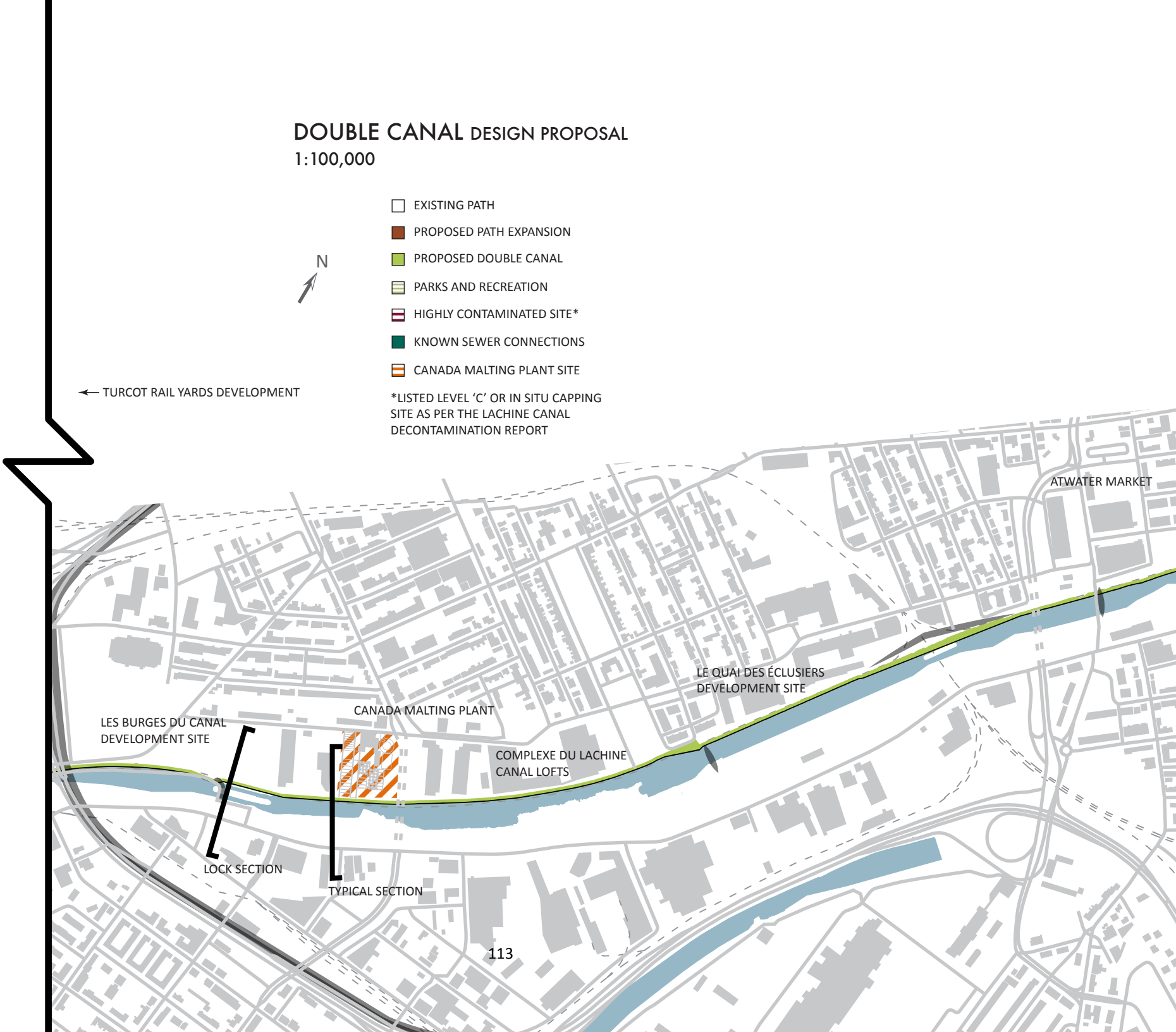
REMEDIAL NETW

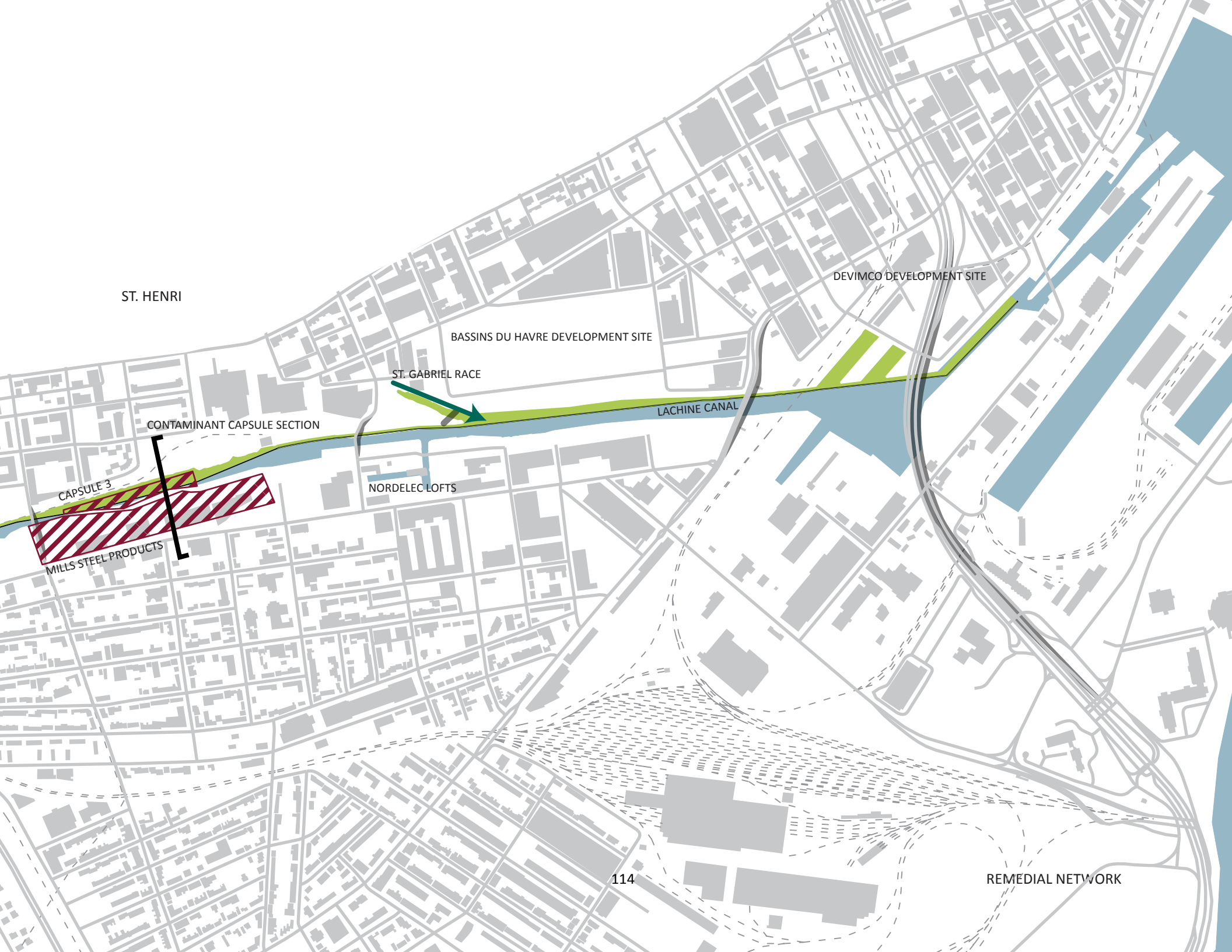
DOUBLE CANAL DESIGN PROPOSAL

1:100,000

- EXISTING PATH
- PROPOSED PATH EXPANSION
- PROPOSED DOUBLE CANAL
- PARKS AND RECREATION
- HIGHLY CONTAMINATED SITE*
- KNOWN SEWER CONNECTIONS
- CANADA MALTING PLANT SITE

*LISTED LEVEL 'C' OR IN SITU CAPPING SITE AS PER THE LACHINE CANAL DECONTAMINATION REPORT




ST. HENRI
BASSINS DU HAVRE DEVELOPMENT SITE
DEVIMCO DEVELOPMENT SITE
ST. GABRIEL RACE
LACHINE CANAL
CONTAMINANT CAPSULE SECTION
CAPSULE 3
NORDELEC LOFTS
MILLS STEEL PRODUCTS

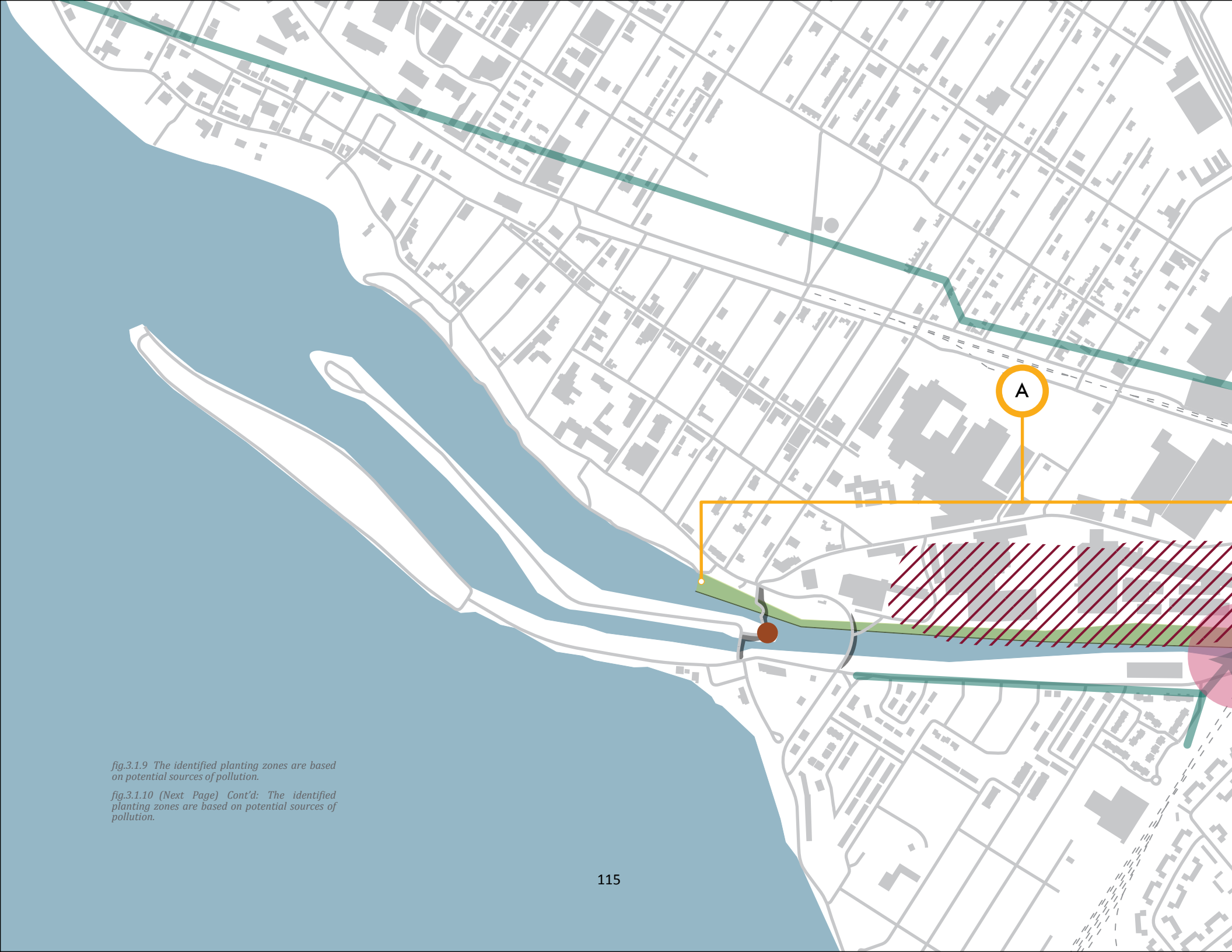
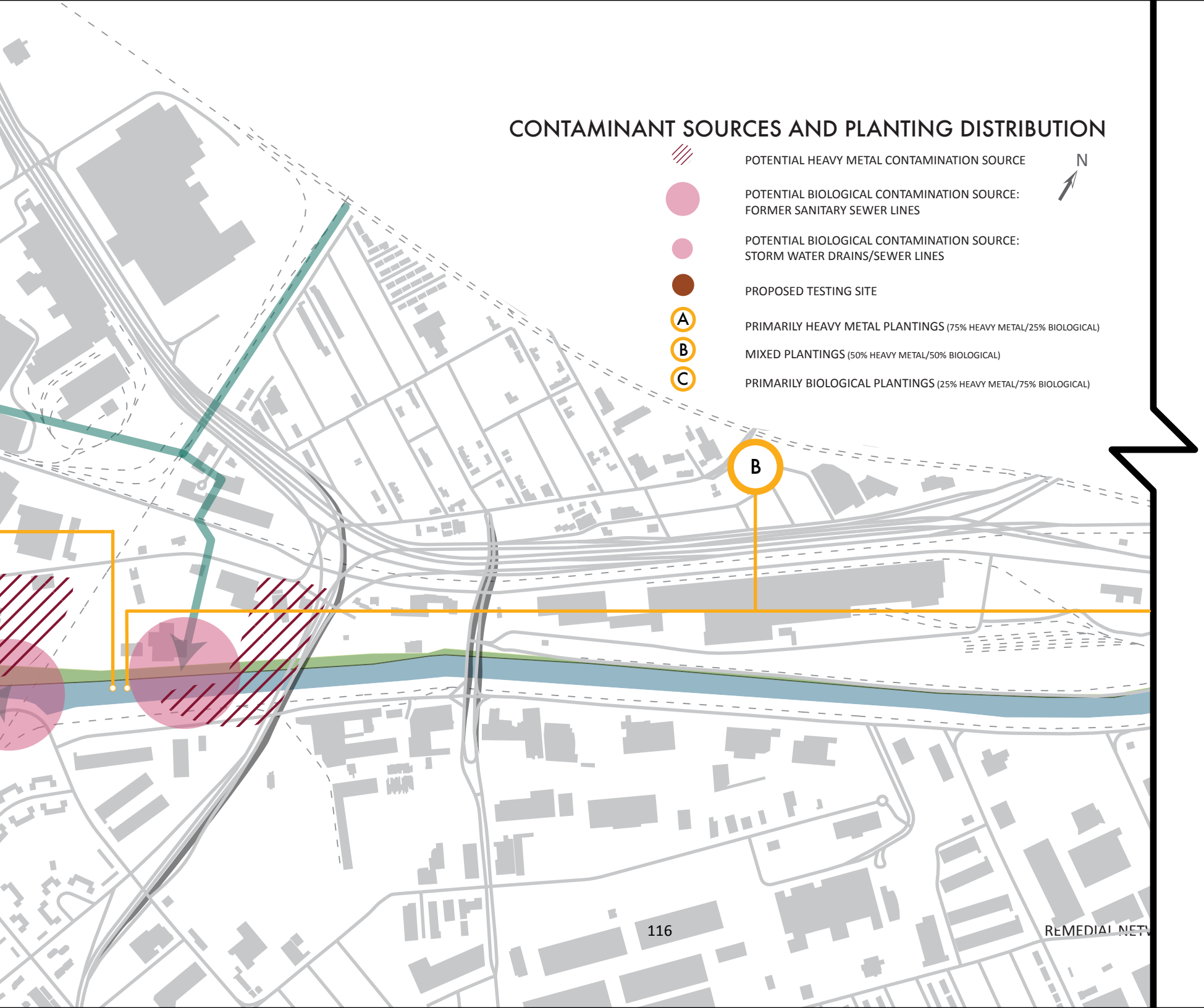


fig.3.1.9 The identified planting zones are based on potential sources of pollution.

fig.3.1.10 (Next Page) Cont'd: The identified planting zones are based on potential sources of pollution.


CONTAMINANT SOURCES AND PLANTING DISTRIBUTION
POTENTIAL HEAVY METAL CONTAMINATION SOURCE
N
POTENTIAL BIOLOGICAL CONTAMINATION SOURCE:
FORMER SANITARY SEWER LINES
POTENTIAL BIOLOGICAL CONTAMINATION SOURCE:
STORM WATER DRAINS/SEWER LINES
PROPOSED TESTING SITE
A
PRIMARILY HEAVY METAL PLANTINGS (75% HEAVY METAL/25% BIOLOGICAL)
B
MIXED PLANTINGS (50% HEAVY METAL/50% BIOLOGICAL)
C
PRIMARILY BIOLOGICAL PLANTINGS (25% HEAVY METAL/75% BIOLOGICAL)
B
116
REMEDIAL NETW

CONTAMINANT SOURCES AND PLANTING DISTRIBUTION

POTENTIAL HEAVY METAL CONTAMINATION SOURCE

POTENTIAL BIOLOGICAL CONTAMINATION SOURCE:
FORMER SANITARY SEWER LINES

POTENTIAL BIOLOGICAL CONTAMINATION SOURCE:
STORM WATER DRAINS/SEWER LINES

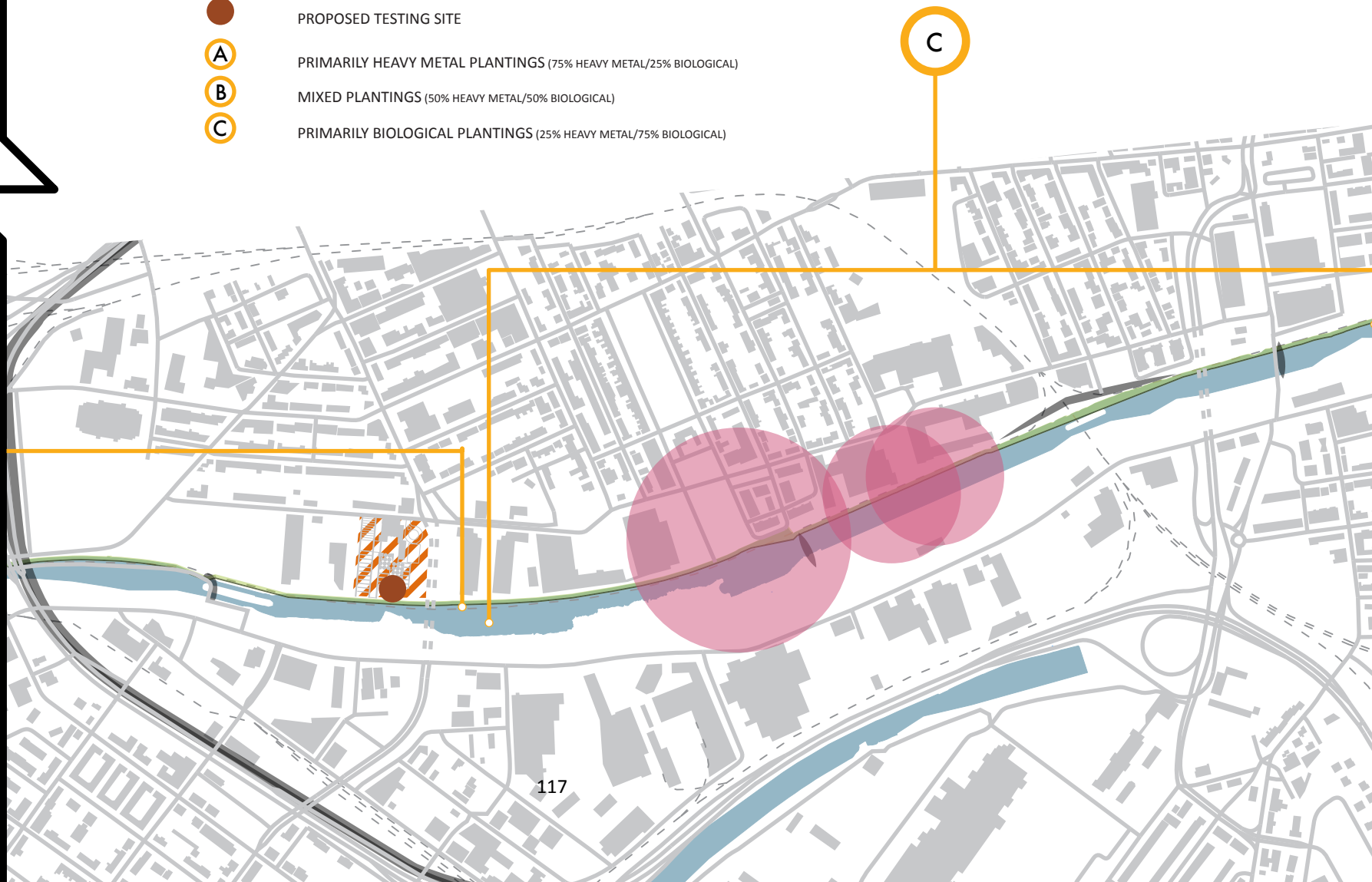
PROPOSED TESTING SITE

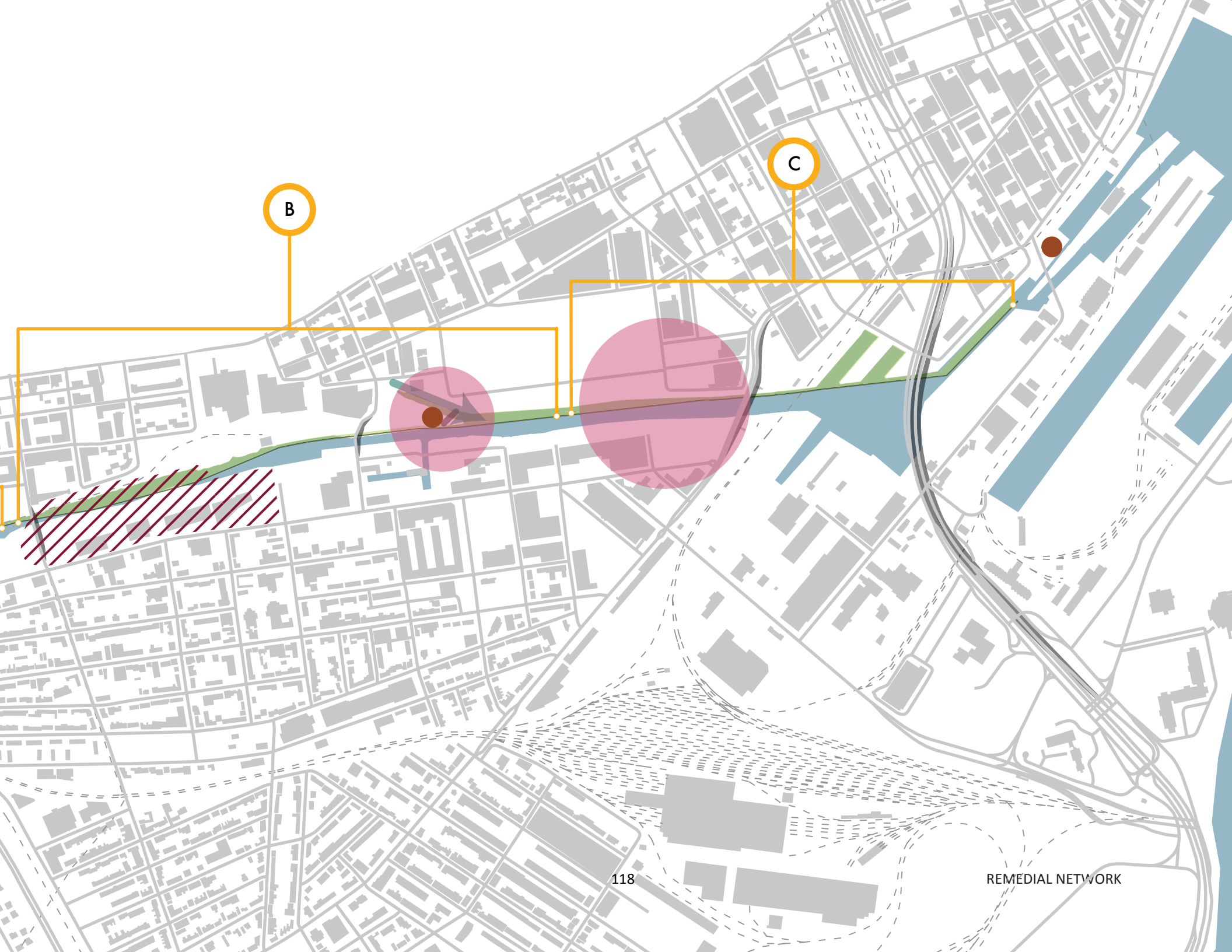
A PRIMARILY HEAVY METAL PLANTINGS (75% HEAVY METAL/25% BIOLOGICAL)

B MIXED PLANTINGS (50% HEAVY METAL/50% BIOLOGICAL)

C PRIMARILY BIOLOGICAL PLANTINGS (25% HEAVY METAL/75% BIOLOGICAL)

N




B
C

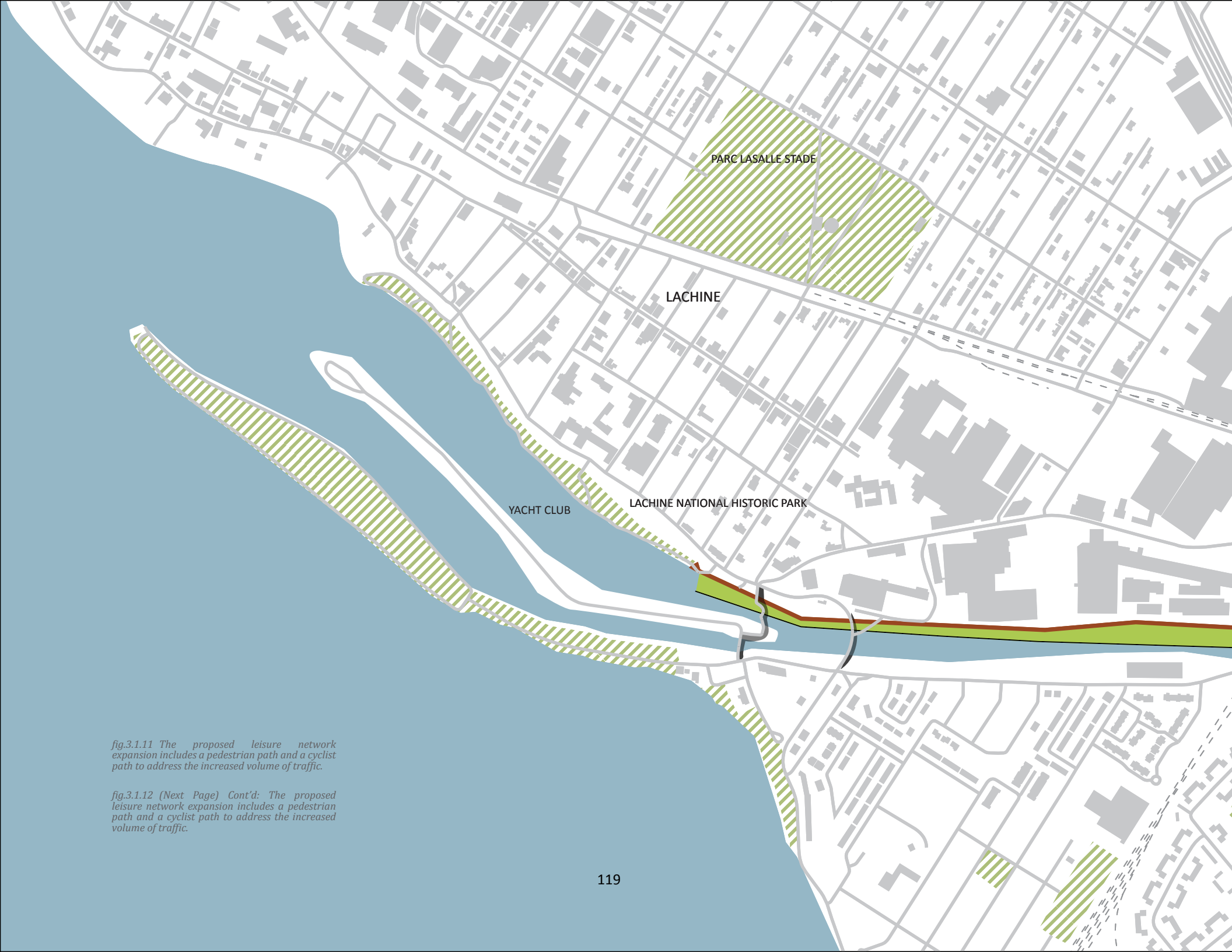
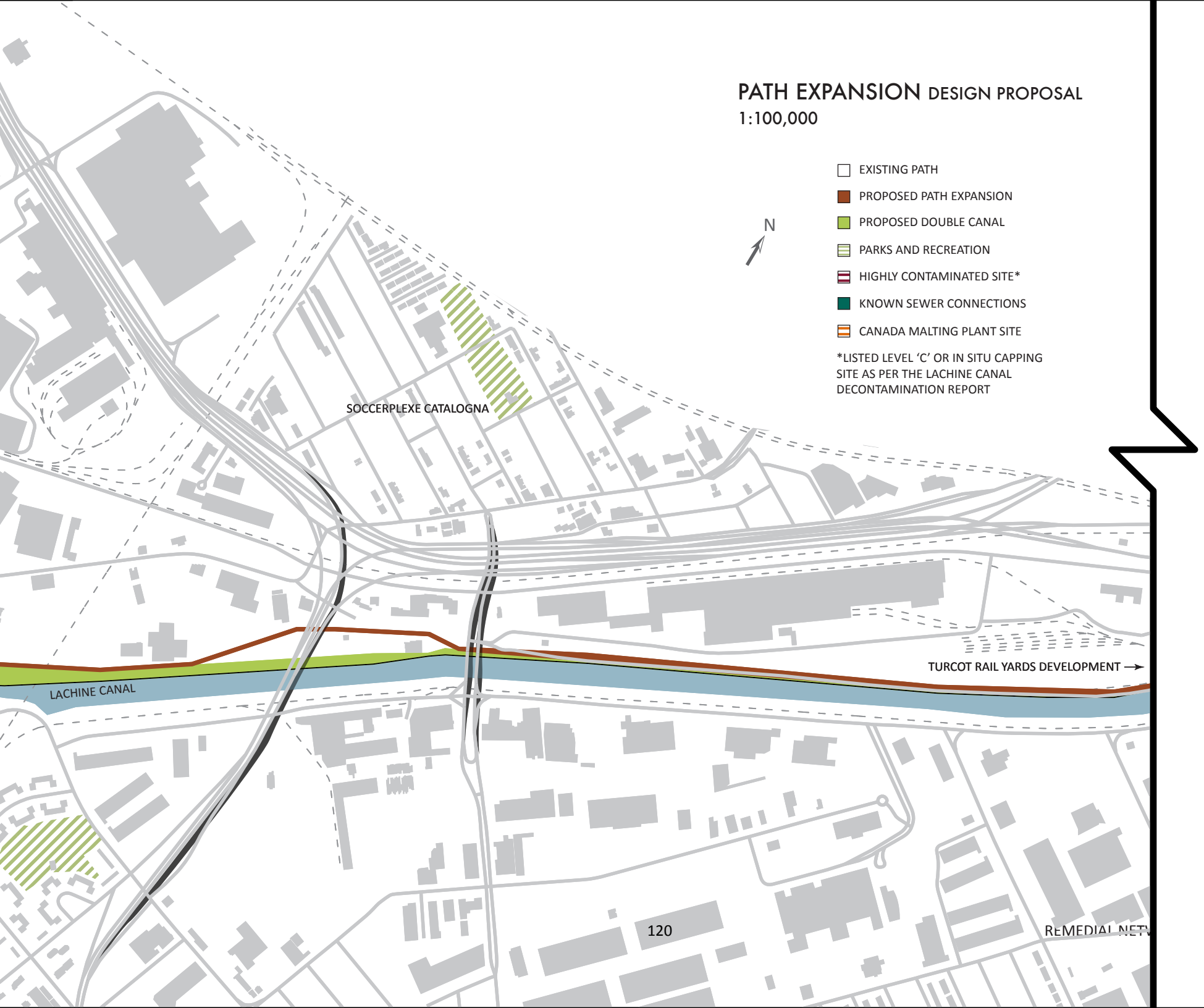


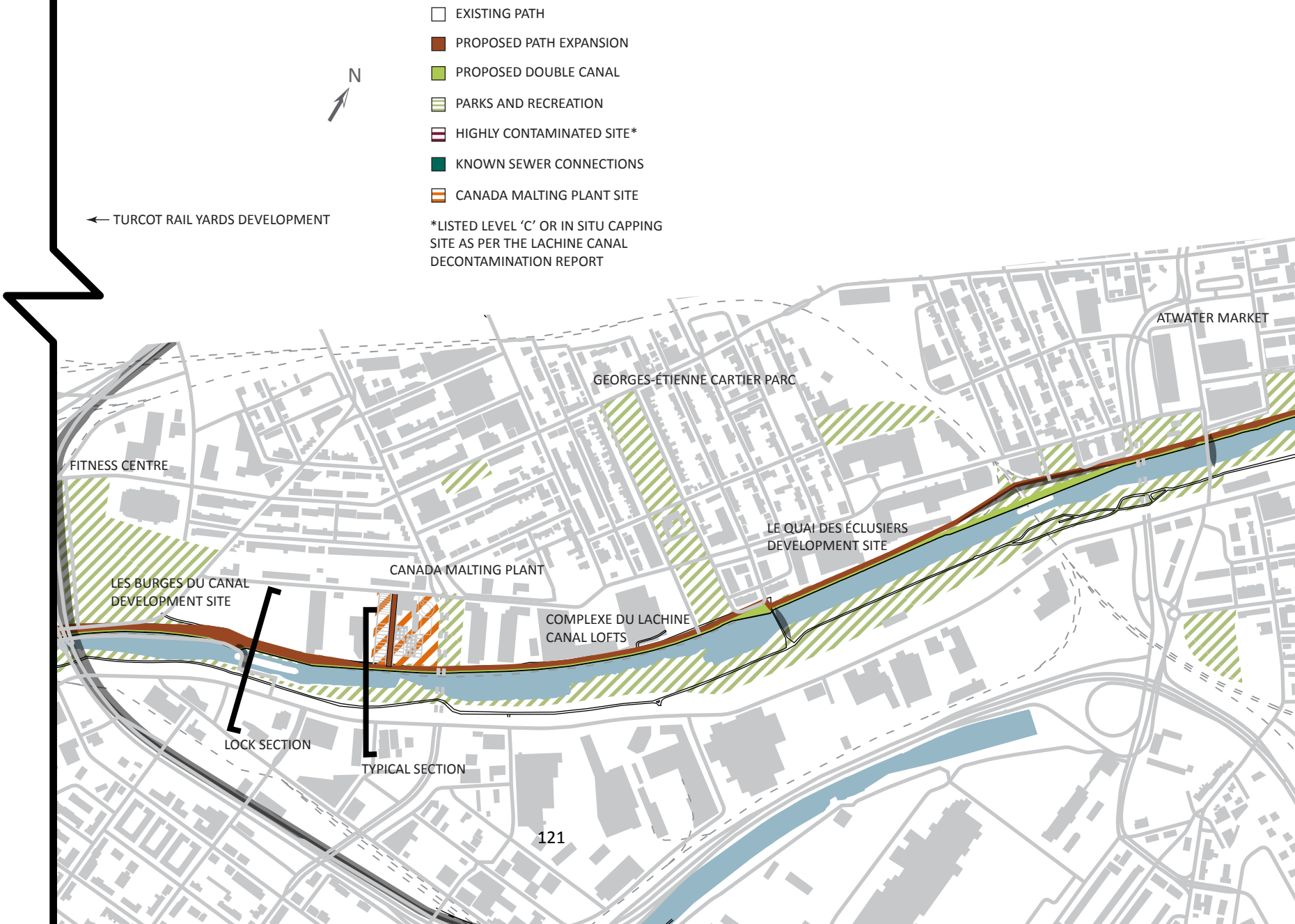
fig.3.1.11 The proposed leisure network expansion includes a pedestrian path and a cyclist path to address the increased volume of traffic.

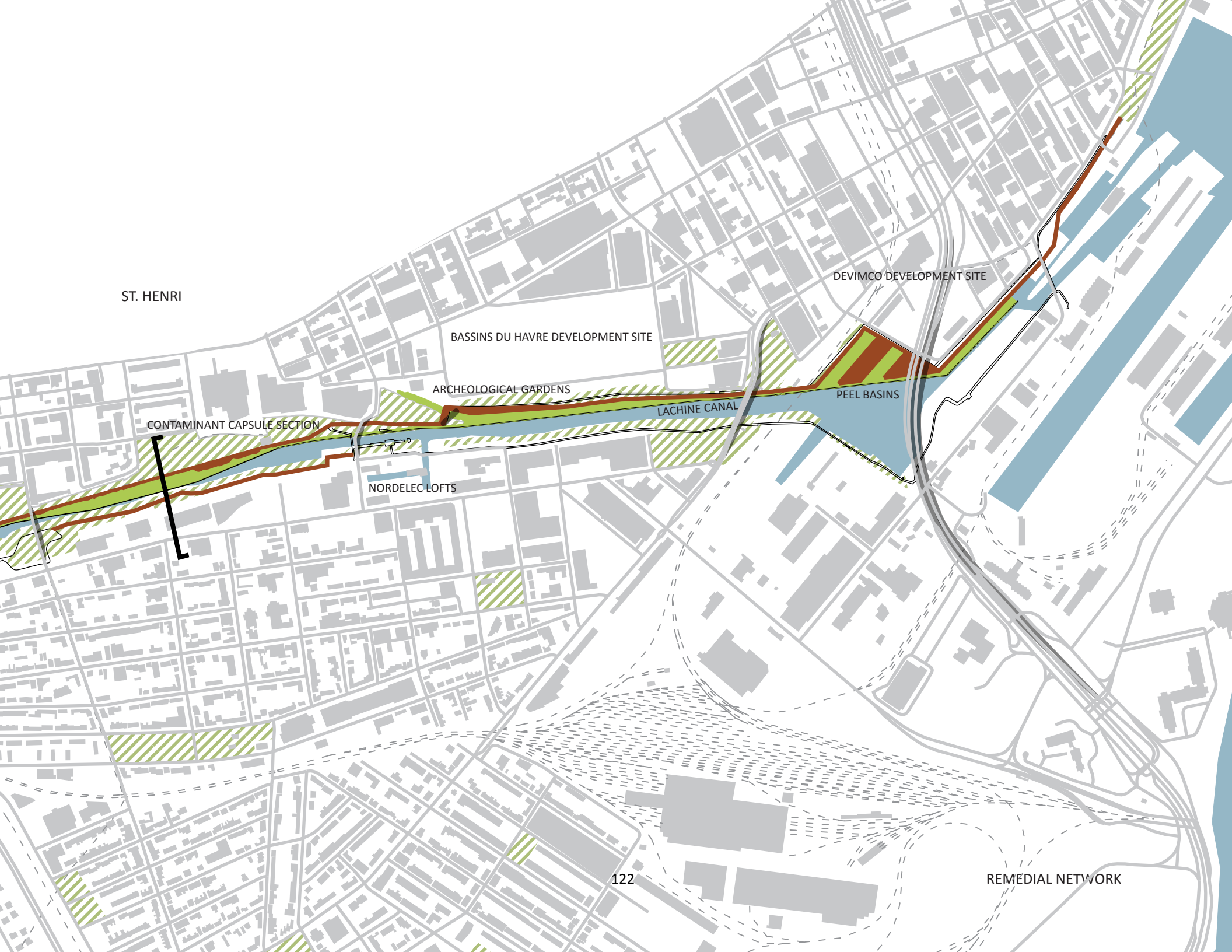
fig.3.1.12 (Next Page) Cont'd: The proposed leisure network expansion includes a pedestrian path and a cyclist path to address the increased volume of traffic.

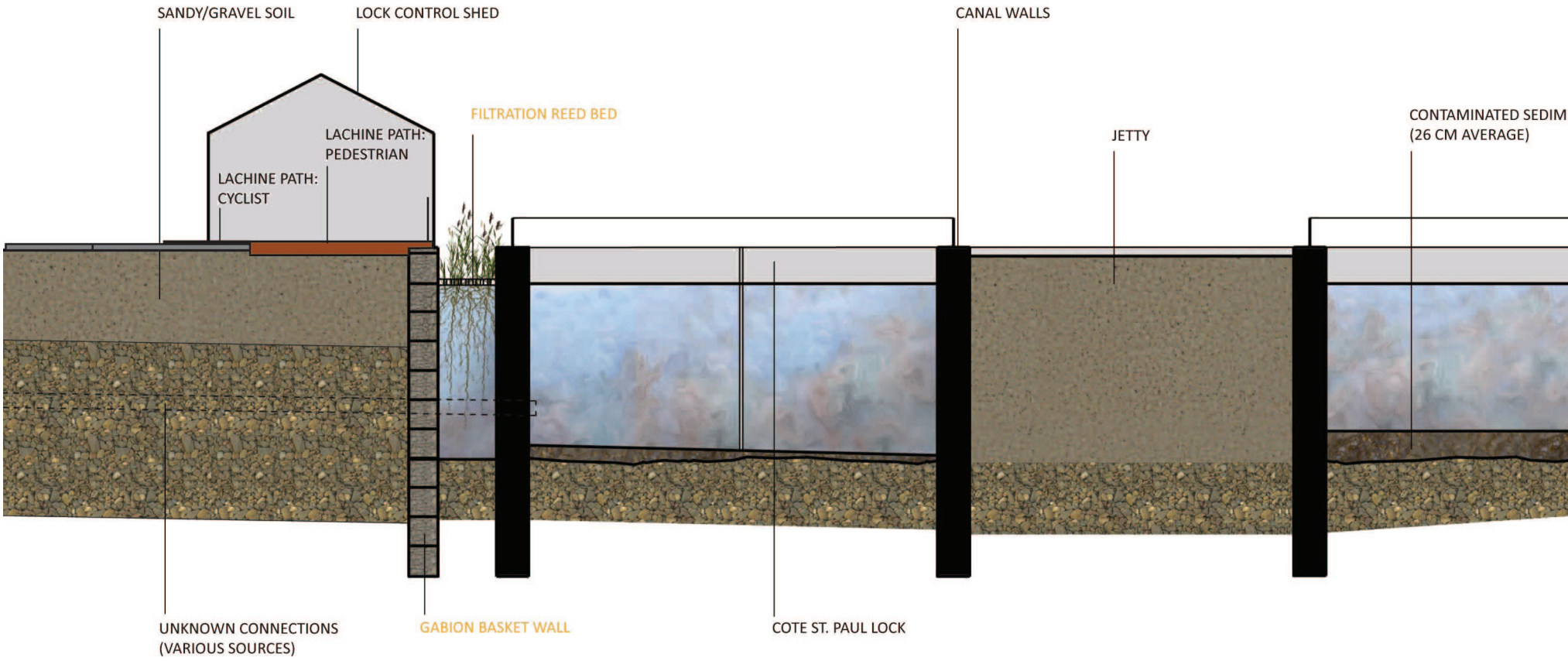

PATH EXPANSION DESIGN PROPOSAL
1:100,000
EXISTING PATH
PROPOSED PATH EXPANSION
PROPOSED DOUBLE CANAL
PARKS AND RECREATION
HIGHLY CONTAMINATED SITE*
KNOWN SEWER CONNECTIONS
CANADA MALTING PLANT SITE
*LISTED LEVEL 'C' OR IN SITU CAPPING SITE AS PER THE LACHINE CANAL DECONTAMINATION REPORT
N
SOCCERPLEXE CATALOGNA
LACHINE CANAL
TURCOT RAIL YARDS DEVELOPMENT
120

PATH EXPANSION DESIGN PROPOSAL

1:100,000




ST. HENRI
BASSINS DU HAVRE DEVELOPMENT SITE
DEVIMCO DEVELOPMENT SITE
ARCHEOLOGICAL GARDENS
LACHINE CANAL
PEEL BASINS
CONTAMINANT CAPSULE SECTION
NORDELEC LOFTS



DOUBLE CANAL: LOCK SECTION

COTE ST. PAUL LOCK

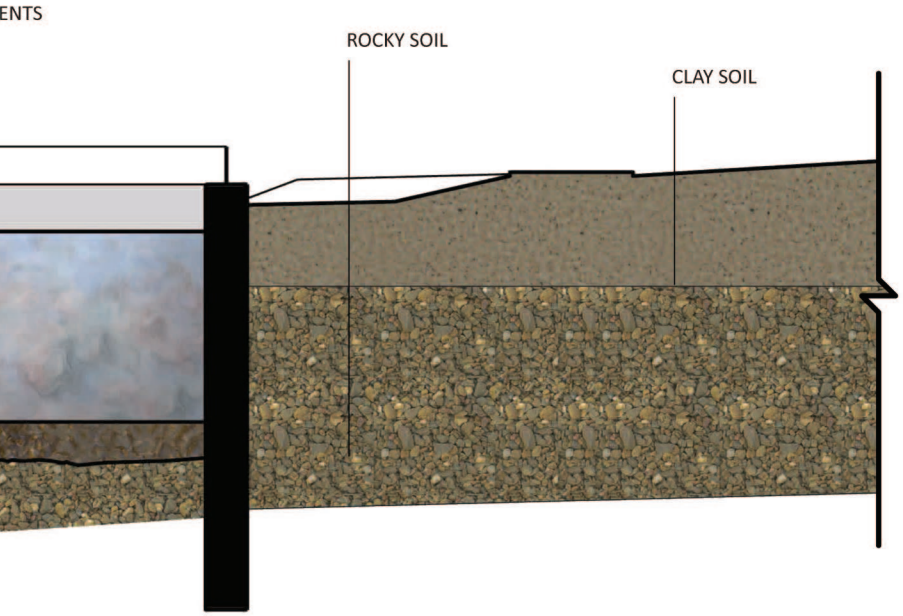
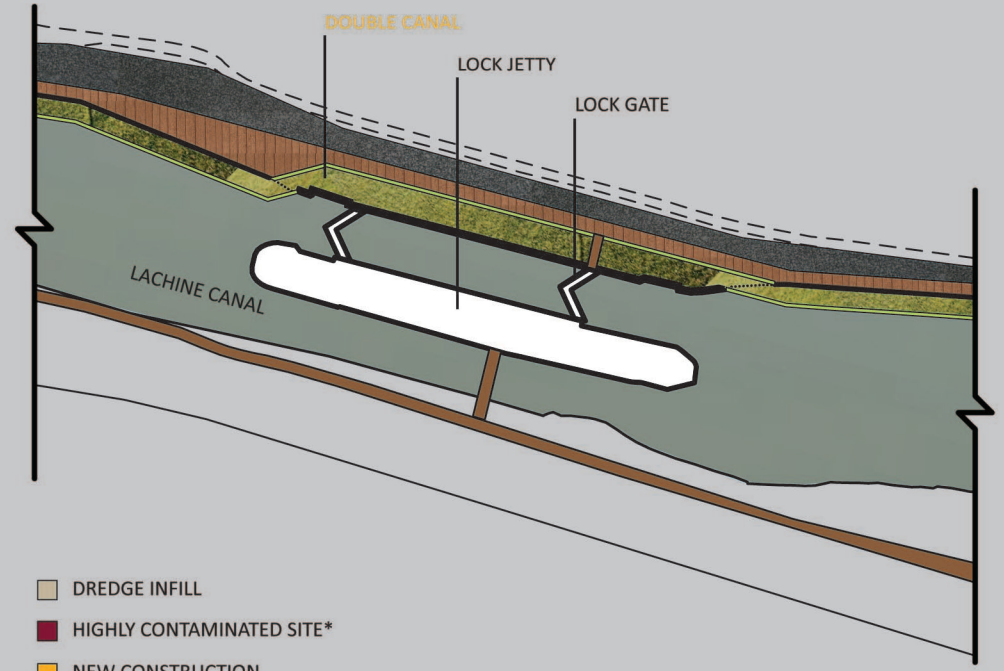


fig.3.1.13 Section identifying the condition of the double canal at the lock condition.

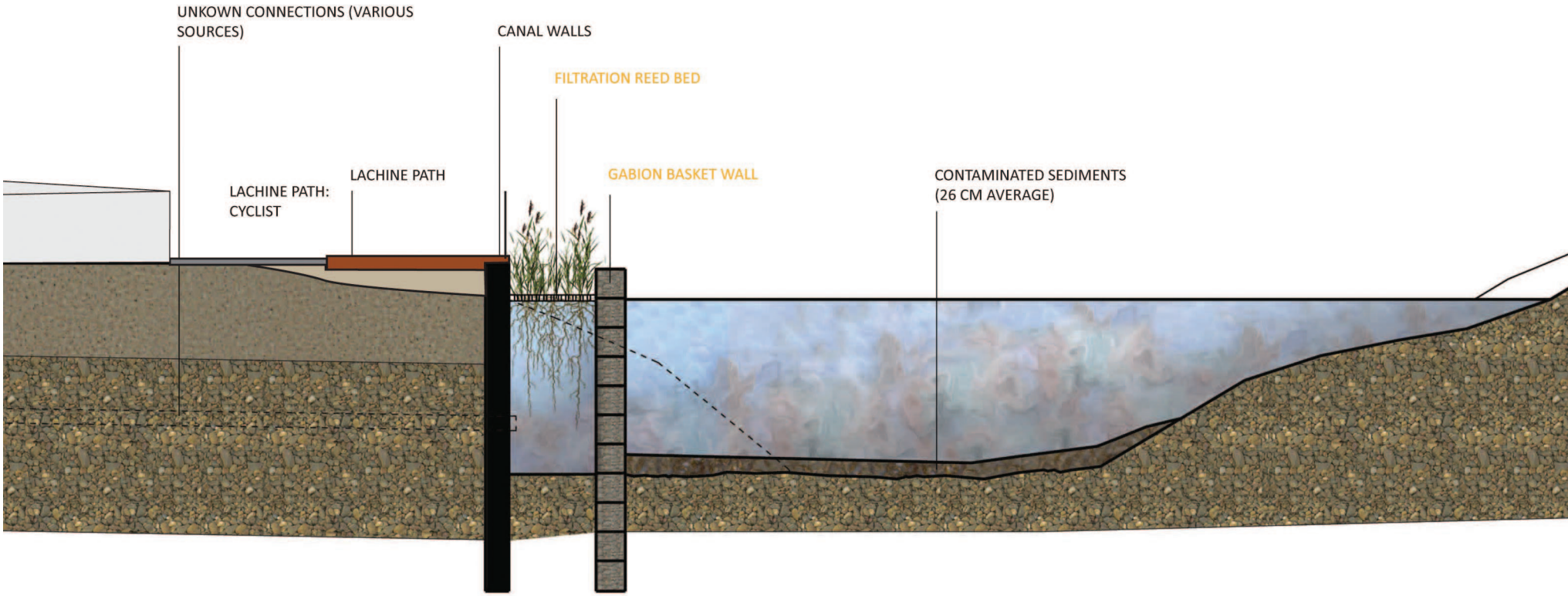


- DREDGE INFILL
- HIGHLY CONTAMINATED SITE*
- NEW CONSTRUCTION
- PROPOSED PEDESTRIAN PATH EXPANSION
- PROPOSED BIKE PATH EXPANSION
- EXISTING PATH
- EXISTING CANAL WALL
- PROPOSED DOUBLE CANAL WALL
- PARKS AND RECREATION
- FORMER PATH
- REMOVED EXISTING WALL

*LISTED LEVEL 'C' OR IN SITU CAPPING SITE AS PER THE LACHINE CANAL DECONTAMINATION REPORT

LOCK SECTION KEY PLAN 1:50m

COTE ST. PAUL LOCK



DOUBLE CANAL: TYPICAL SECTION

CANADA MALTING PLANT

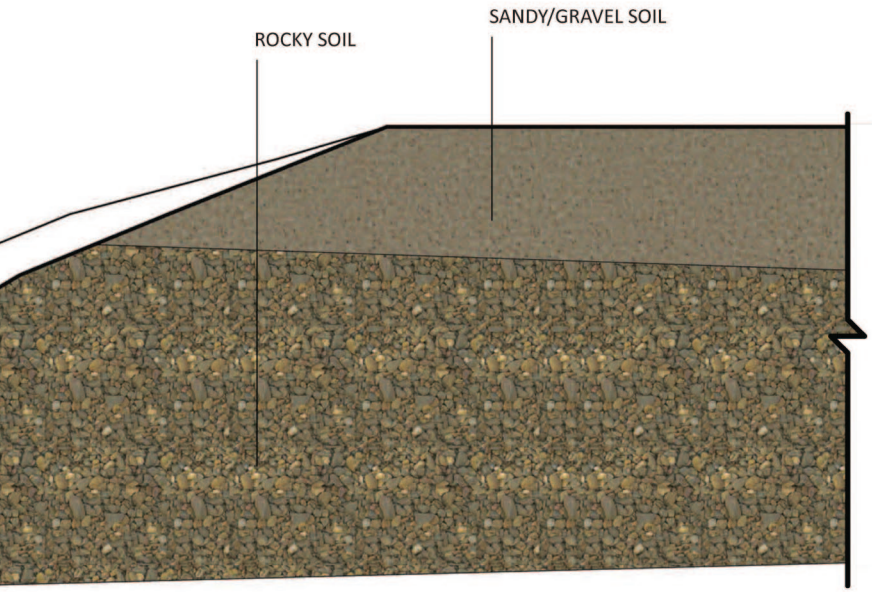
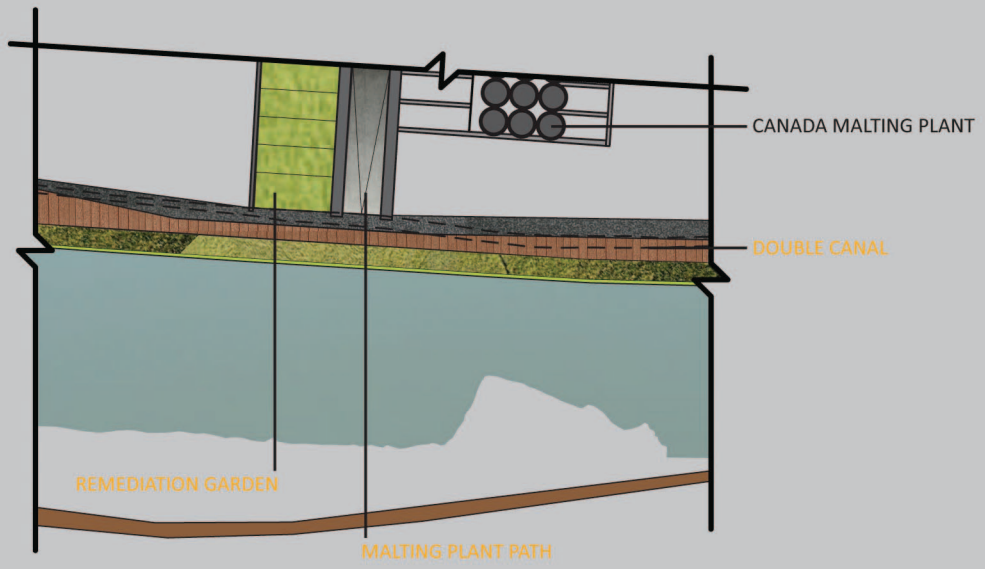


fig.3.1.14 Section identifying the condition of the double canal in the typical condition.

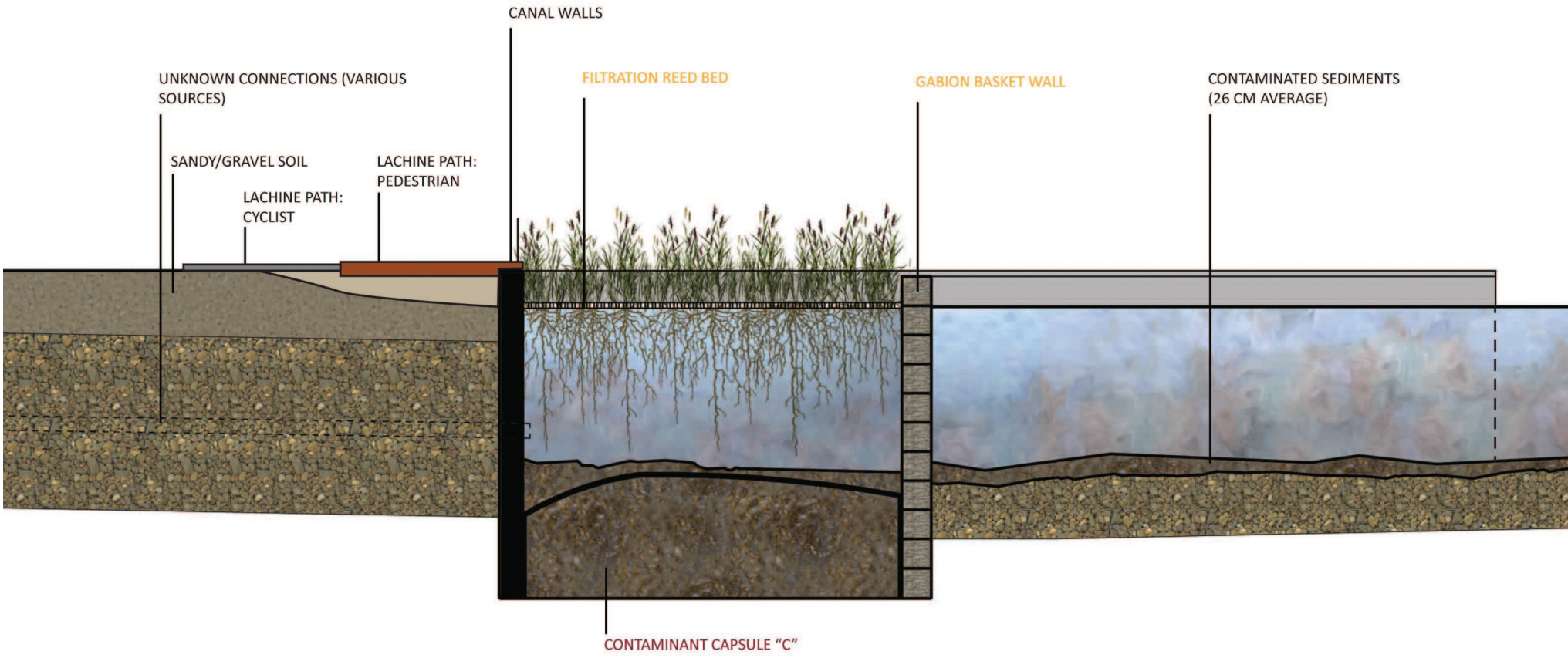


- DREDGE INFILL
- HIGHLY CONTAMINATED SITE*
- NEW CONSTRUCTION
- PROPOSED PEDESTRIAN PATH EXPANSION
- PROPOSED BIKE PATH EXPANSION
- EXISTING PATH
- EXISTING CANAL WALL
- PROPOSED DOUBLE CANAL WALL
- PARKS AND RECREATION
- — — FORMER PATH
- ..... REMOVED EXISTING WALL

*LISTED LEVEL 'C' OR IN SITU CAPPING SITE AS PER THE LACHINE CANAL DECONTAMINATION REPORT

TYPICAL SECTION KEY PLAN: 1:50m

CANADA MALTING PLANT



DOUBLE CANAL: CONTAMINANT CAPSULE SECTION

CONTAMINANT CAPSULE 3

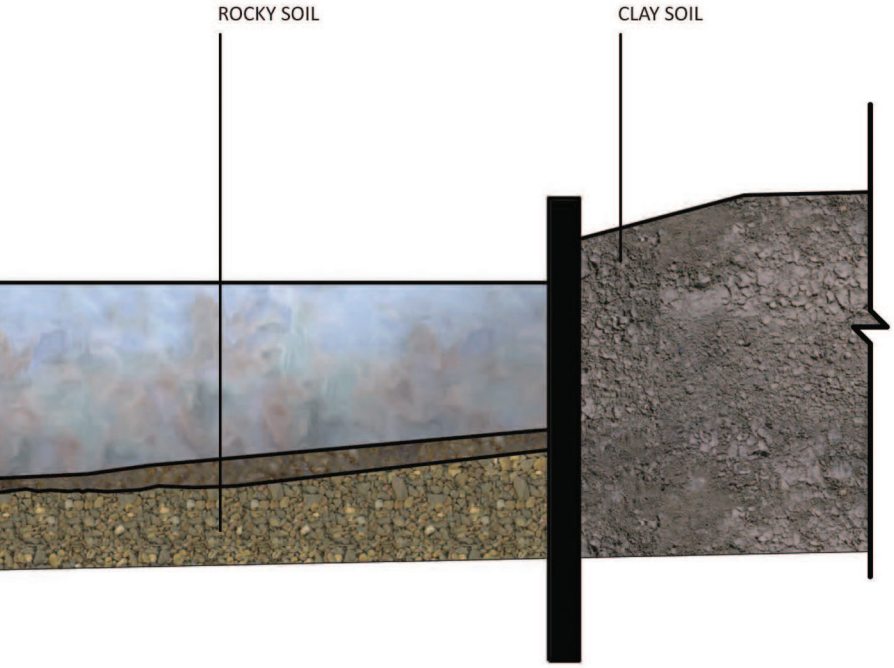
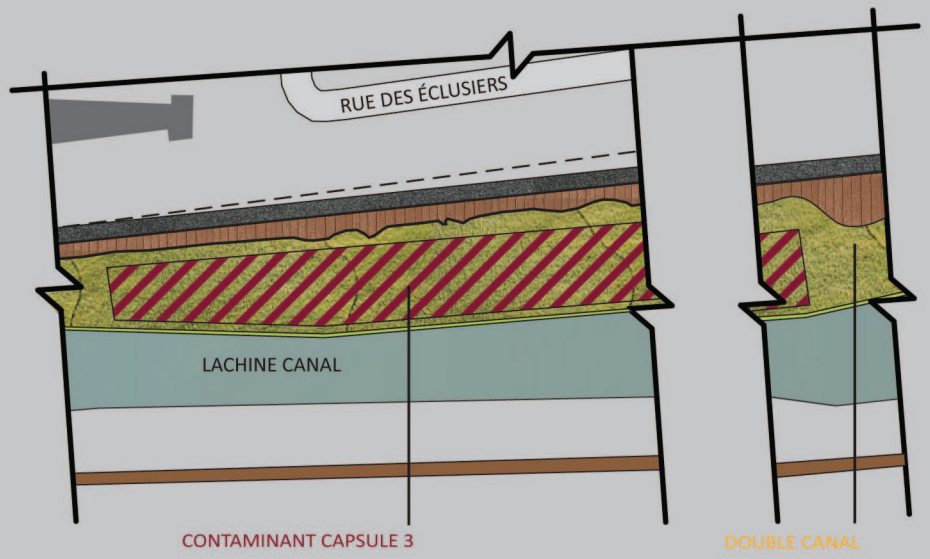


fig.3.1.15 Section identifying the condition of the double canal in the contaminant capsule condition.

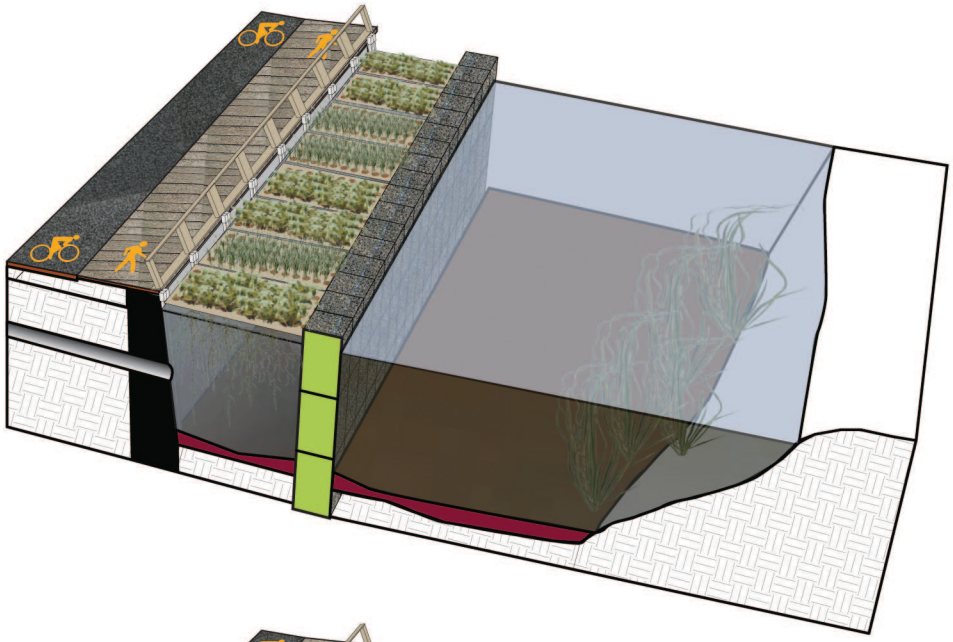


- DREDGE INFILL
- HIGHLY CONTAMINATED SITE*
- NEW CONSTRUCTION
- PROPOSED PEDESTRIAN PATH EXPANSION
- PROPOSED BIKE PATH EXPANSION
- EXISTING PATH
- EXISTING CANAL WALL
- PROPOSED DOUBLE CANAL WALL
- PARKS AND RECREATION
- FORMER PATH
- REMOVED EXISTING WALL

*LISTED LEVEL 'C' OR IN SITU CAPPING SITE AS PER THE LACHINE CANAL DECONTAMINATION REPORT

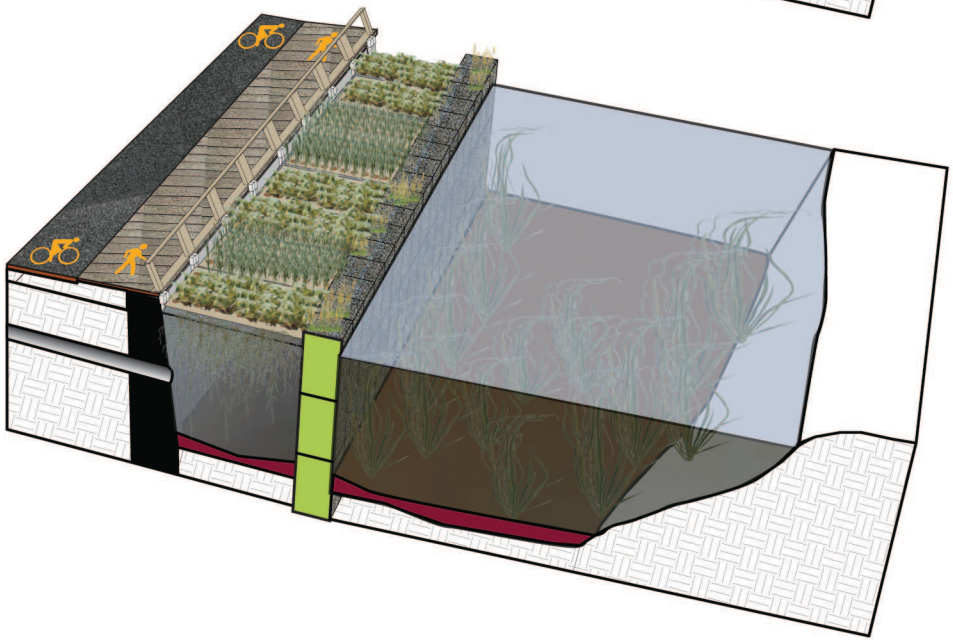
CONTAMINANT CAPSULE KEY PLAN: 1:50m

CONTAMINANT CAPSULE 3



PHASE ONE: THE DOUBLE CANAL

INSTALLATION OF THE GABION BASKET WALL, PLANTING BEDS, AND PLANTS.
SPECIES INCLUDE: HYACINTH, REEDS, EELGRASS (EXISTING), AND SWEETGRASS



PHASE TWO: OVERGROWN

PLANTS CONTINUE TO ESTABLISH THEMSELVES AND BEGIN TO USE THE GABION WALL AS A GROWING MEDIUM.

EELGRASS SPREADS ON THE BOTTOM OF THE CANAL.

SPECIES PALETTE MAY BE ALTERED BY REMOVING THE PLANTERS AND ADDING IN NEW SPECIES THAT RESEARCH HAS SHOWN TO RESPOND BETTER TO DIFFERENT CONTAMINANTS.

PHASE THREE: WETLAND

THE PLANTS HAVE GROWN OVER THE MAJORITY OF THE CANAL AND DISPERSED THROUGHOUT THE ORIGINAL PLANTING BEDS. THE PLANTS CONTINUE TO IMPROVE WATER QUALITY THROUGHOUT THE CANAL.

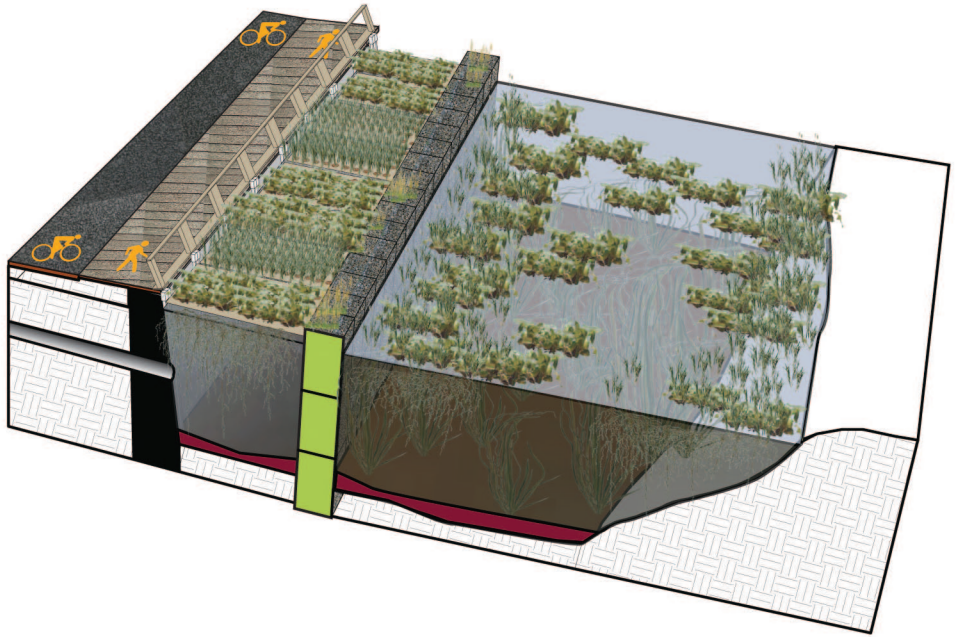


fig.3.1.16 Phasing of the Echoed Canal in three parts spanning decades, sees the eventual creation of a wetland re-purposing the derelict canal.

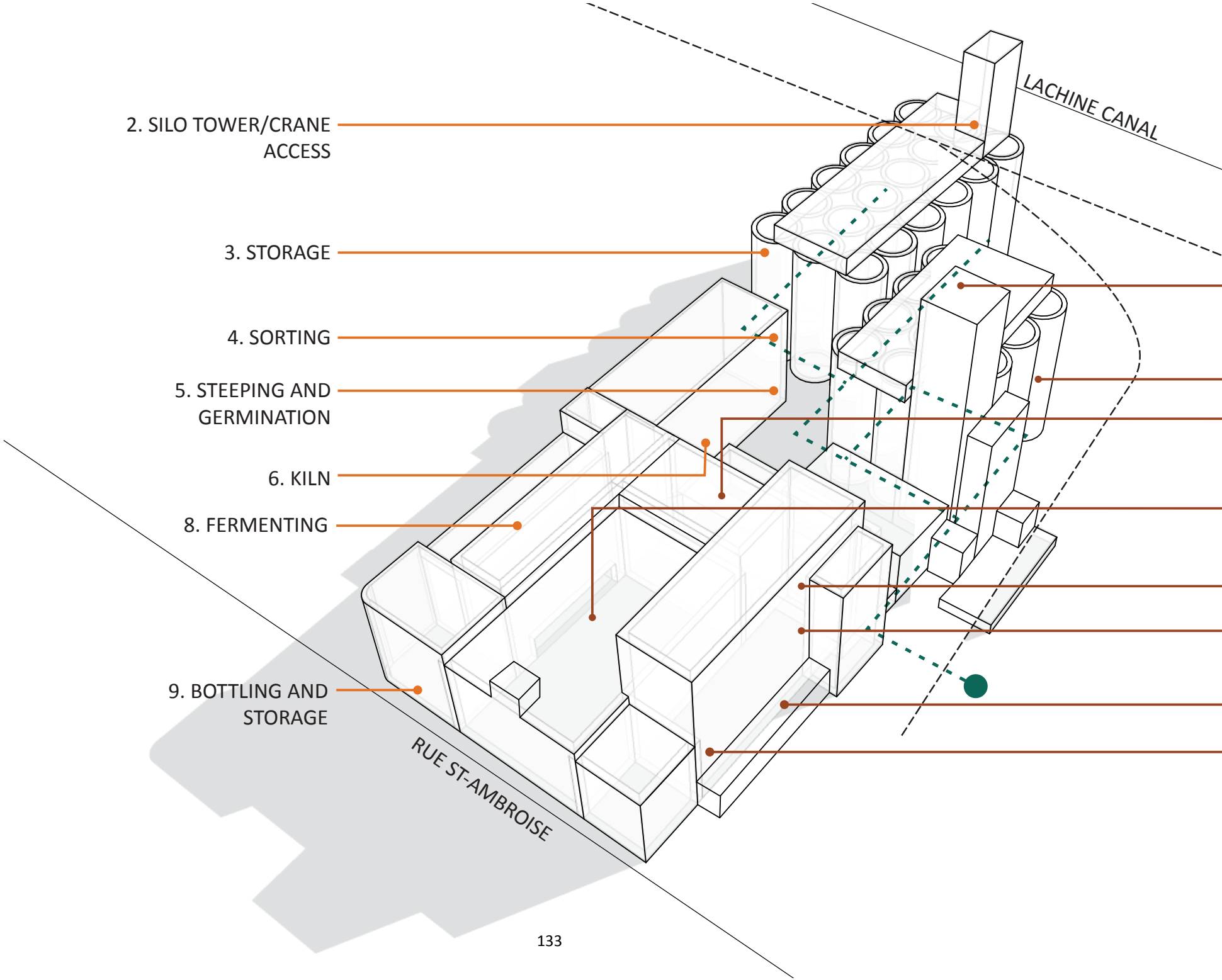
3.2 DESIGN PROPOSAL: THE CANADA MALTING PLANT

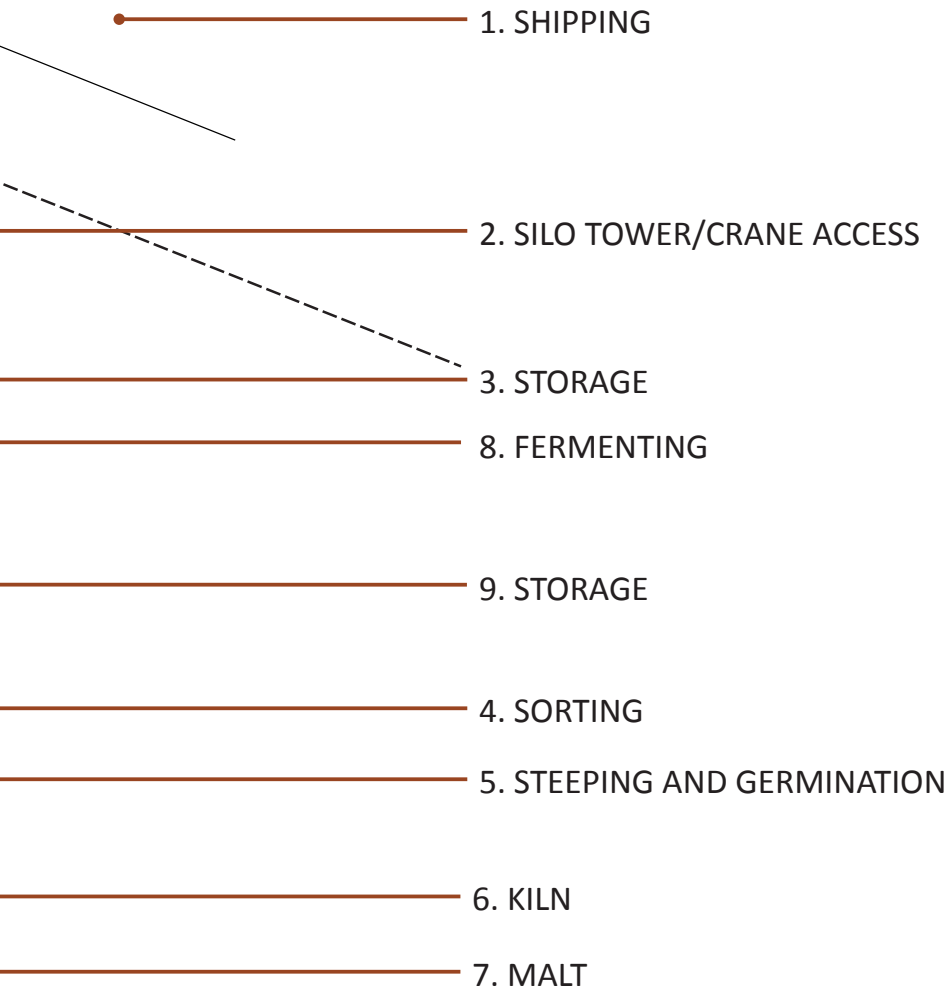
The Canada Malting Plant is a complex site exhibiting a palimpsest of many distinct temporal layers of development and grime. The original malting plant, constructed in 1899 consisted of brick structures and clay tile silos and had been renovated and expanded upon to accommodate the development of the canal and railway.[1] With the addition of rail lines the site was effectively cut in two where the track was laid. This obstruction was countered with the expanding tunnel system that connected the far end of the site to the existing structures below grade. With the increased demand and need for greater production, the malting plant expanded in 1963 to include a new set of concrete silos and structures that attached themselves directly onto the existing production spaces.[2] Over the lifespan of the malting plant sporadically erected sheds, clad in metal siding, began to riddle the site as more space was needed. They still cover the site and existing structures as a blight of rust creating yet another layer of chaotic construction.

The texture and scale of the brick structures and clay tile silo complex of the original construction are set apart as the most interesting forms on the site. The clay tile silos are the last of their kind in Canada, warranting a particular interest in their construction and form.[3] Unlike the brick structures and silos of the malting plant, the concrete forms have a monotonous regularity to them in terms of volume and structure, that allow them great adaptability and potential for reuse. This identification through materiality and construction led to a strategy of integration, adaptive reuse, and recycling, where the brick, concrete, and metal siding structures respectively could be organized as a means of reinterpreting the site.

fig.3.2.1 (Opposite Page) The Canada Malting Plant's former rail path through the main gate.

fig.3.2.2 (Next Page) Malting Plant Analysis maps the process of creating malt that once existed on the site.


2. SILO TOWER/CRANE ACCESS
3. STORAGE
4. SORTING
5. STEEPING AND GERMINATION
6. KILN
8. FERMENTING
9. BOTTLING AND STORAGE
LACHINE CANAL
RUE ST-AMBROISE



RAIL LINES

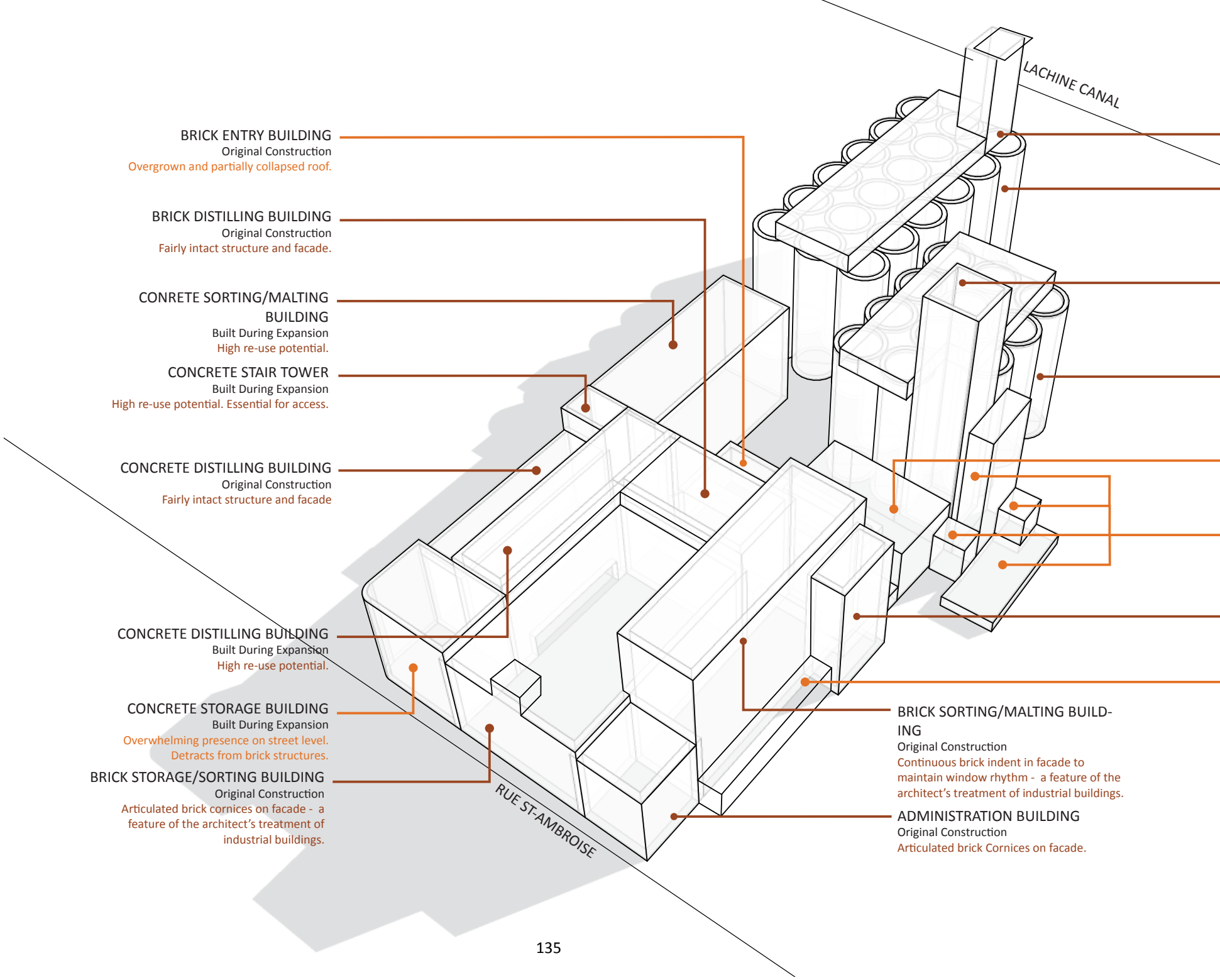
TUNNEL SYSTEM

ORIGINAL CONSTRUCTION

EXPANSION CONSTRUCTION

CANADA MALTING PLANT ANALYSIS

MALTING PROCESS



BRICK ENTRY BUILDING
Original Construction
Overgrown and partially collapsed roof.

BRICK DISTILLING BUILDING
Original Construction
Fairly intact structure and facade.

CONRETE SORTING/MALTING BUILDING
Built During Expansion
High re-use potential.

CONCRETE STAIR TOWER
Built During Expansion
High re-use potential. Essential for access.

CONCRETE DISTILLING BUILDING
Original Construction
Fairly intact structure and facade

CONCRETE DISTILLING BUILDING
Built During Expansion
High re-use potential.

CONCRETE STORAGE BUILDING
Built During Expansion
Overwhelming presence on street level.
Detracts from brick structures.

BRICK STORAGE/SORTING BUILDING
Original Construction
Articulated brick cornices on facade - a feature of the architect's treatment of industrial buildings.

BRICK SORTING/MALTING BUILDING
Original Construction
Continuous brick indent in facade to maintain window rhythm - a feature of the architect's treatment of industrial buildings.

ADMINISTRATION BUILDING
Original Construction
Articulated brick Cornices on facade.

CORRUGATED SIDING STAIR TOWER
Built During Expansion
Monumental scale and recognizable form. Limited Access.

CONCRETE SILOS
Built During Expansion
Monumental scale and high
re-use potential.

BRICK TOWER
Original Construction
Highest structure on the site featuring novel mechanical equipment still intact.

CLAY TILE SILOS
Original Construction
Unique facade. Last of its kind
in Canada.

CORRUGATED SIDING GRAIN SHED
Original Construction
Decrepit facade and structure.

CORRUGATED SIDING RAIL ACCESS AND LOADING SHEDS
Original Construction
Decrepit facade and structure.

PROCESSING BUILDING EXPANSION
Built During Expansion
Facade and structure intact.

BRICK STORAGE BUILDING
Original Construction
Overgrown. Potential for views into main building complex.

BUILDINGS MAINTAINED

BUILDINGS REMOVED/RECYCLED

CANADA MALTING PLANT ANALYSIS

BUILDING ADAPTATION

fig.3.2.3 (Previous Page) Malting Plant Analysis shows the state of the existing buildings and there viability for reuse and adaptation.

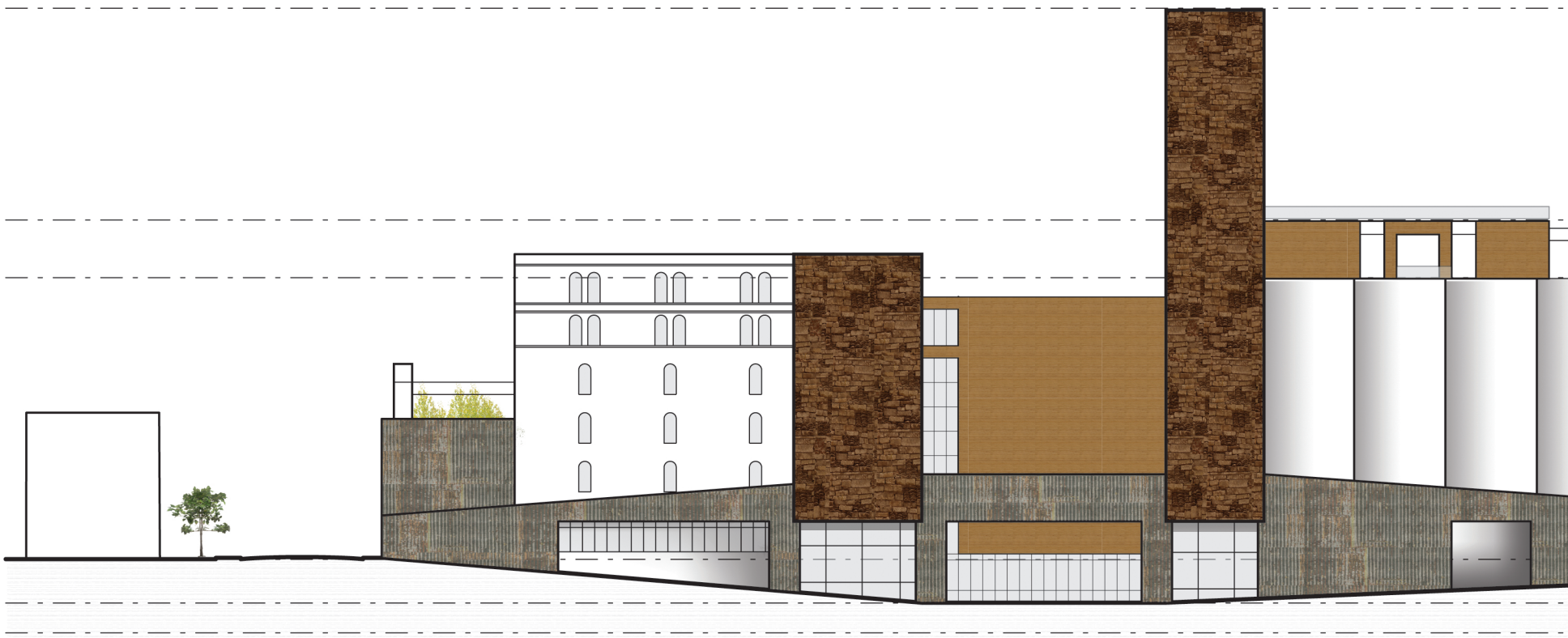
fig.3.2.4 Interior View of the existing Malting Plant in its dereliction.


F
E
D
C
B
A
F
E
D
C

SITE PLAN
1:10000

Once the railway cut through the site, now displayed as scars only visible from above. It is this path of movement where the cut is made, forming a sunken path at the depth of the existing tunnel system across the site, that connects the canal network to the ruin. The path, formed by a cut in the site, is itself a distant echo of the canal and its networks of flow as well as the former rail path used for transport and loading on the site. The descending path also sinks to expose the existing tunnel system, further revealing the ecology and movement that once laid beneath the soil. It is an experiential cut that introduces the inhabitant to the toxicity and decay of the industrial ruin. The retaining walls of the path are made of concrete, cast using the recycled metal façade to absorb the rust and wear, making palpable the former textures of the site.

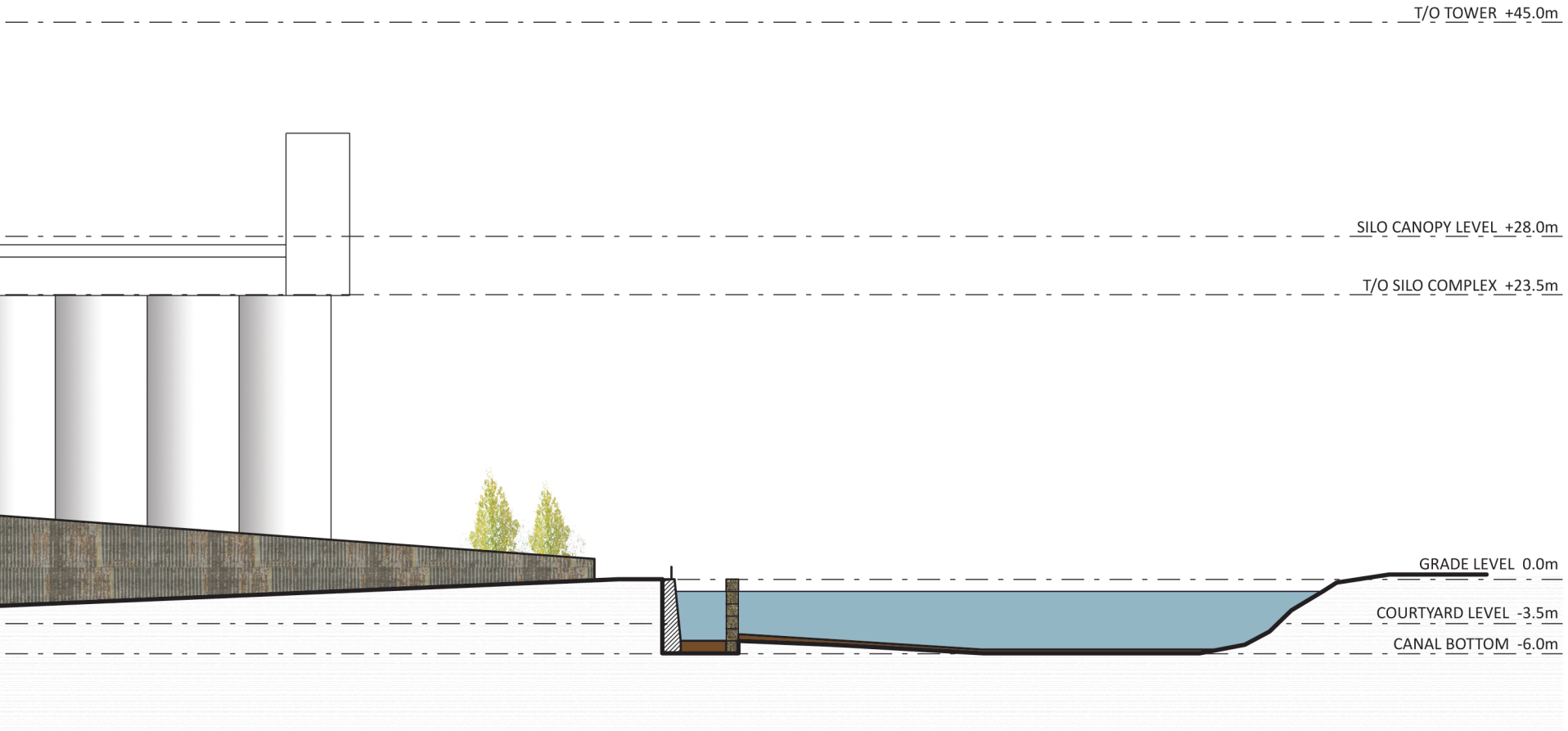
fig.3.2.5 (Opposite Page) Proposed site plan.

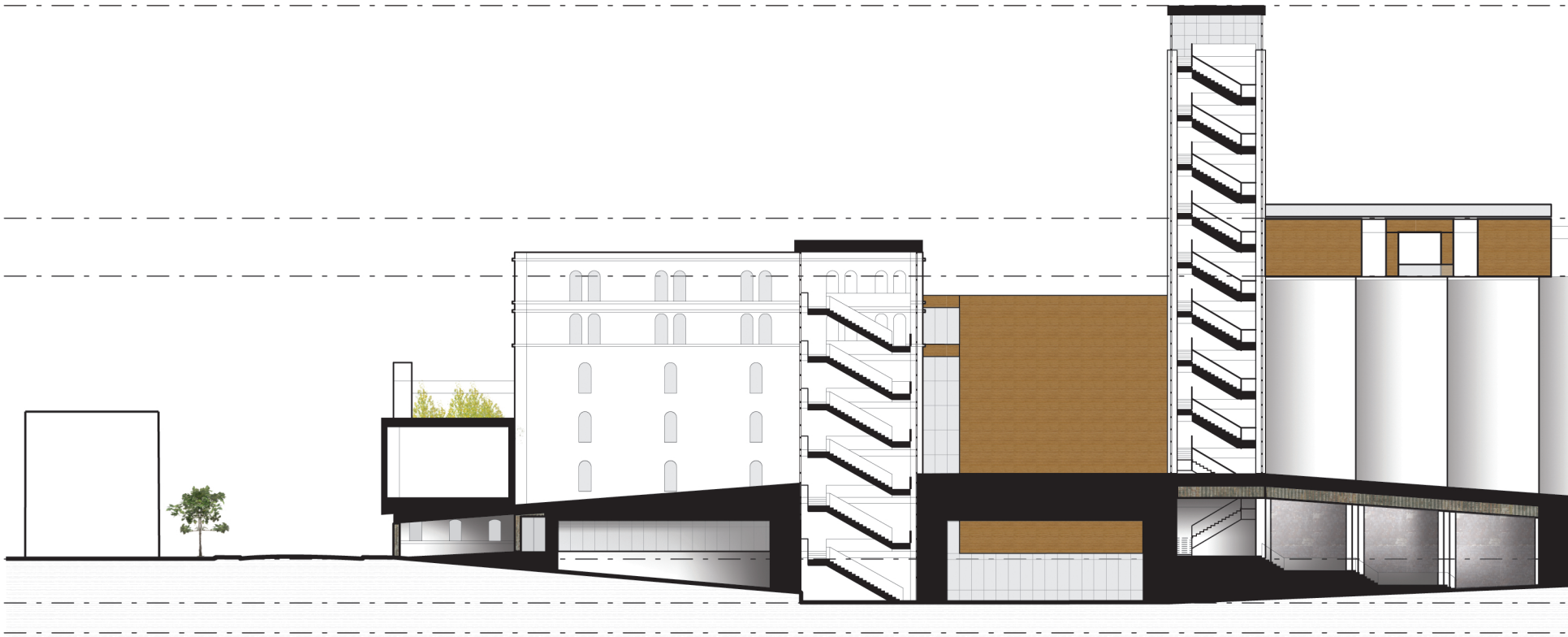


A: SITE SECTION THROUGH EXPERIENTIAL PATH

1:1000

fig.3.2.6 Section A cutting through the main path.

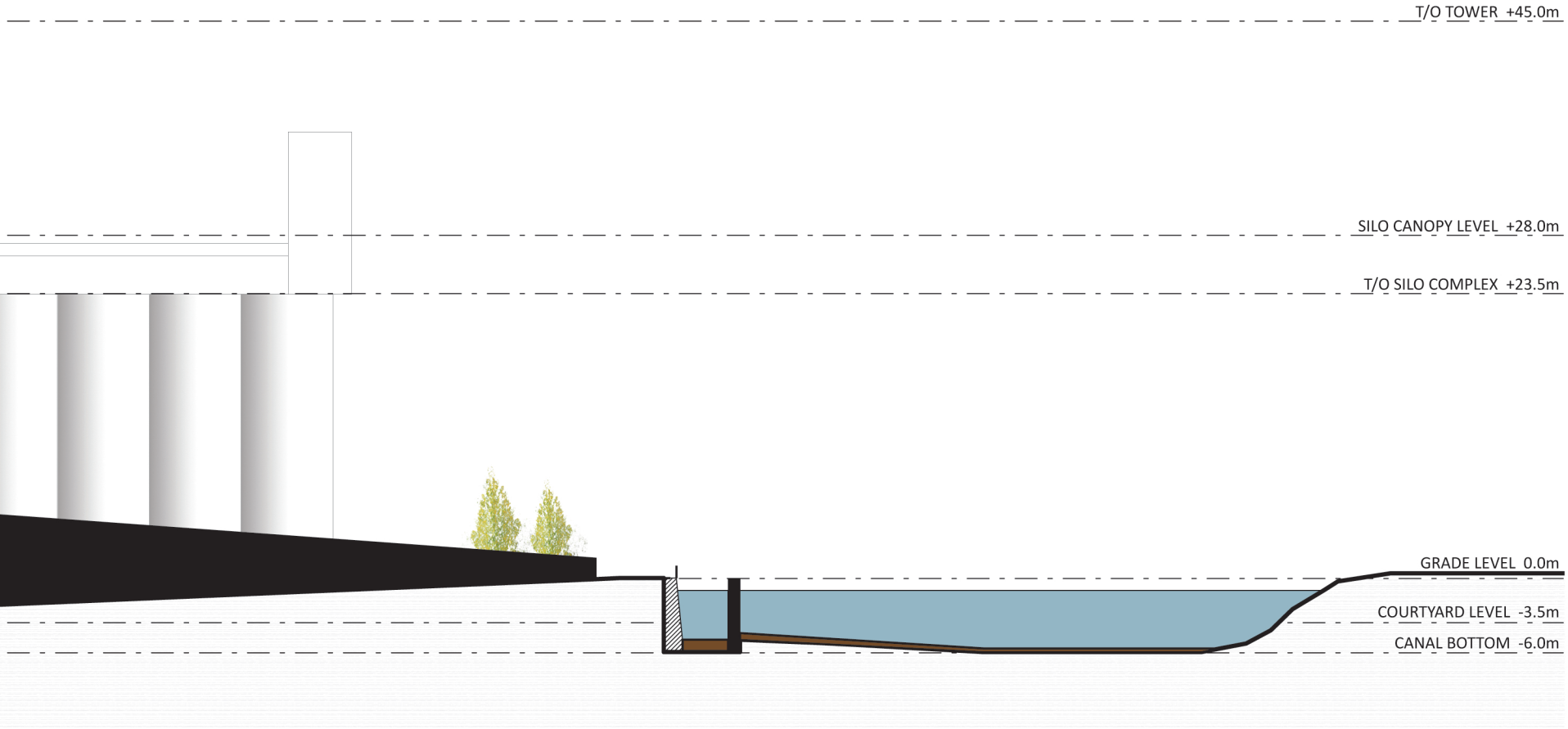

T/O TOWER +45.0m
SILO CANOPY LEVEL +28.0m
T/O SILO COMPLEX +23.5m
GRADE LEVEL 0.0m
COURTYARD LEVEL -3.5m
CANAL BOTTOM -6.0m

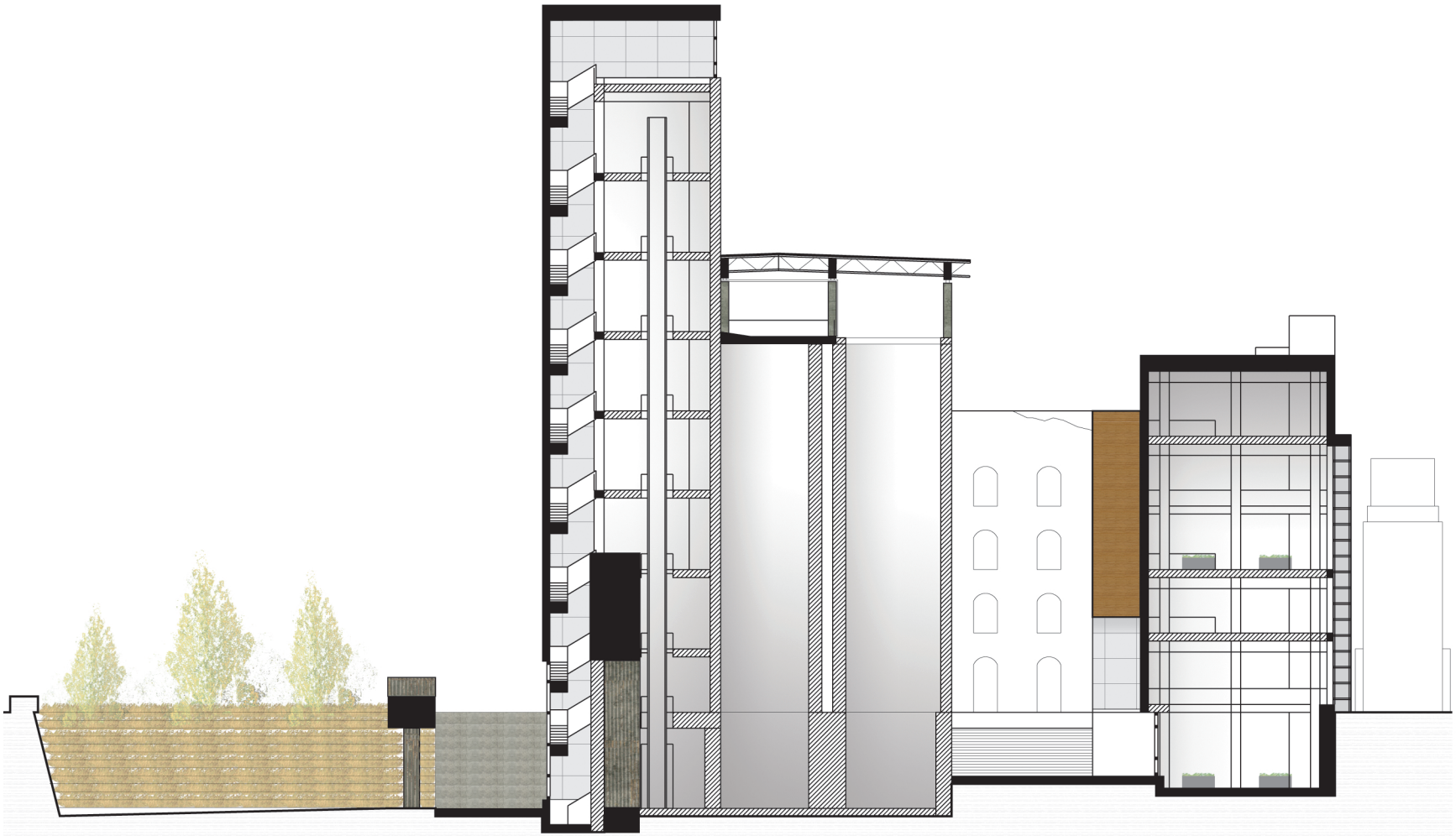


B: SITE SECTION THROUGH EXPERIENTIAL WALL

1:1000

fig.3.2.7 Section B cutting through the main path wall, showing points of access into the main program areas.


T/O TOWER +45.0m
SILO CANOPY LEVEL +28.0m
T/O SILO COMPLEX +23.5m
GRADE LEVEL 0.0m
COURTYARD LEVEL -3.5m
CANAL BOTTOM -6.0m



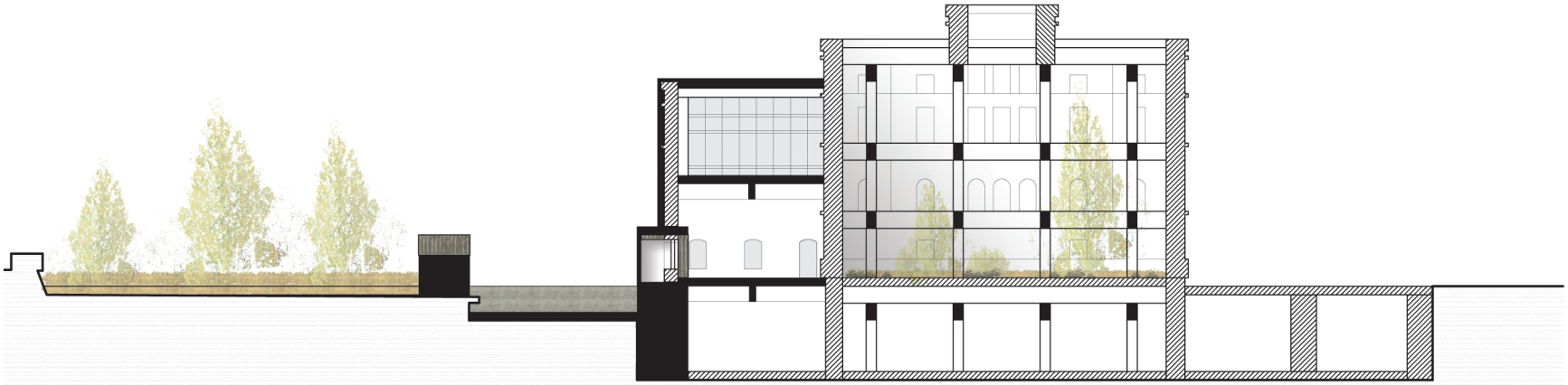
D: SITE SECTION THROUGH CLAY TILE SILOS
1:500

fig.3.2.8 Section D cutting through the tower and Research Centre Laboratory.

C: SITE SECTION THROUGH SILOS

1:500

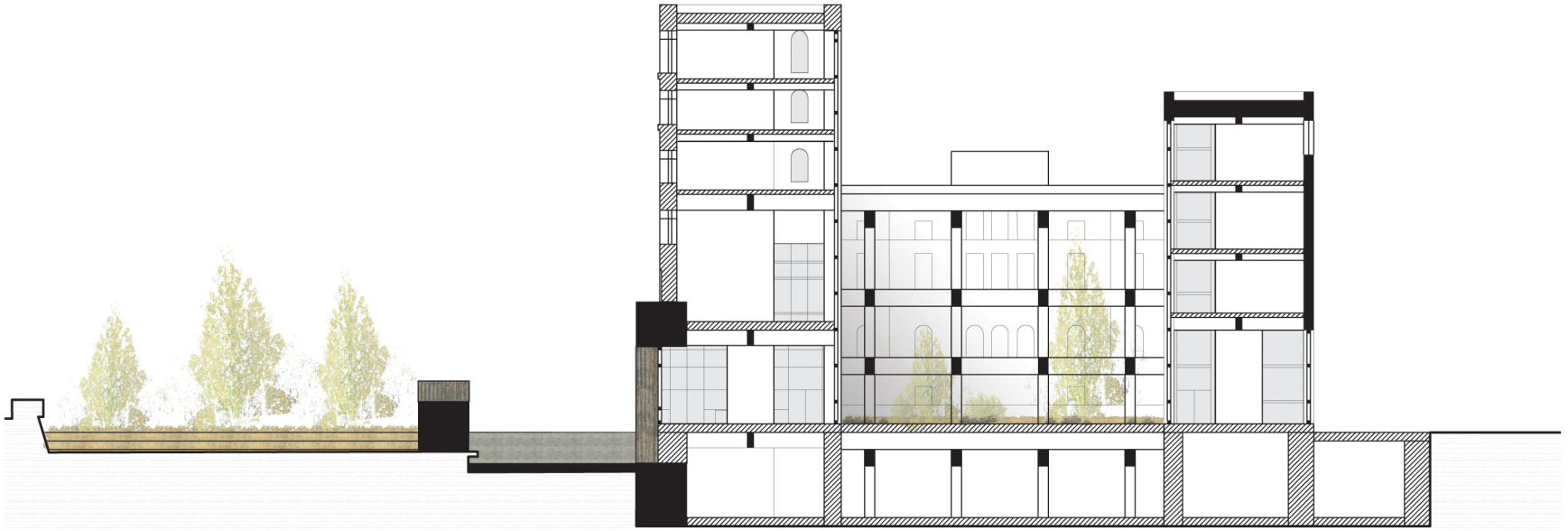
fig.3.2.9 Section C cutting through both silo complexes, revealing the circulation in both. The concrete silos use a lift to provide access for cleaning and maintenance.



F: SITE SECTION THROUGH WILD GARDEN AND GALLERY

1:500

fig.3.2.10 Section F cutting through the main path showing the Education Center and Wild Garden Spaces.



E: SITE SECTION THROUGH REMEDIATION AND EDUCATION CENTRES

1:500

fig.3.2.11 Section E cutting through the main path, showing the Education Centre Demonstration Space, The Wild Garden, and the Administration Levels of the Research Facility.

fig.3.2.12 Existing street view of the Malting Plant.

13 Rendered proposal street view.


ZINC
CU COPPER

Descending through the cut path exposes many access points where the visitor is encouraged to immerse themselves in the ruin. The textured path walls and their porosity offer glimpses to the interior where the ruin can be experienced, tantalizing the visitor to explore the site beyond the framed views of the guiding walls. At the centre of the cut lies a new axis of movement. The sunken courtyard, a place of repose at the heart of the proposal, exposes the massive scale of the structures. It is the central hub where all program spaces of the site can be accessed or viewed: the Tower Lookout, the Wild Garden, the Phytoremediation Garden, the Environmental Education Centre, and the Environmental Remediation Centre.

fig.3.2.14 (Opposite Page) Rendered vignette of the path entrance.


Zn zinc
Cu copper

THE PHYTOREMEDIATION GARDENS

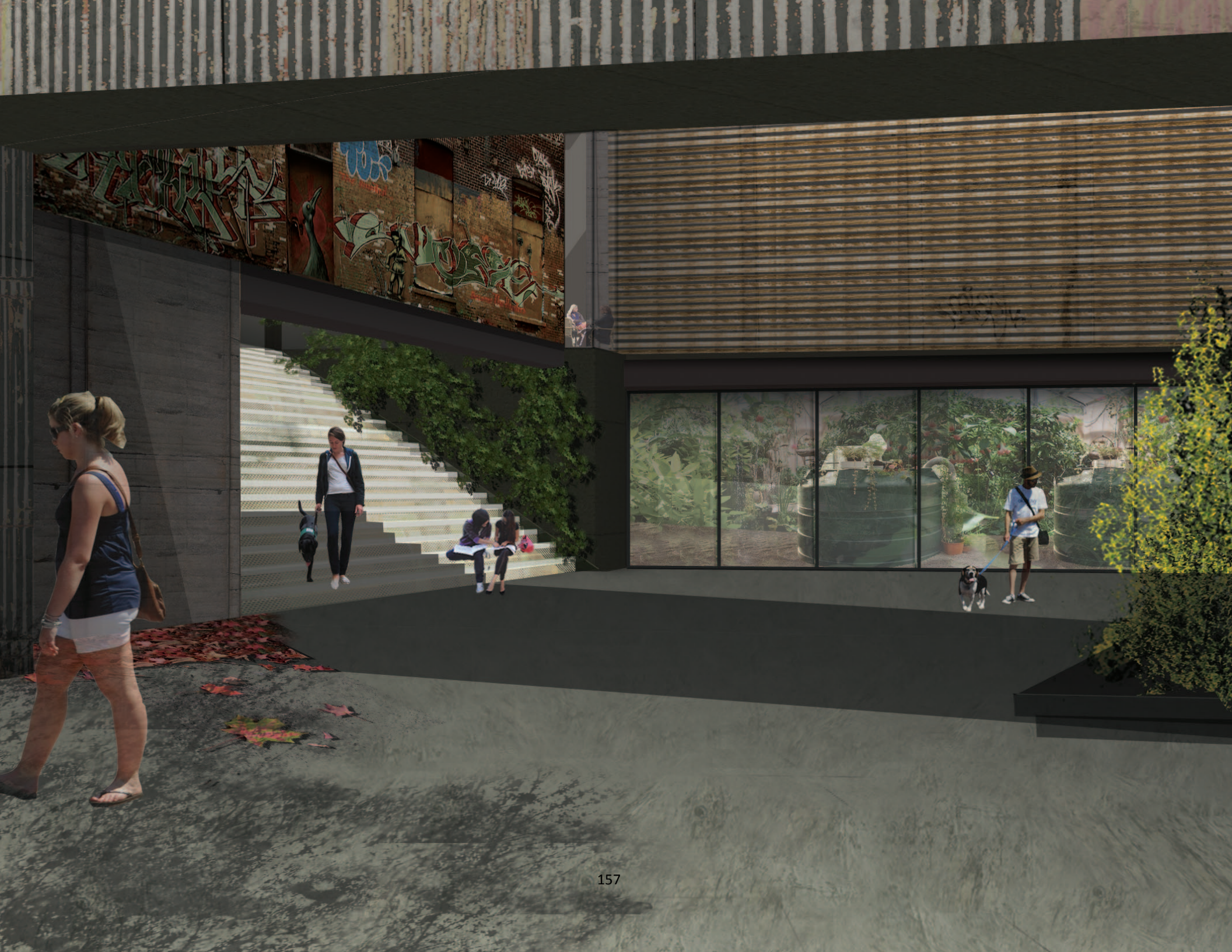
As the path descends, the Phytoremediation Garden slowly exposes the descending terraces where the least harmful contaminants from the canal dredging have been placed – zinc, cadmium, copper, etc. The projecting phytoremediation terraces reveal and identify the contaminant treated in each bed, exposing a myriad of vegetation capable of addressing the toxicity left behind.

fig.3.2.15 (Opposite Page) Rendered vignette of the phytoremediation gardens.

THE WILD GARDEN

Expressing the essence of impromptu inhabitation, the wild garden exhibits naturally growing plants that have taken root. The central brick structures, with roofs removed, facilitate this new occupation as a garden atrium space dividing the Education Centre and the Remediation Centre.

fig.3.2.16 (Opposite Page) Rendered vignette of the wild garden.



THE ENVIRONMENTAL REMEDIATION CENTRE

The concrete structures with their excellent adaptability are re-clad in wood – a new layer of texture to the site – housing the Environmental Remediation facility. Laboratory spaces and administration offices reside in the concrete structures, also connecting directly to the concrete silos where the canal contaminants have been stored.

fig.3.2.17 (Opposite Page) Rendered vignette of the view to the remediation centre through the main path intersection with the courtyard.

THE ENVIRONMENTAL EDUCATION CENTRE

The remaining brick warehouses have been integrated to house the Education Centre. The program features a public demonstration space, classrooms, and a gallery spaces each aimed at engaging the community with the needs of the canal region. The uppermost levels house administration and meeting spaces for volunteer organizations such as Le Vert Sud-Ouest that employ the most impoverished of the community in the cleansing and healing of the canal network, revitalizing the corridor and community simultaneously.

fig.3.2.18 (Opposite Page) Rendered vignette of the view to the Education Centre's Public Demonstration Space from the main path.

fig.3.2.19 Rendered vignette of the Education Centre gallery space that visually connects to the street.

TOWER LOOKOUT

Modeled on the concept of Patrick Geddes Outlook Tower, the Malting Plant Tower Lookout provides ascending galleries displaying maps and images of the canal corridor from its inception to its current state. The tunnels below the silos are accessible leading into the brick tower where the ascending galleries begin. At the top of the silos another lookout frames views towards the adjacent canal locks in the landscape, momentarily interrupting the gallery spaces. The top of the tower provides an unobstructed panoramic view of Montreal, visibly connecting landscape and ruin with the greater context of the region.

fig.3.2.20 Rendered section of the silo path that cuts through the silos to expose their construction and scale.

fig.3.2.21 Rendered vignette of the Tower Lookout providing a panoramic view of Montreal.

fig.3.2.22 Rendered vignette of the Tower Gallery displaying charts, maps, and images of the historical development of the canal.

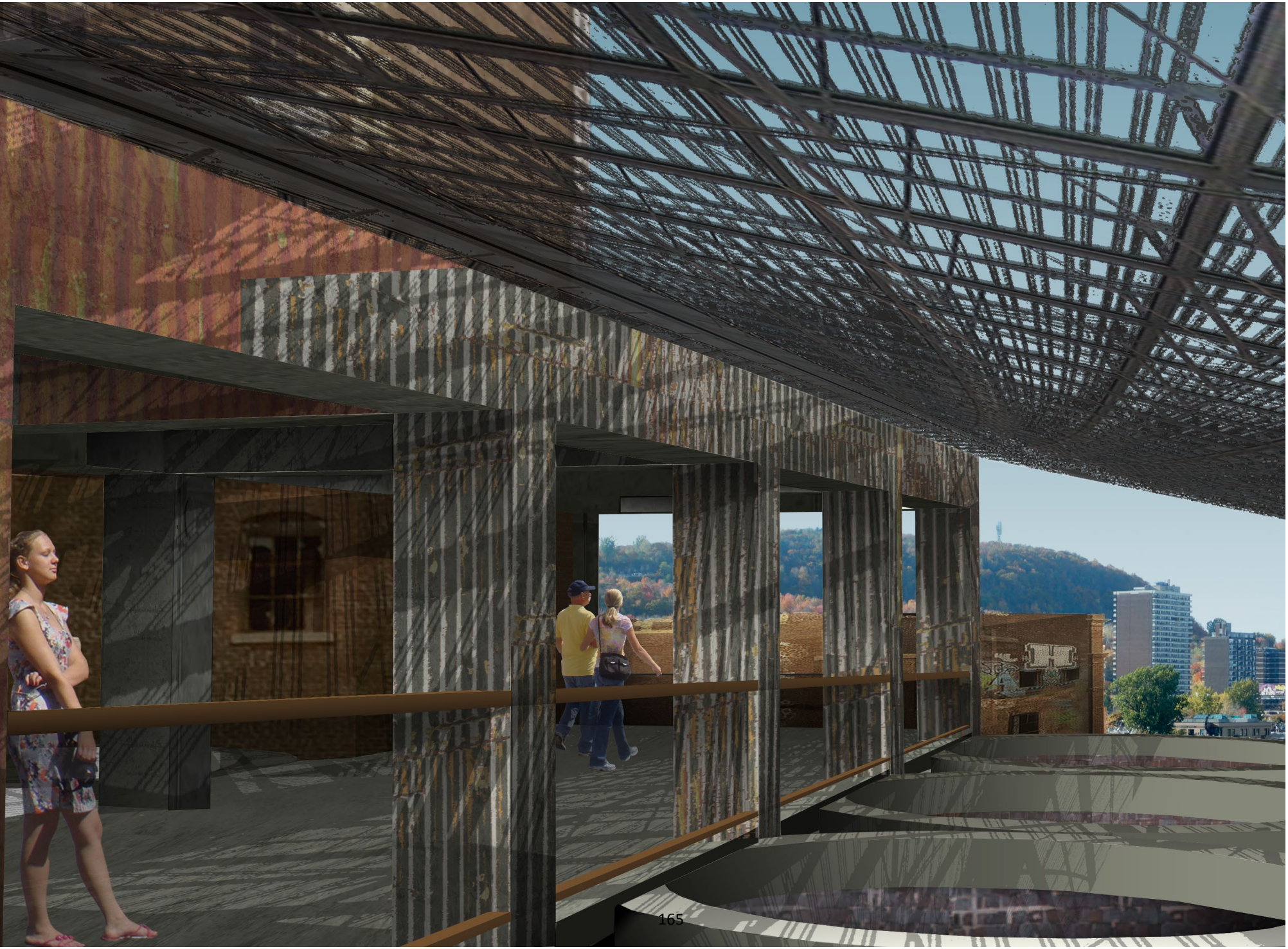
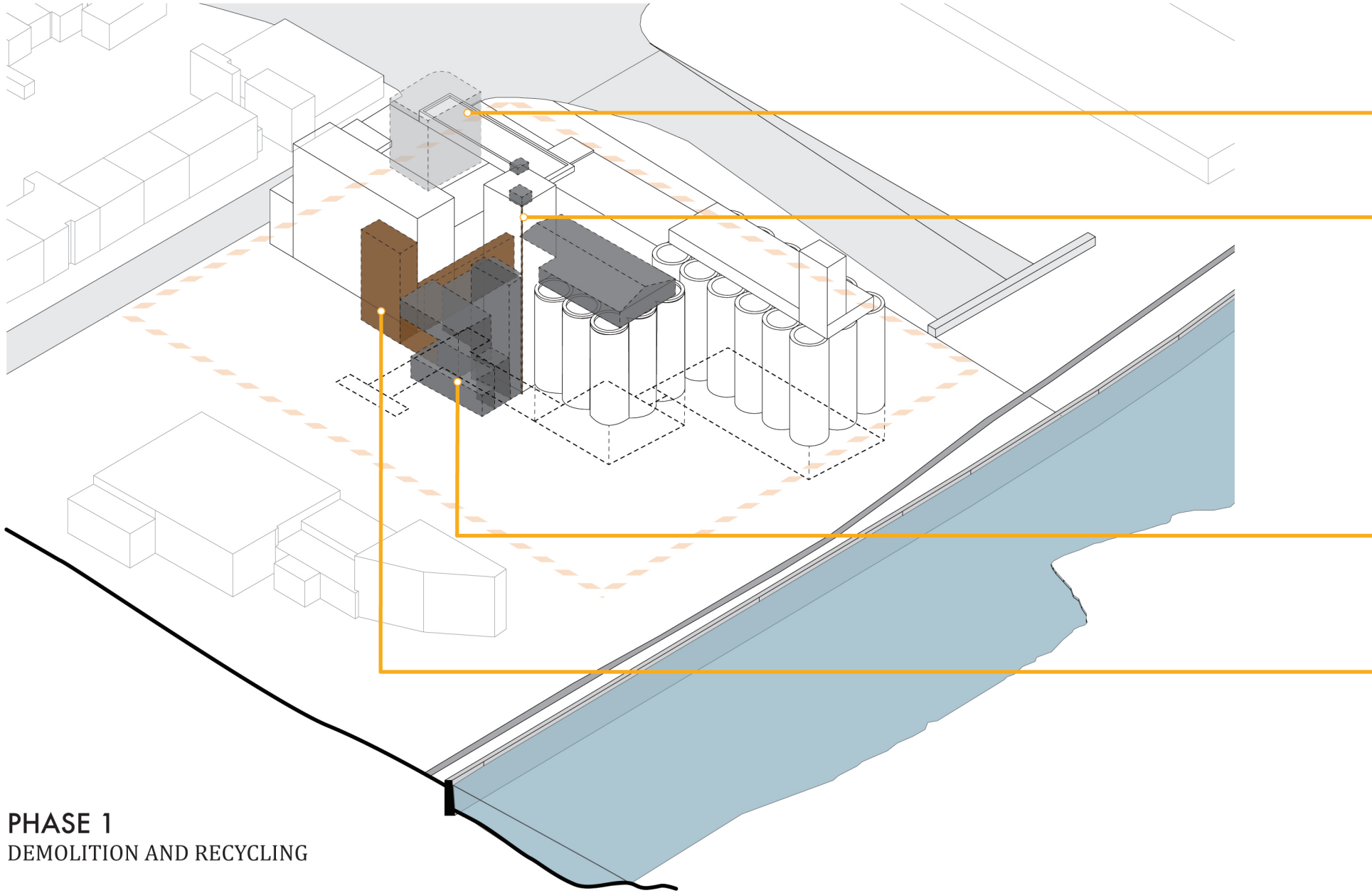


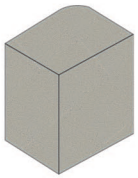
fig.3.2.23 Rendered vignette of the Silo Lookout that frames views towards the adjacent locks in the landscape and provides interaction with the silos from above.

PHASING

The proposal consists of many layers of landscape and architecture that encompass an regional spanning infrastructure and a community scale building. The construction itself requires several years comprising many phases, while the growth and development of the program and plantings will take many decades to properly establish themselves, creating a remedial network of wetlands and gardens.

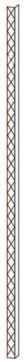


PHASE 1
DEMOLITION AND RECYCLING



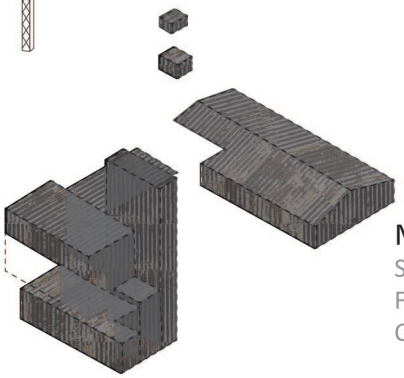
CONCRETE STRUCTURE

THE TALLEST CONCRETE STRUCTURE ON SIDE IS DISMANTLED CREATING A NEW ENTRANCE INTO THE SITE. THE CONCRETE MAY BE RECYCLED AS AGGREGATE FOR NEWLY POURED CONCRETE.



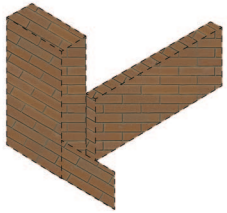
MECHANICAL EQUIPMENT

VARIOUS GRINDERS, TANKS, AND CRANES ON SITE ARE SENT TO RECYCLING FACILITIES.



METAL SIDING STRUCTURES

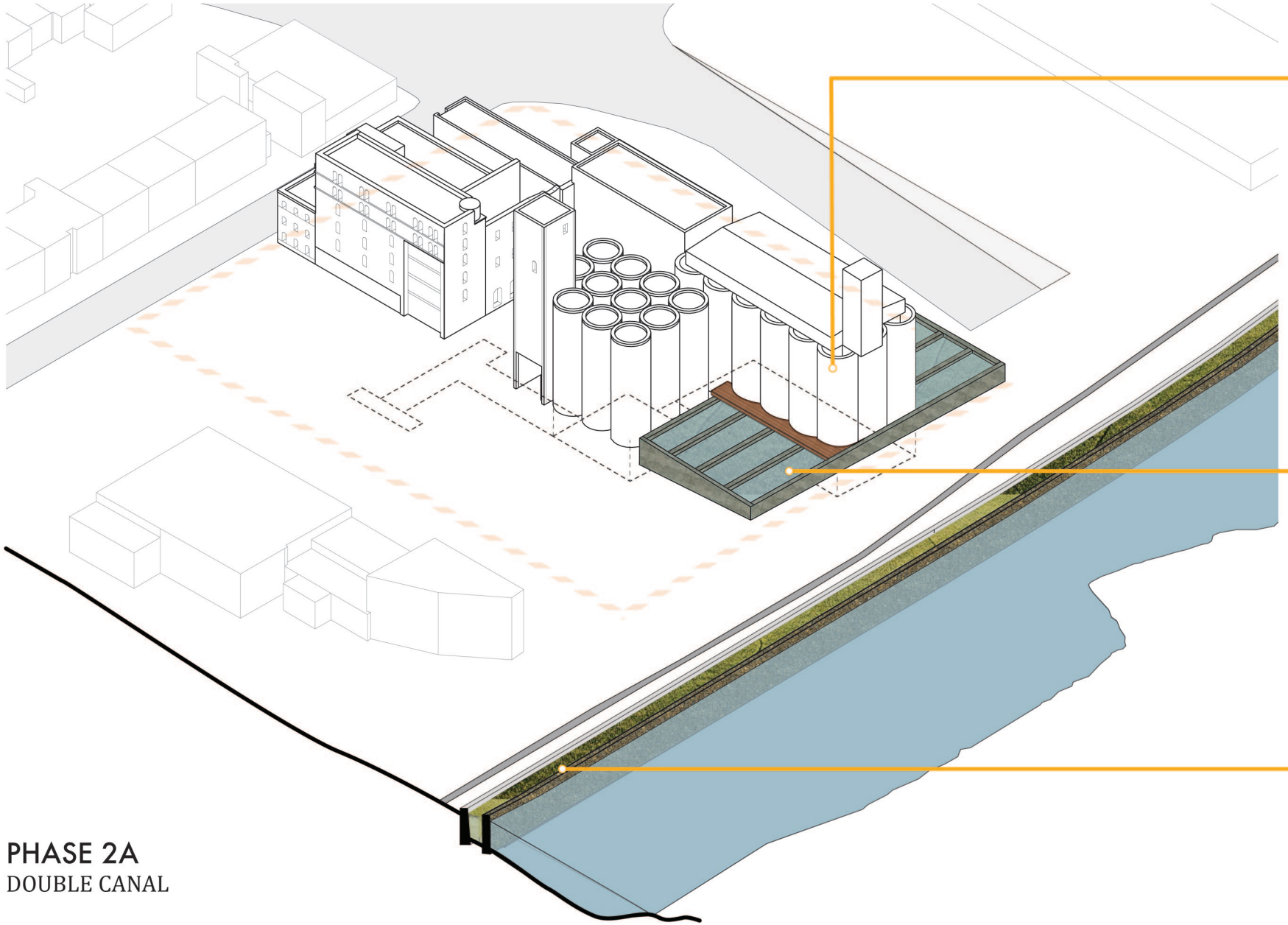
STORED AND KEPT ON SITE AS FORMWORK FOR NEWLY POURED CONCRETE.



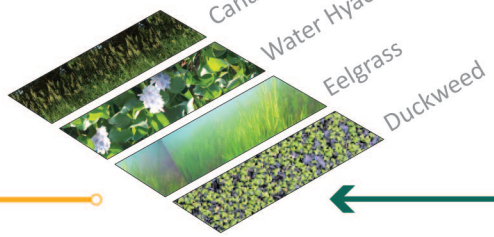
MASONRY FACADES

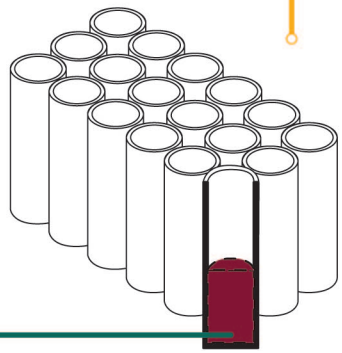
BRICKS ARE STORED AND KEPT ON SITE TO BE RE-USED IN RECYCLED BRICK FACADES.

fig.3.2.24 A diagrammatic image of phase one involving the demolition and recycling of site structures.



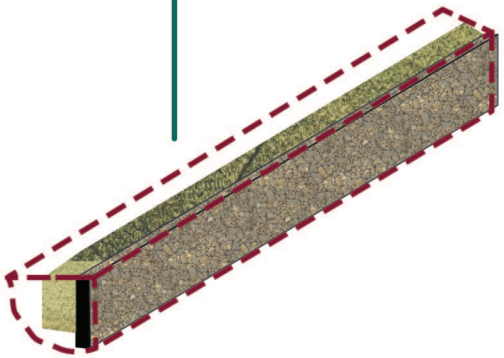
PHASE 2A
DOUBLE CANAL





CONTAMINANT STORAGE AND SORTING

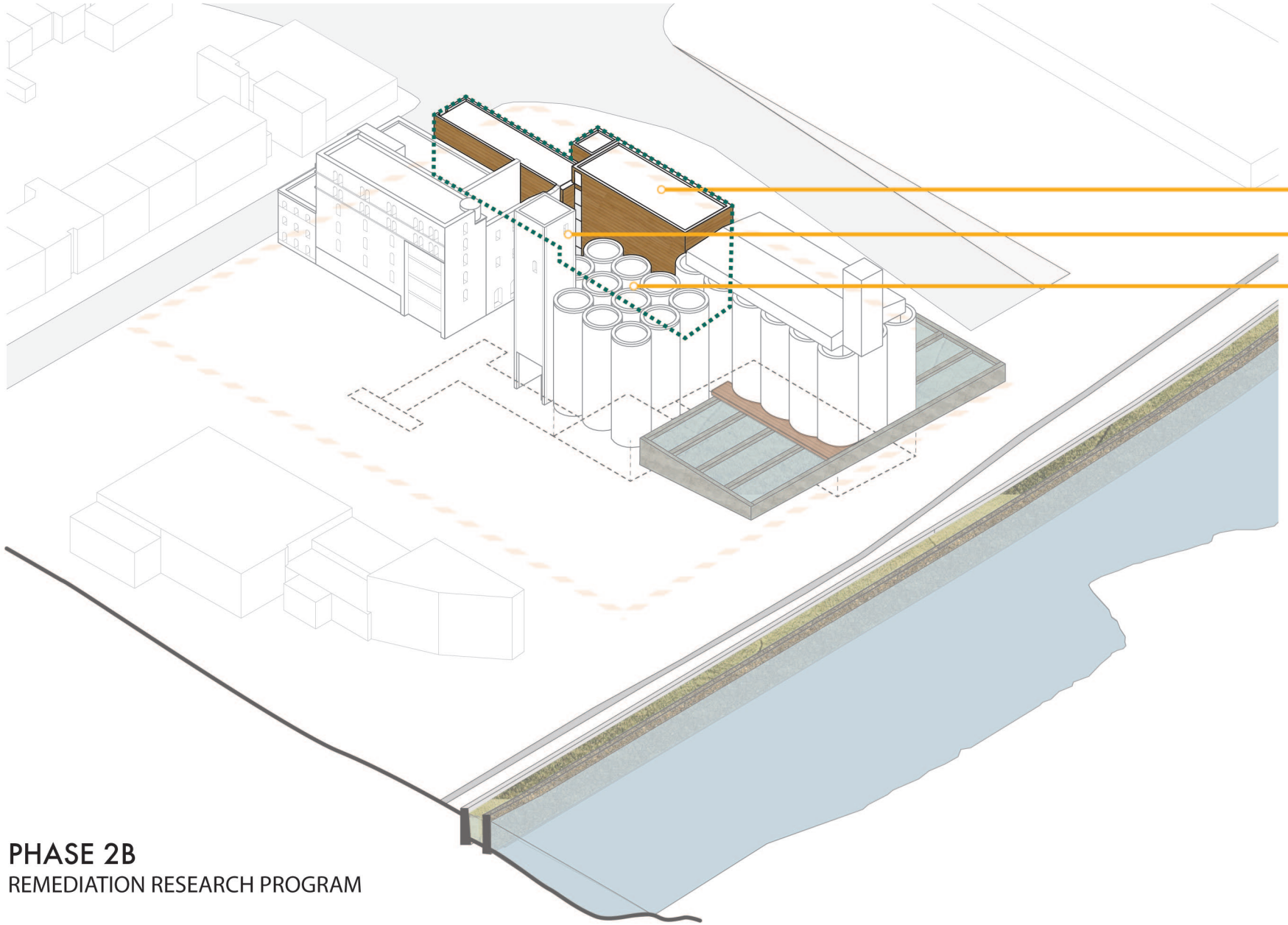
SEDIMENTS REMOVED FROM EACH SEGMENT OF THE CANAL CAN BE TESTED FOR CONTAMINANT PRESENCE AND CONCENTRATION AND STORED INTO THE CONCRETE SILO COMPLEX FOR ADDITIONAL TESTING AND EXPERIMENTATION. SETTLEMENT PONDS SORT SOLID CONTAMINANTS AND SERVE AS TESTING BEDS.



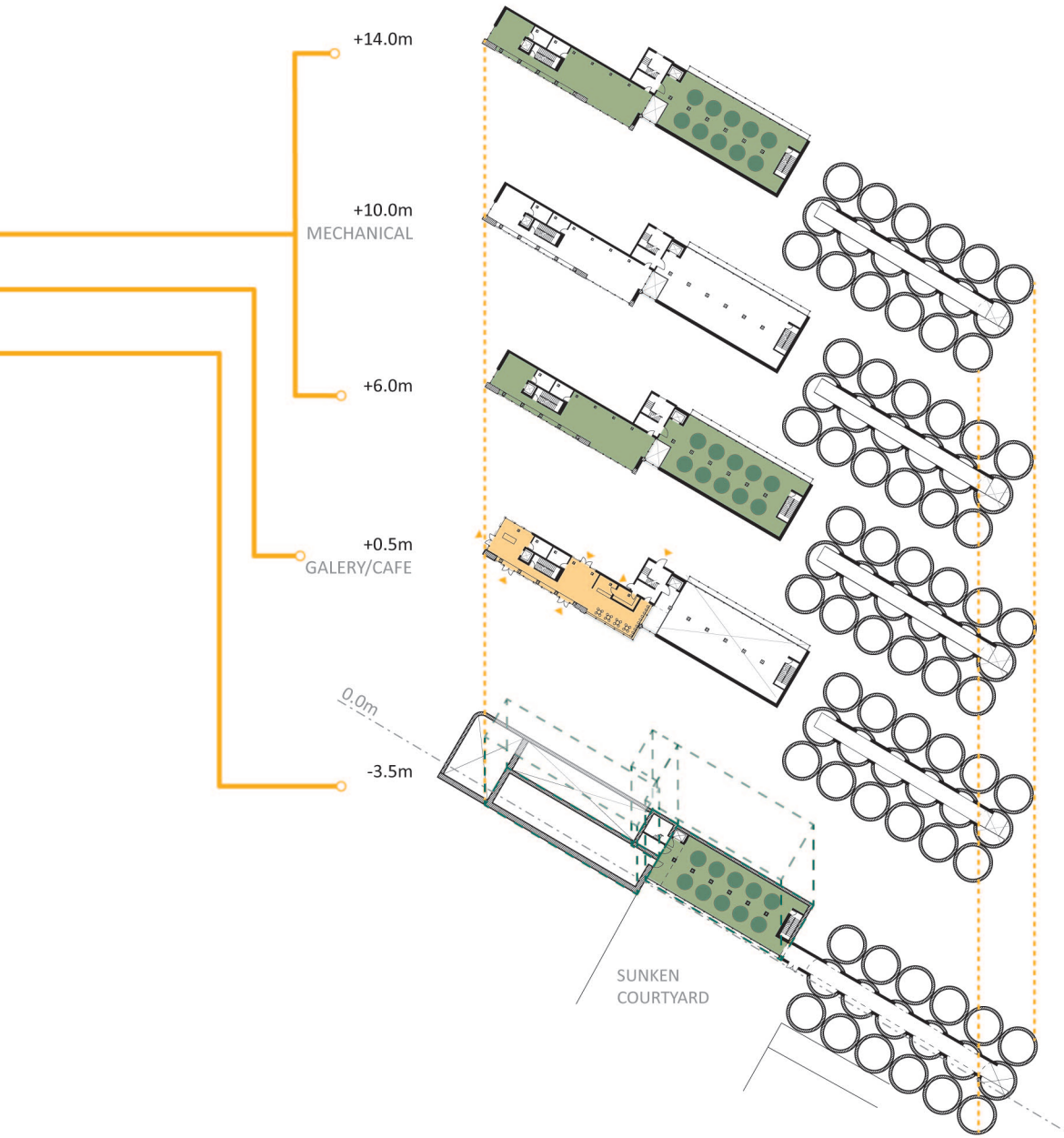
DREDGING AND CONSTRUCTION

REMOVAL OF CONTAMINATED SEDIMENTS FROM THE NORTHERN SHORELINE FOR CONSTRUCTION OF THE GABION WALL SYSTEM.

fig.3.2.25 A diagrammatic image of phase two involving the construction of the doubled canal and the storage of contaminants.



PHASE 2B
REMEDIATION RESEARCH PROGRAM



REMEDIATION RESEARCH LABORATORY

THE STRUCTRUE OF THE FORMER MALTING PLANT ADDITION IS RE-USED, ADDING A NEW FACADE TO RECAST THE IMAGE OF THE FACILITY. THE CONCRETE SILOS ARE USED FOR STORAGE OF CONTAMINATED SEDIMENTS AND WATER, ACCESSIBLE FROM THE LABORATORY SPACES WHERE SORTING AND TESTING CAN DISCOVER DIFFERENT SPECIES AND CHEMICALS FOR REMEDIATION ALTERNATIVES TO ADDRESS EACH SITE.

CAFE/GALLERY

THESE PUBLIC AMENITIES ACTIVATES THE GROUND LEVEL PROVIDING VIEWS TO THE ACTIVE RESEARCH FACILITIES.

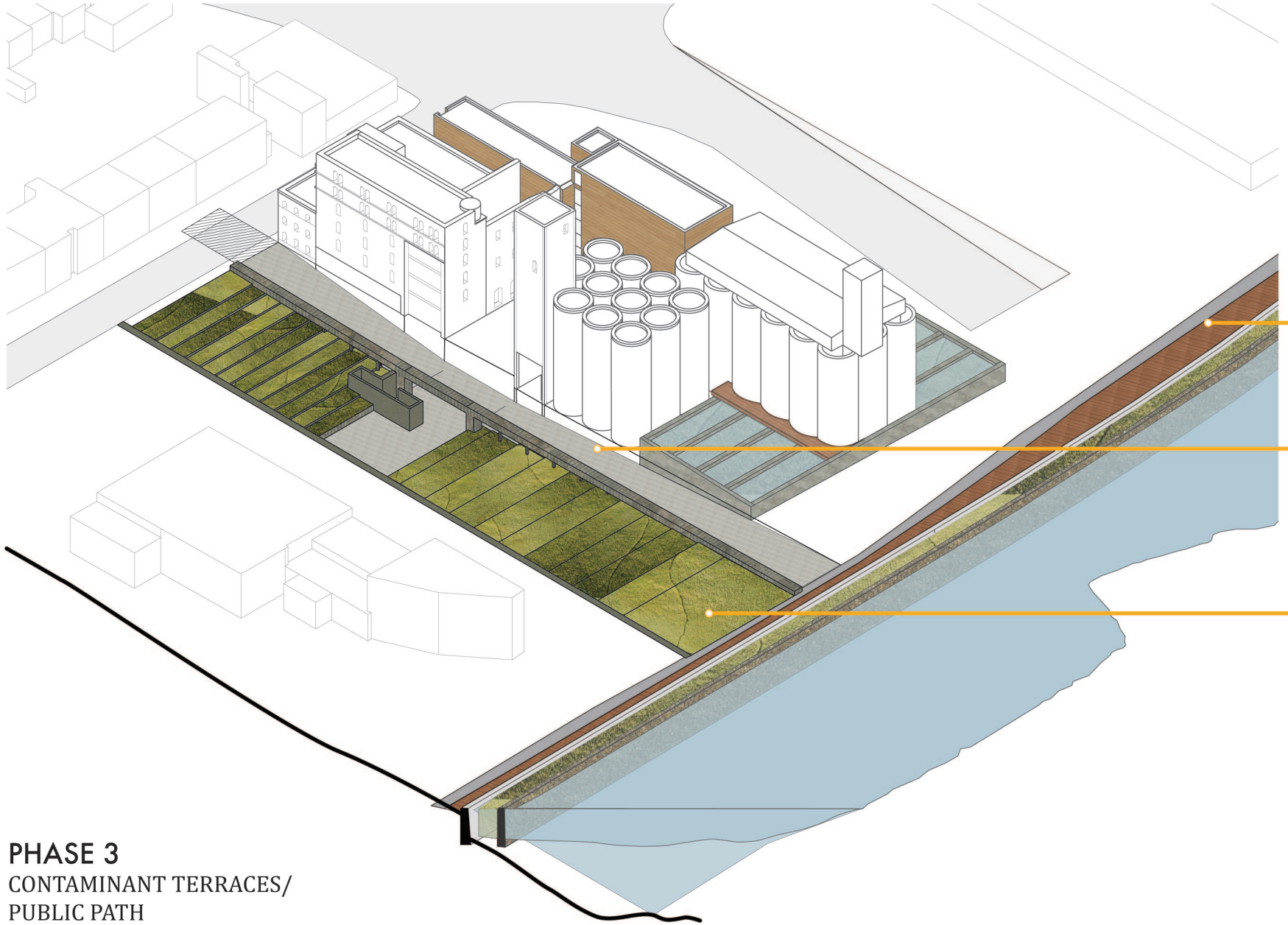
DISPLAY TANKS

REMEDIAL TESTING TANKS CONTAINING THE LEAST VOLITILE SUBSTANCES ARE PLACED ON THE LOWER LEVELS VISUALLY ACCESSIBLE TO THE PUBLIC.

LABORATORY/ADMINISTRATION

PUBLIC AMENITIES

fig.3.2.26 A diagrammatic image of phase two program including the Remediation Research Laboratory.



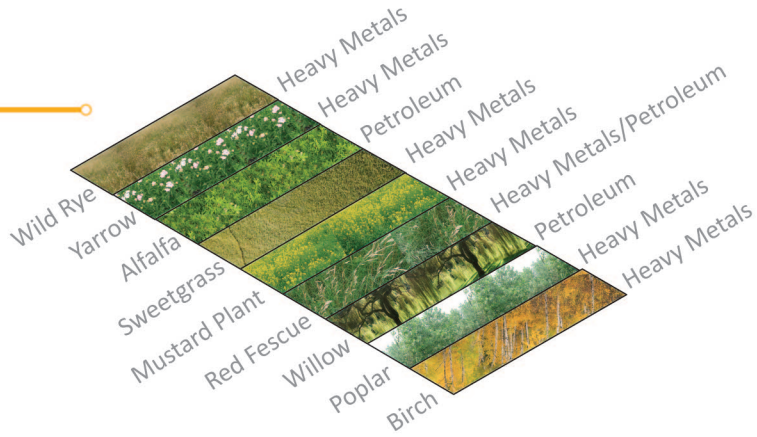
PHASE 3
CONTAMINANT TERRACES/
PUBLIC PATH

PATH EXPANSION

A SPLIT PEDESTRIAN AND CYCLIST PATH ENHANCES THE EXISTING OVERCROWDED PATH NETWORK. THE NEW NETWORK REACHES TO THE CANAL'S EDGE.

PUBLIC PATH

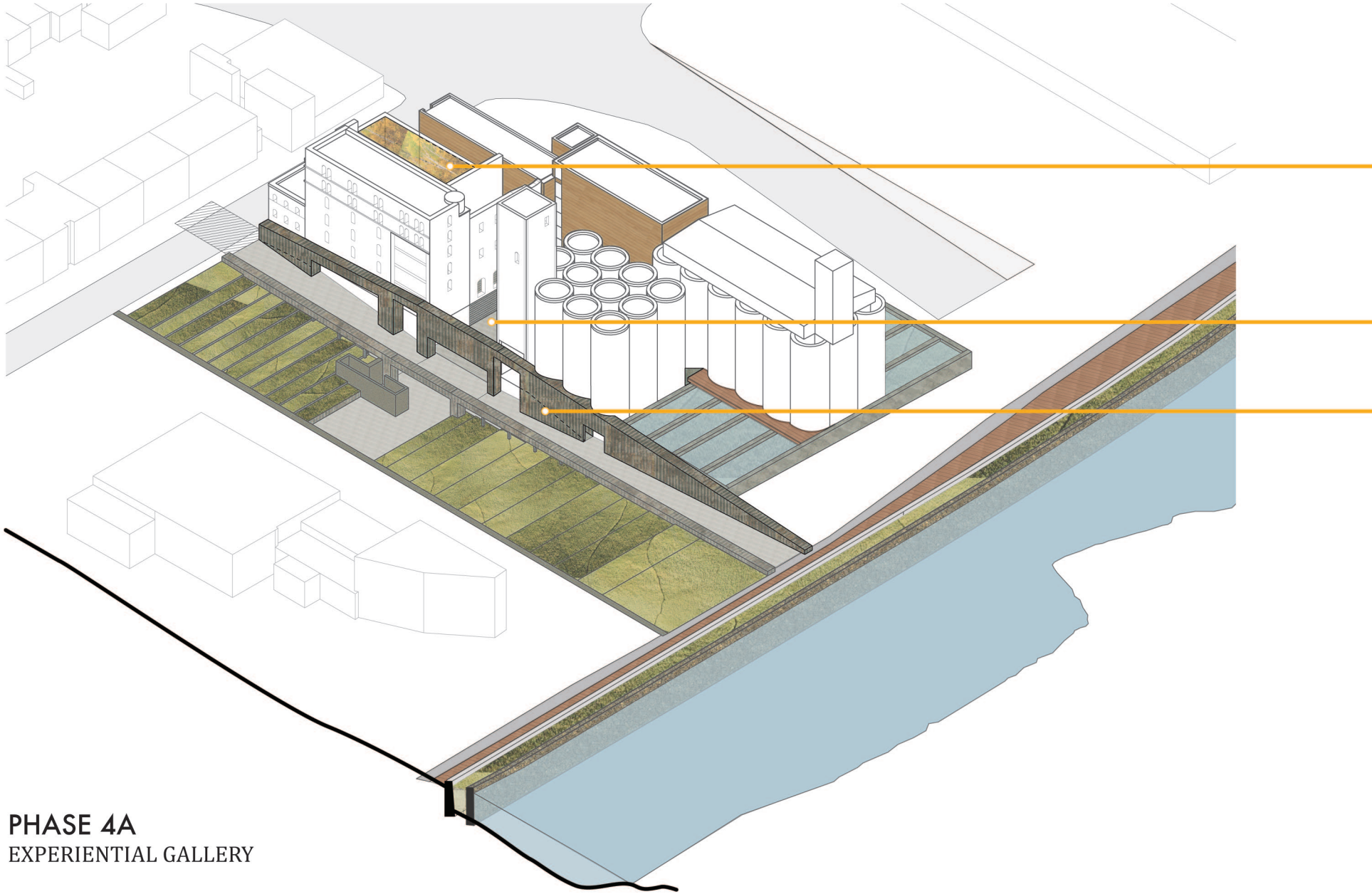
A PUBLIC WALKWAY IS CUT THROUGH THE SITE REVEALING THE DECAY AND TOXICITY WITH ITS DESCENT.



CONTAMINANT TERRACES

PLANTING BEDS ALONG THE PEDESTRIAN PATH REVEAL THE TOXIC CONTAMINANTS IN THE SOIL AS THE PUBLIC PATH DESCENDS.

fig.3.2.27 A diagrammatic image of phase three involving the construction of the phytoremediation gardens.



PHASE 4A
EXPERIENTIAL GALLERY

WILD GARDEN

THE ROOF OF THE CENTRAL BRICK STRUCTURE IS REMOVED TO ENCOURAGE THE ESTABLISHMENT OF SPORADIC NATURAL HABITATION OCCURING ON THE EXISTING ROOFS.

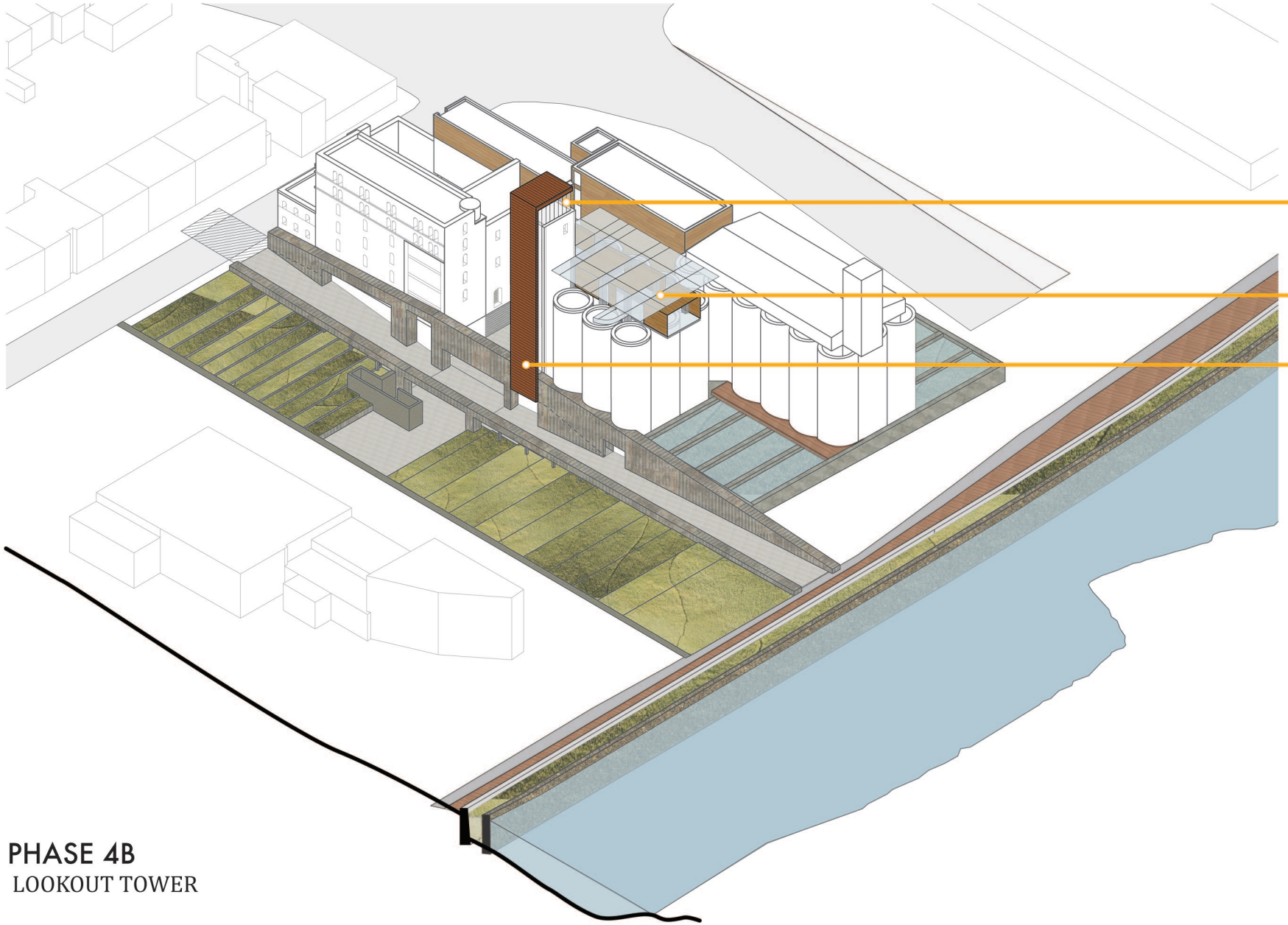
INTERIOR COURTYARD

THE SUNKEN COURTYARD PROVIDES VIEWS TO THE EXISTING STRUCTURES AND NEWLY ADDED PROGRAM. THIS COURTYARD IS THE CENTRAL HUB USED IN WAYFINDING THROUGHOUT THE SITE. STAIRS PROVIDE ACCESS TO THE OPEN AIR WILD GARDEN.

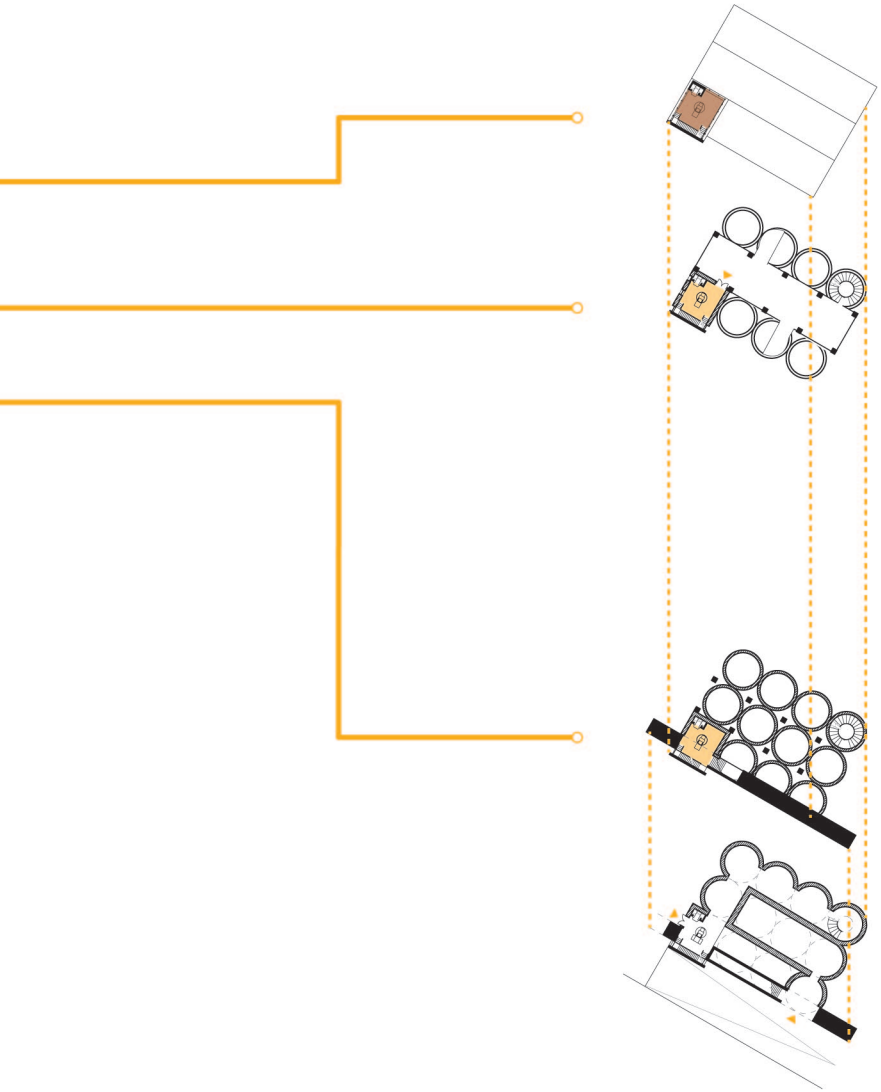
EXPERIENTIAL PATH WALL

THE WALL IS CAST ON SITE USING THE RECYCLED METAL PANEL FACADES DISMANTLED DURING THE DEMOLITION PHASE. THE CONCRETE MOULDS AROUND THE IMPERFECTIONS OF THE FACADES AND ABSORBS THE RUST DISPLAYING A CAST OF THE BUILDINGS THAT HAVE BEEN REMOVED. PERIODIC OPENINGS ALLOW ACCESS TO SITE ENCOURAGING THE VISITOR TO EXPLORE AND IMMERSE THEMSELVES IN THE RUIN.

fig.3.2.28 A diagrammatic image of phase four involving the cut through the site that allows public access to the industrial ruins



PHASE 4B
LOOKOUT TOWER



TOWER LOOKOUT

THE TOP LEVEL OF THE TOWER PROVIDES A LOOKOUT SPACE OFFERING AN INCREDIBLE VIEW OF THE SURROUNDING CITY AND LANDSCAPE.

SILO ROOF

THE COVERED ROOF WALKWAY ABOVE THE CLAY TILE SILOS PROVIDES ACCESS TO THE TOP OF THE SILOS AS WELL AS A PANORAMIC VIEW OF MONTREAL. TWO OUTCROPPING SECTIONS PROVIDE VIEWS,DIRECTED BY FRAMES, TOWARD THE ADJACENT LOCKS AS WELL AS CLOSER VIEWS INTO THE SILOS BELOW.

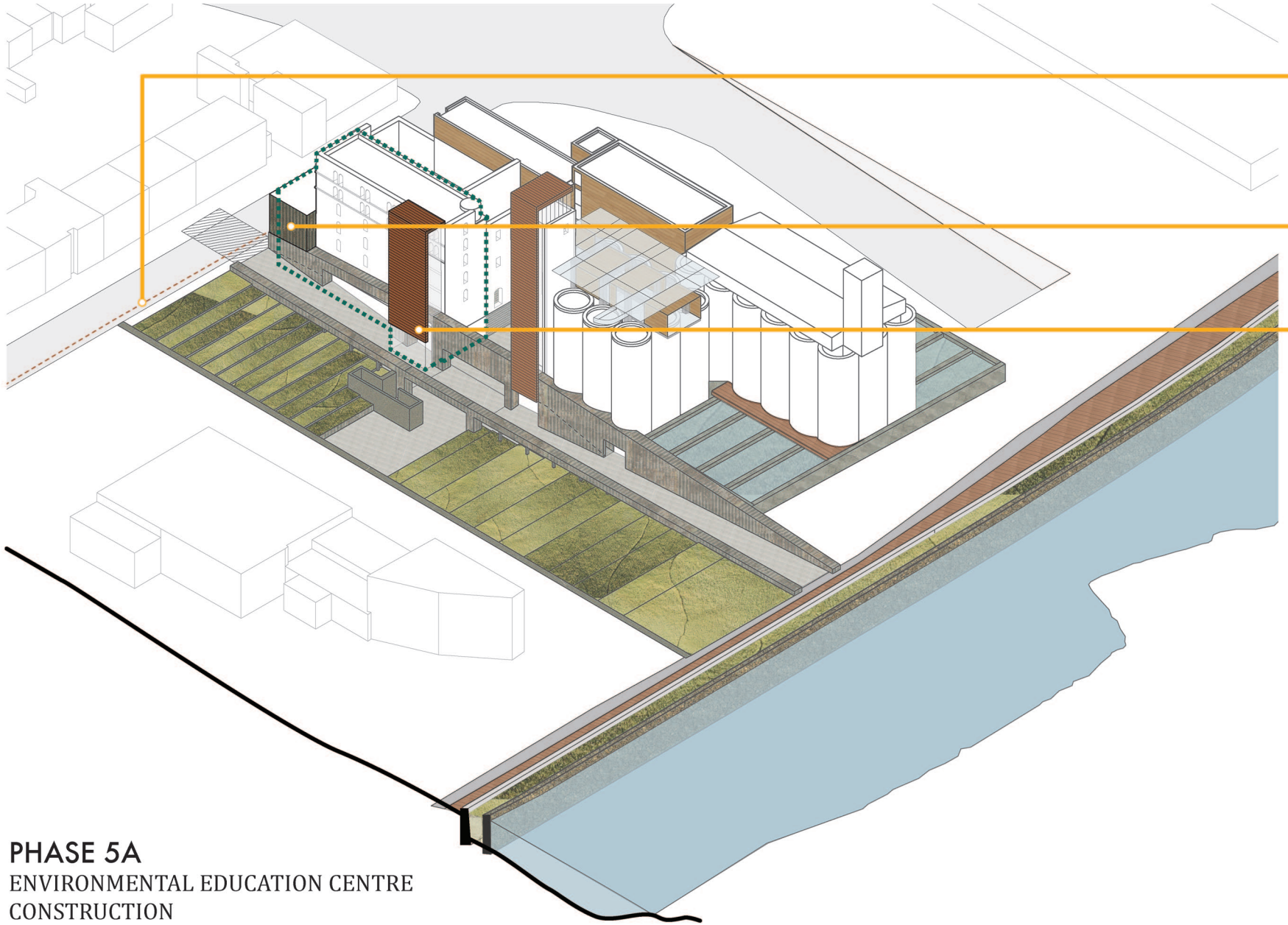
TOWER GALLERY

CONSTRUCTED USING RECYCLED SITE BRICKS, THE GALLERY SPACE GRAFTS ITSELF ONTO THE EXISTING BRICK TOWER - THE HIGHEST STRUCTURE ON THE SITE. THE VERTICALLY STACKED GALLERY SPACES DEPICT THE HISTORY OF THE LACHINE CANAL CORRIDOR THROUGH CARTOGRAPHY AND PHOTOGRAPHS.

LOOKOUT

GALLERY SPACES

fig.3.2.29 A diagrammatic image of phase four program including the tower lookout and silos that encourage site exploration.



PHASE 5A
ENVIRONMENTAL EDUCATION CENTRE
CONSTRUCTION

BIKE LANE

A NEW BIKE LANE INCREASES THE FLEXIBILITY OF THE CYCLIST NETWORK, CONNECTING TO THE PROPOSED TURCOT RAIL YARD DEVELOPMENT CYCLIST PATHS.

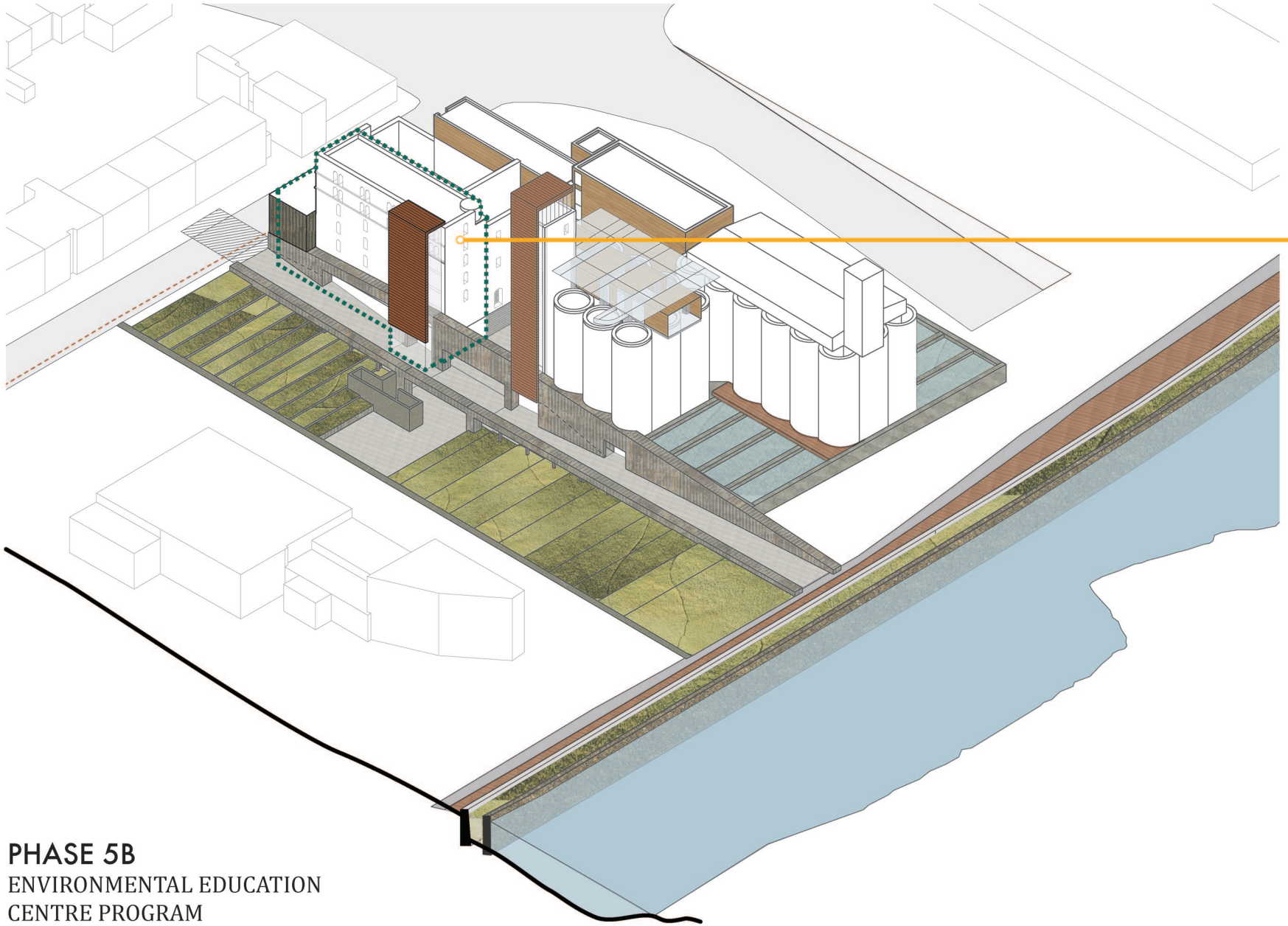
ENVIRONMENTAL EDUCATION CENTRE GALLERY

THE WOOD PANEL CLAD GALLERY SPACE EXTENDS OUT PAST THE EXISTING BRICK BUILDING TO CONNECT THE SURROUNDING COMMUNITY WITH THE EDUCATION PROGRAM WITHIN.

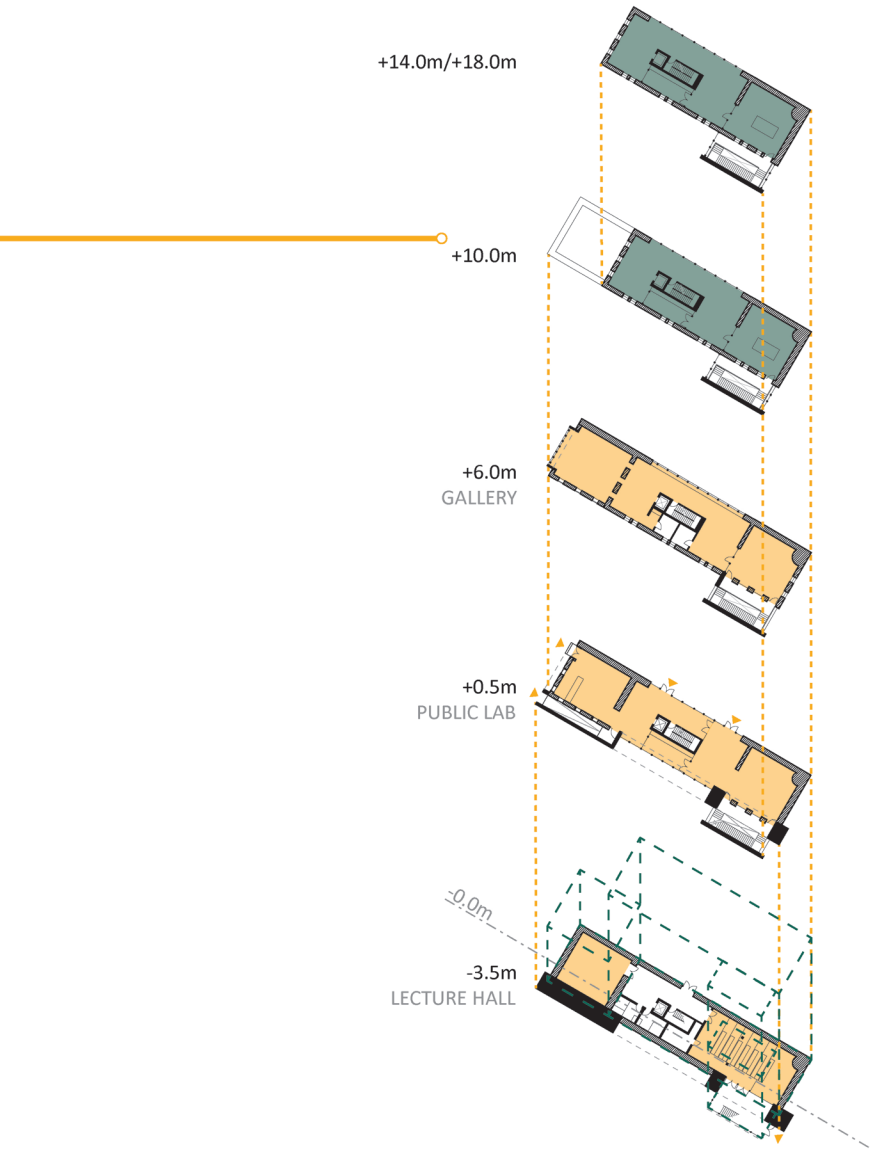
ENVIRONMENTAL EDUCATION CENTRE CIRCULATION

THE RECYCLED BRICK FACADE MARKS THE VERTICAL CIRCULATION FOR THE ENVIRONMENTAL EDUCATION CENTRE ENTERED THROUGH THE SUNKEN COURTYARD.

fig.3.2.30 A diagrammatic image of phase five involving the construction of gallery spaces and circulation routes for the Environmental Education Centre.



PHASE 5B
ENVIRONMENTAL EDUCATION
CENTRE PROGRAM



ENVIRONMENTAL EDUCATION CENTRE

THIS CENTRE PROVIDES A SERIES OF CLASSROOMS, LECTURE SPACES, AND GALLERIES TO EDUCATE THE PUBLIC ABOUT BIOREMEDIATION STRATEGIES AND CANAL CLEAN-UP EFFORTS. PROGRAM ALSO INCLUDES OFFICE SPACE FOR VOLUNTEER ORGANIZATIONS THAT ASSIST IN MAKING REPARATIONS TO THE CANAL EMPLOYING NEIGHBOURHOOD RESIDENTS WHO ARE OTHERWISE UNEMPLOYED.

VOLUNTEER OFFICES

EDUCATIONAL CENTRE

fig.3.2.31 A diagrammatic image of phase five program including the addition of the Environmental Education Center.

WAYFINDING

The path that circumnavigates the site is the key landmark that, along with its porosity, creates an ease of wayfinding throughout the site. Connecting the canal path to the street, the experiential path and its walls permeate the program of the site through the physical cuts and views. The courtyard and gardens at the heart of the proposal act as yet another means of wayfinding that, through access and views, engage the visitor in exploring the site to understand the complexity, history, and future of the canal corridor and its ruins.

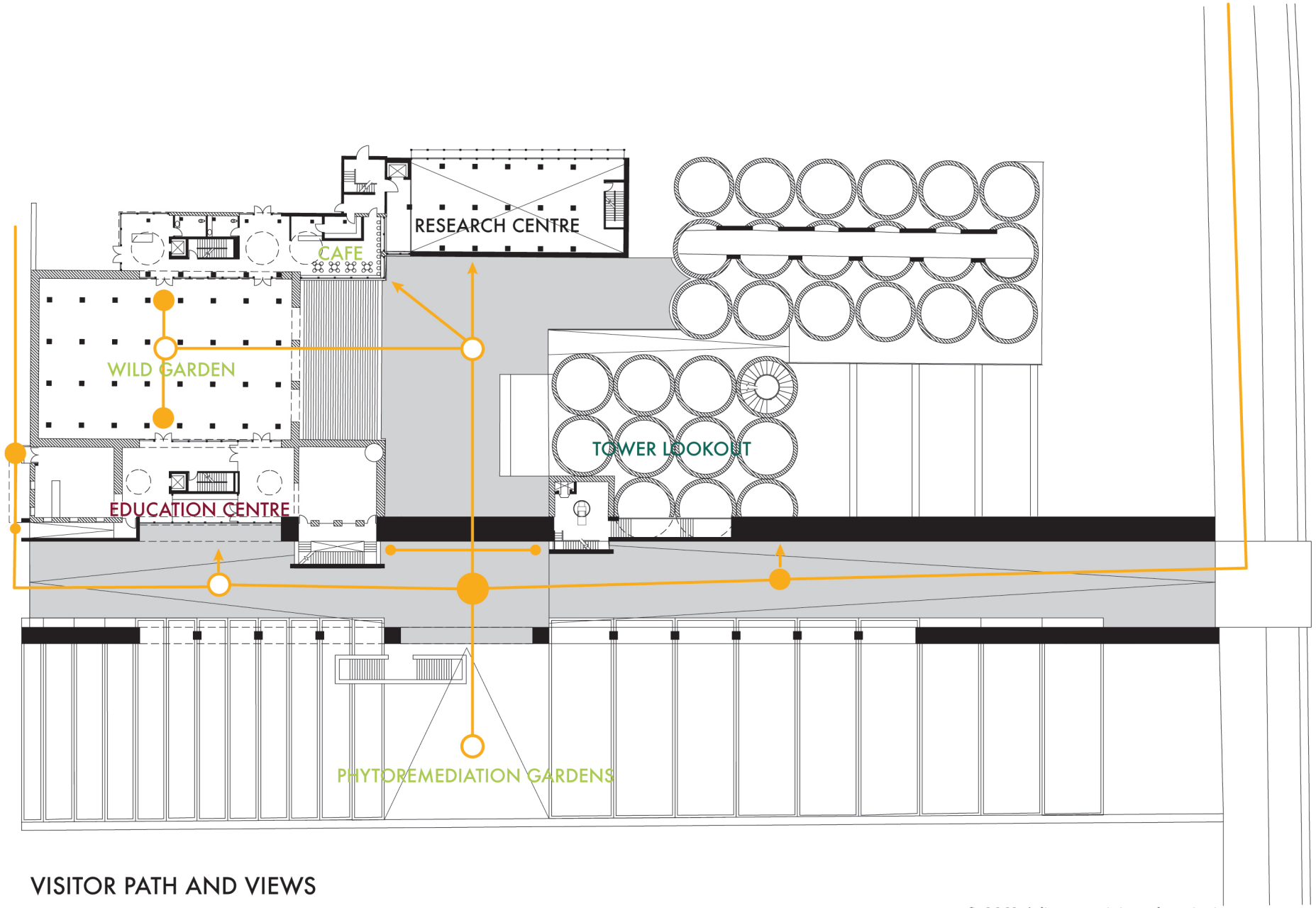
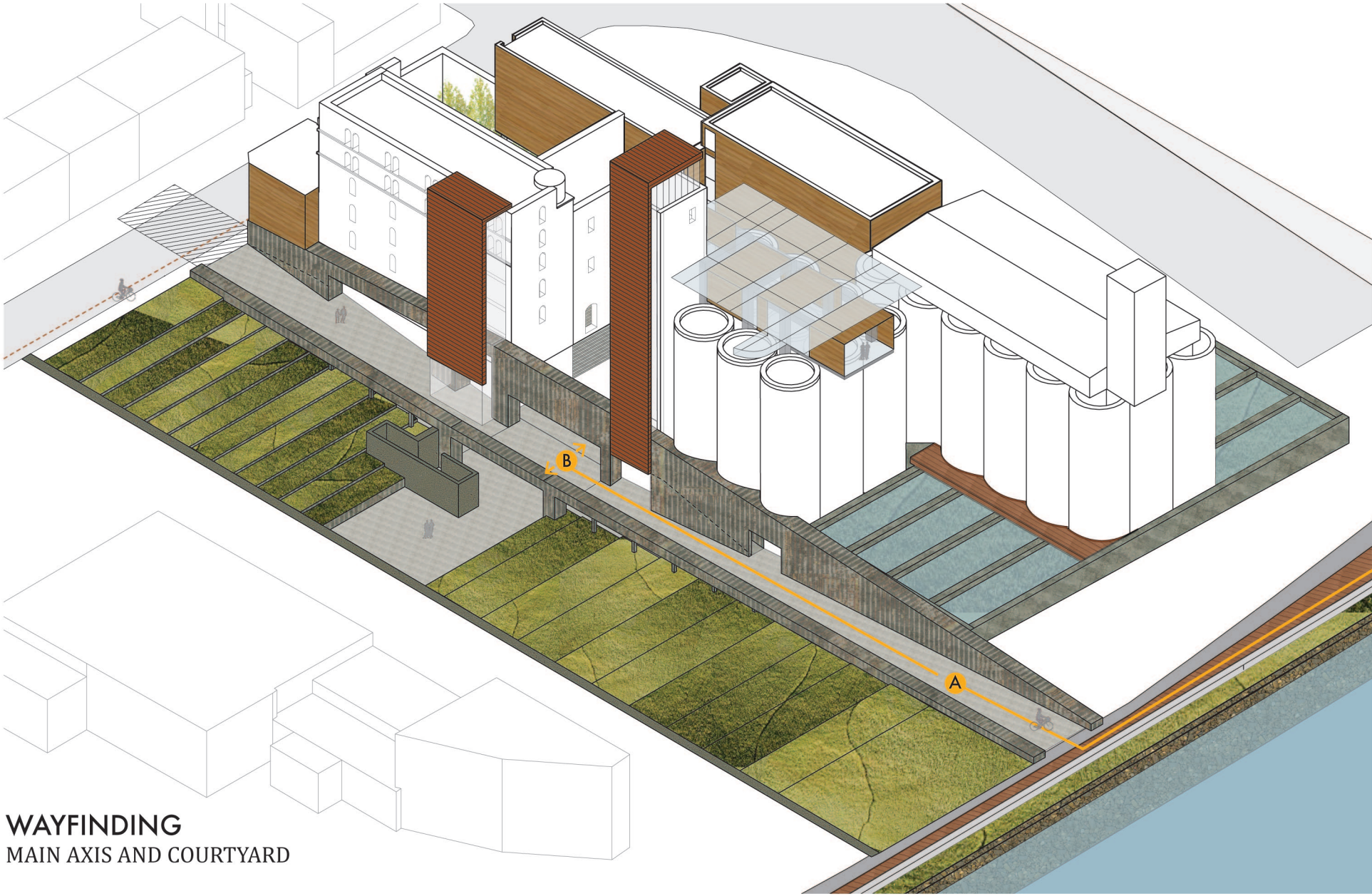


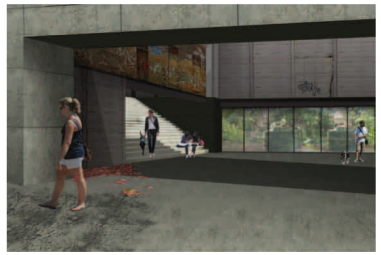
fig.3.2.32 A diagrammatic image key axis, views, and nodes that guide the visitor through the site, encouraging independent exploration.

fig.3.2.33 (Next Page) A diagrammatic image of wayfinding along the main axis.



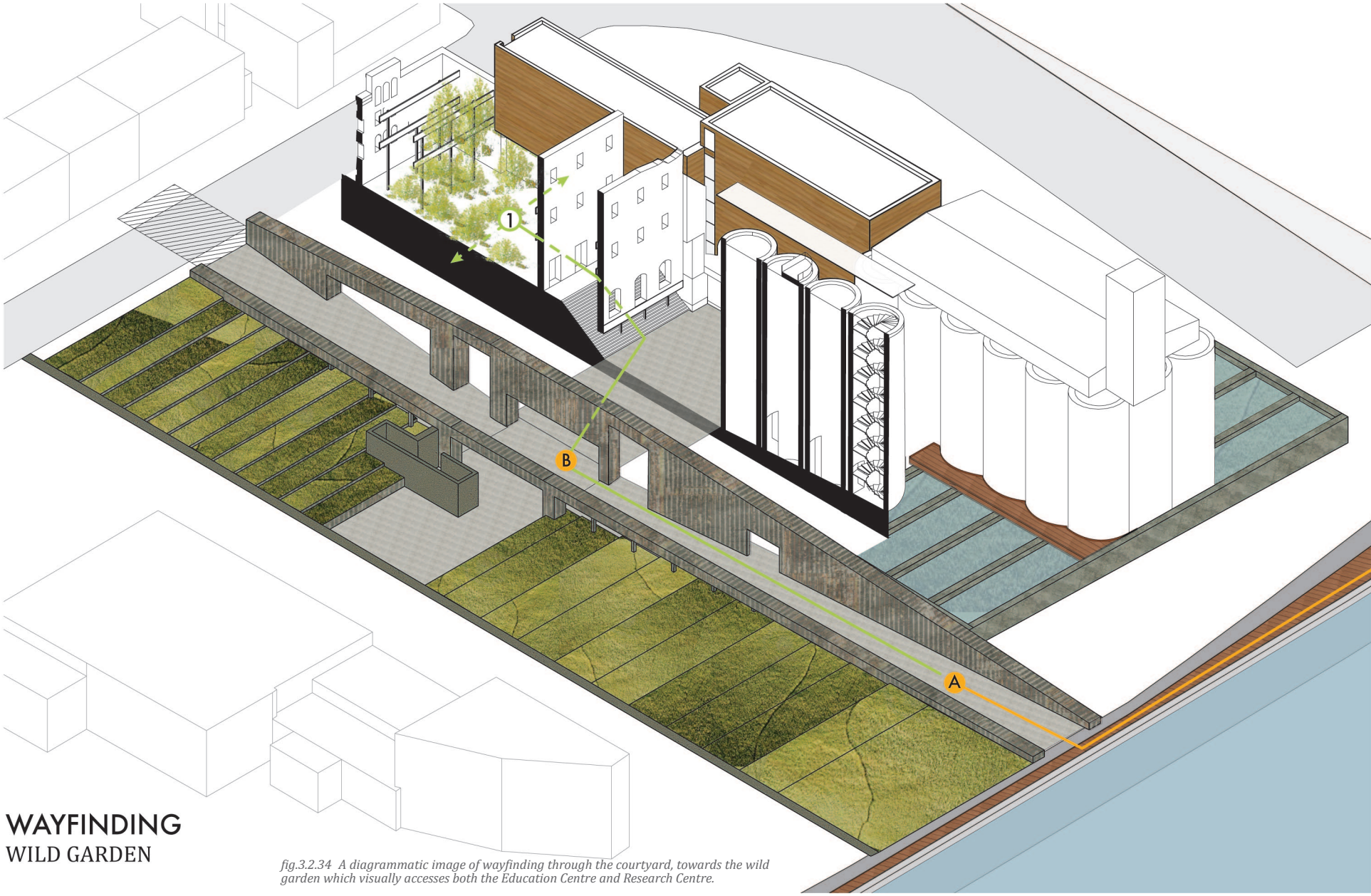
WAYFINDING
MAIN AXIS AND COURTYARD

B COURTYARD ENTRANCES
PHYTOREMEDIATION LABS



A PATH ENTRANCE

B COURTYARD ENTRANCES
PHYTOREMEDIATION GARDENS

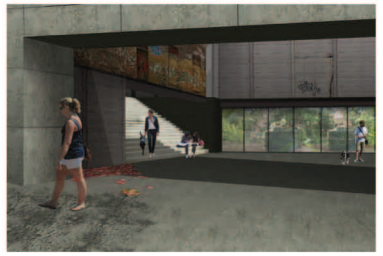


WAYFINDING
WILD GARDEN

fig.3.2.34 A diagrammatic image of wayfinding through the courtyard, towards the wild garden which visually accesses both the Education Centre and Research Centre.

DEMONSTRATION LABS ◄ - - - ► CAFE/REMEDIATION CENTRE

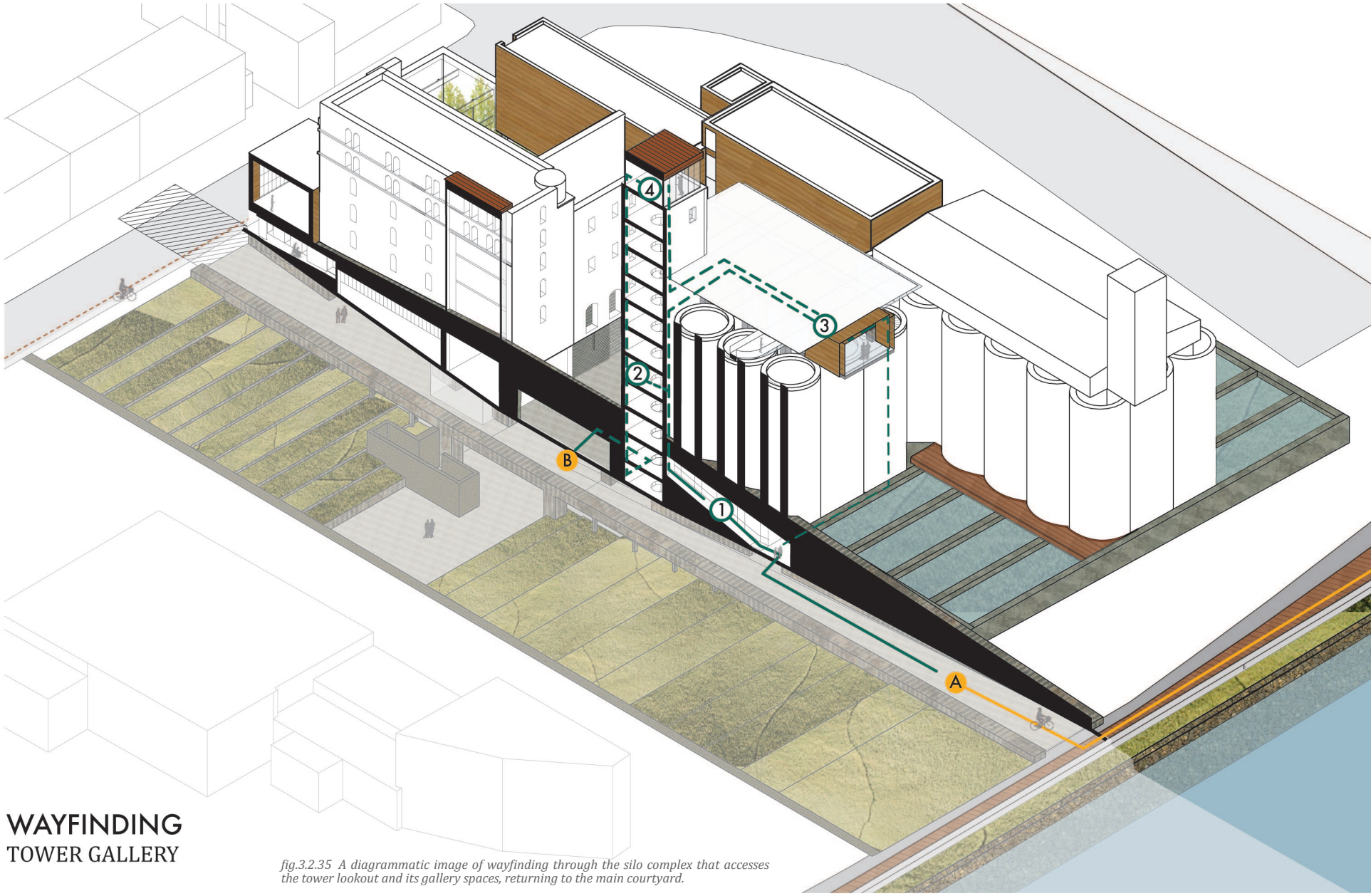
1 WILD GARDEN



B COURTYARD ENTRANCES
PHYTOREMEDIATION LABS

B COURTYARD ENTRANCES
PHYTOREMEDIATION GARDENS

A PATH ENTRANCE

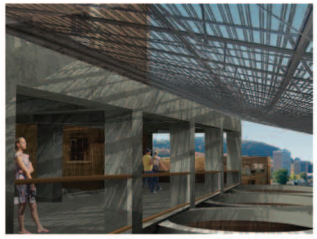


WAYFINDING
TOWER GALLERY

fig.3.2.35 A diagrammatic image of wayfinding through the silo complex that accesses the tower lookout and its gallery spaces, returning to the main courtyard.

4 TOWER LOOKOUT

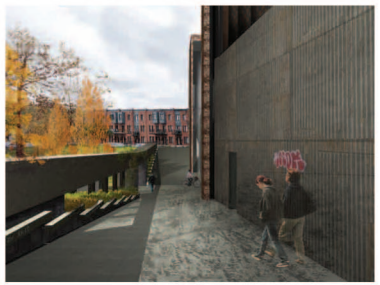
3 SILO LOOKOUT



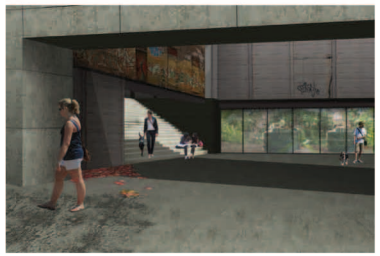
2 TOWER GALLERY

1 SILO PATH

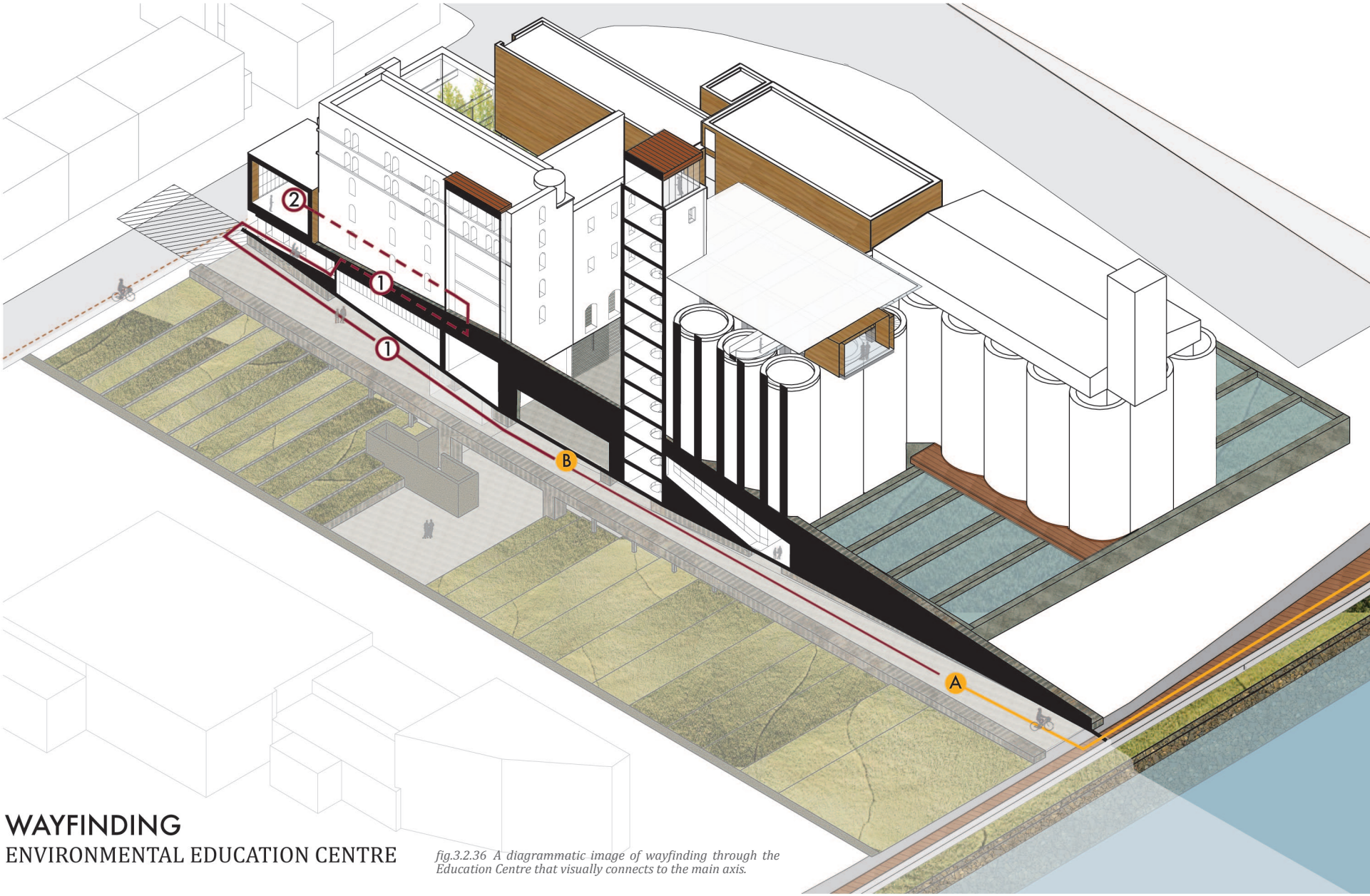
A PATH ENTRANCE



B COURTYARD ENTRANCES
PHYTOREMEDIATION LABS



B COURTYARD ENTRANCES
PHYTOREMEDIATION GARDENS



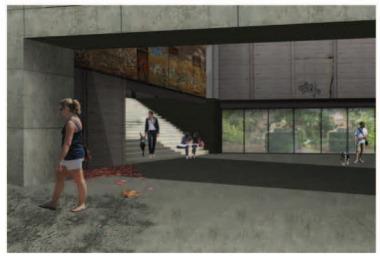
WAYFINDING

ENVIRONMENTAL EDUCATION CENTRE

fig.3.2.36 A diagrammatic image of wayfinding through the Education Centre that visually connects to the main axis.

2 ENVIRONMENTAL EDUCATION GALLERY

1 PUBLIC DEMONSTRATION LAB



B COURTYARD ENTRANCES PHYTOREMEDIATION LABS

B COURTYARD ENTRANCES PHYTOREMEDIATION GARDENS

A PATH ENTRANCE

The site of the former Canada Malting Plant, now Environmental Education Centre, Remediation Centre, and Tower Gallery, behaves as a living museum of the development of Montreal. The Education and Remediation Centres both provide an understanding of the ecology of the place, the composition of its landscape, and the effects of contamination. The Tower and silo complex, through its galleries and lookout spaces, provide an understanding of the developing city fabric and manufactured landscapes through a visual connection. This observation tower facilitates a perpetual updating of the understanding of the site and surrounds as new developments and remediation efforts take hold. Its inevitable evolution as a living museum addresses the constant development and change through time that can be added to with the changing city and landscape.

The developing landscape of the site is in itself an attracting feature as the evolving species – whether through natural habitation or encouraged planting from remediation research – provide a changing palette of plant life. Throughout the seasons these new plantings constantly change. Their colours, scents, and textures are in constant flux, renewing the garden spaces with each visit. The program of the site and its landscape perpetuate its relevance to the future as a museum to understand the city, its landscape, and its periphery of industry.

fig.3.2.37 (Opposite Page) Rendering of the Lachine Canal Corridor Path, showing the ruin and the canal as part of a naturally evolving 'living museum'.

CONCLUSION

Addressing the industrial remnants of the past, whether at the scale of infrastructure or a single building, is essential to re-insert them into a dialogue with its past, present, and future potential. Their relevance to the inevitable cycles of birth and decay are timeless, exposing our fear and abhorrence made palpable by our outmoded machines. How we re-interpret these technological landscapes inevitably impacts our perceptions of the industrial ruin and what is deemed 'wasteland', challenging commonly held conceptions.

The chaotic and uncontrollable nature of the industrial ruin in decay provides a direct commentary, through its preservation, on society. They embody a sense of a living museum, constantly changing towards its inevitable erasure. These landscapes of industry serve not only to critique the orderly city they inhabit, but the motivations which led to their creation.[1] It is for this reason that the these relics have a vast importance in the greater dialogue of our productive history as well as our rapid obsolescence regardless of the potential for reuse. The integration of the ruin defies the culture of dismissal, content to destroy the wastelands that bear the traces of our toxic behaviour.

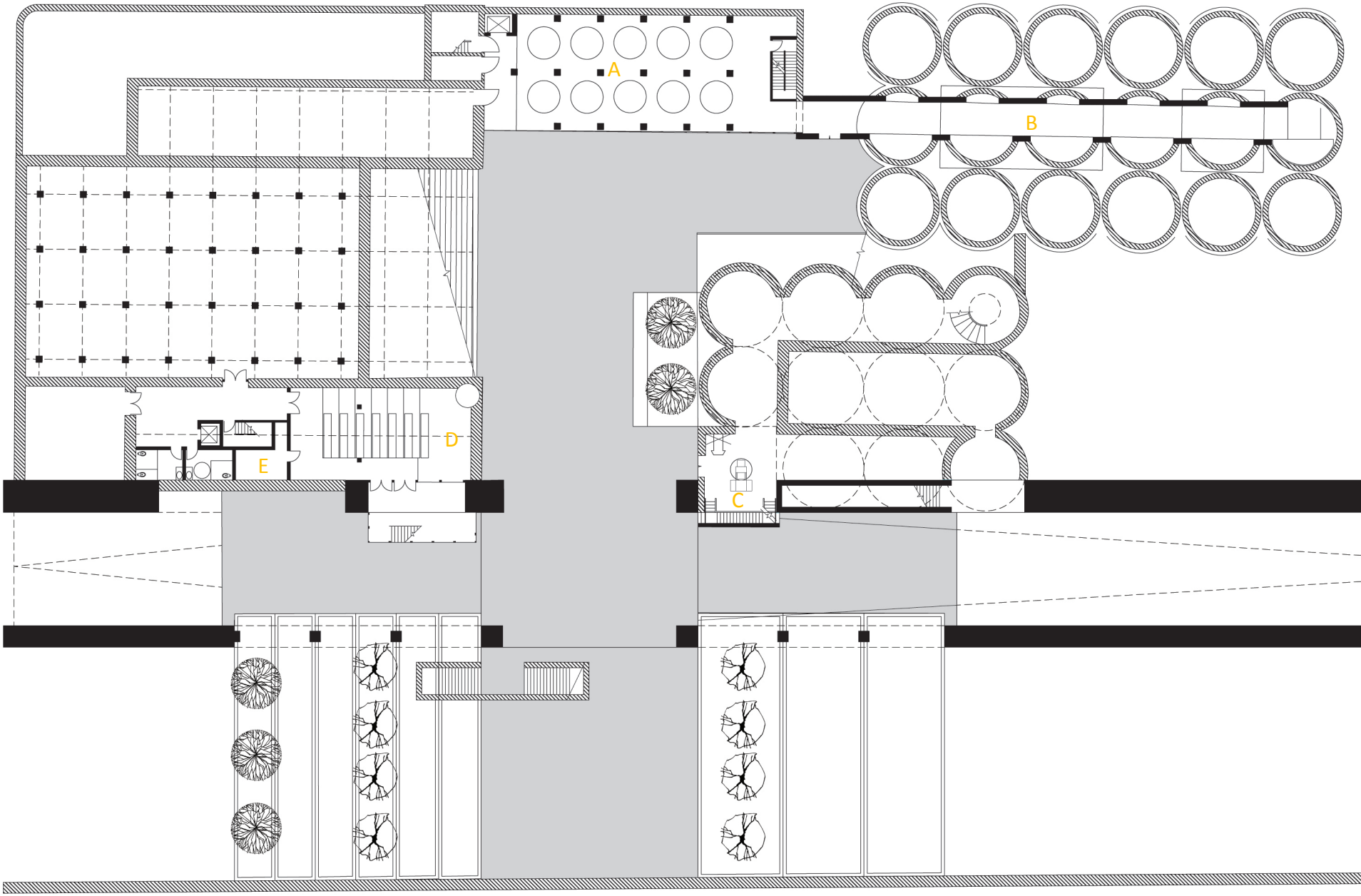
Though the design proposal seeks to address current issues facing industrial derelict spaces of the Lachine Canal, the eventual evolution of the site will yet again dictate new problems to be faced. Though the proposed program and phasing will take many decades to complete, the eventual decay of the artifact is inevitable. The act of reuse participates in the evolution of the palimpsest, however, it acknowledges that the site will eventually cease to function with its proposed program, requiring the addition of new life and purpose. Adaptive reuse is dependant on remaining residues of the site and how they may be interpreted by what we deem of value. This responsive methodology places the proposal into a dialogue with the meaning and perception of obsolescence.

The abandoned industry of the Lachine Canal is merely a single example of the numerous post-industrial landscapes around the globe that have been left derelict. A global economic shift has caused the development of numerous post-industrial landscapes, abandoning former industrialized cities in favour of new territory. This great migration leaves behind vast voids of stagnation where once production dependant neighbourhoods flourished. When left inactive, these voids are reminiscent of the transitory nature of technology, abandoning the outmoded landscapes it inhabited for new economic opportunity. In the wake of profit inevitably lingers the damage caused by contaminated remnants that science and industry currently have insufficient knowledge to repair. In Canada alone billions of dollars must be spent simply to address the toxicity of publicly owned sites, let alone remediate them.[2] The funds for this massive undertaking are beyond the scope of our current budget and would take centuries to complete adopting current methods.[3] The toxicity left behind, the inherent death of the production cycle, connects us to places of novel industrialization where new industry takes hold. It is in our obsolescent landscapes where the ability to critique current methodologies of production resides, making apparent the ramifications of industry and the dire need for a responsibility towards the landscape and culture they affect.

It has become common in the news to hear of the negative impacts of industrial operation. Oil spills, capping landfills, and abandoned mines frequently occur, questioning our perception of these industries of convenience. Though seemingly distant, the impact on the greater network of living systems far outreaches common conceptions. The affect of contaminants spread far beyond their initial bounds as is seen by the everyday manifestations of waste and toxicity, breaching the regulated operations of the city. However, beyond the negative impacts of industry, lies motivation spurred by human achievement. The ruins of industry are a testament to this through their powerful scale, sensory wonder, and the processes which they once productively housed.

Industrial ruins sublimely bear witness to the dichotomies of toxicity and achievement. Through their palimpsest of layers they convey multiple stories and perceptions invaluable to our understanding of their history. For these reasons, the ruins of industry embody the catalyst of change that incite imaginative thought, public perception, and a critical knowledge of the productive process. They relate, beyond their physical bounds, to the greater dialogue of post industrial culture, making them invaluable to the formation of the city and society.

APPENDIX A ADDITIONAL DRAWINGS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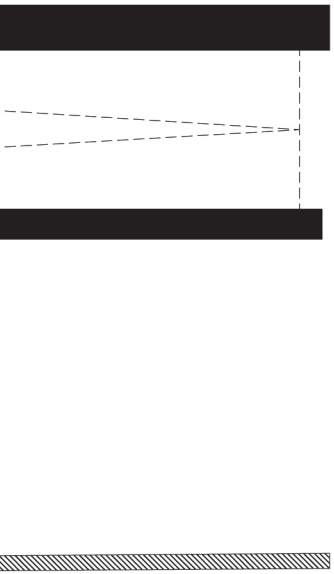


SUNKEN COURTYARD LEVEL
1:500

A RESEARCH CENTRE TESTING TANKS

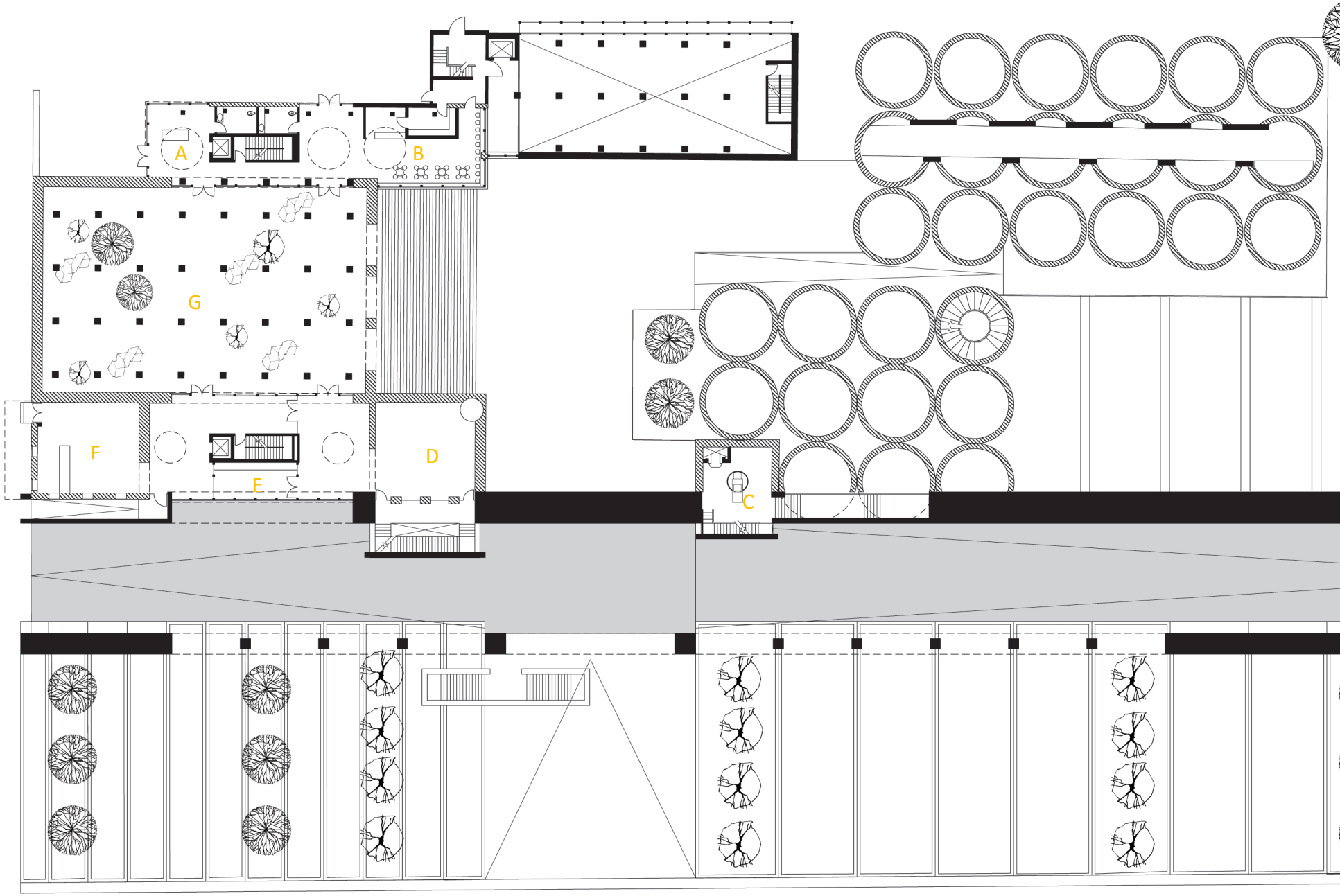
B STORAGE SILOS MAINTENANCE HALL

C LOOKOUT TOWER LOBBY

D LECTURE HALL

E AV ROOM

fig.4.1.1 Sunken Courtyard Level Plan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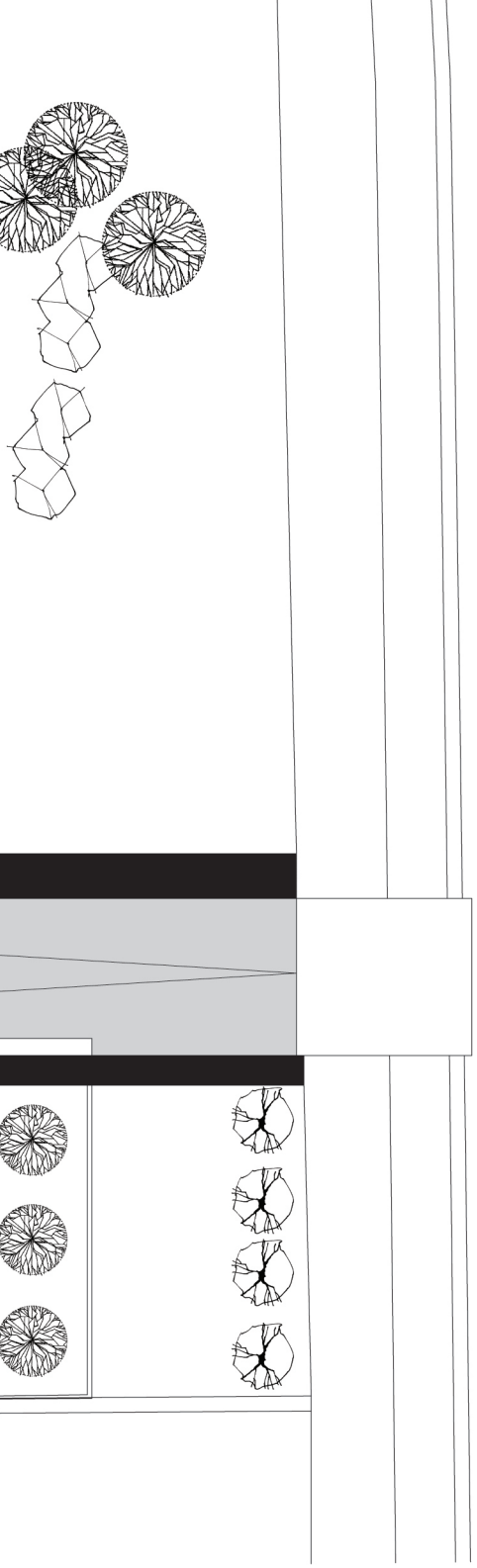


STREET LEVEL
1:500

A RESEARCH CENTRE LOBBY

B CAFE

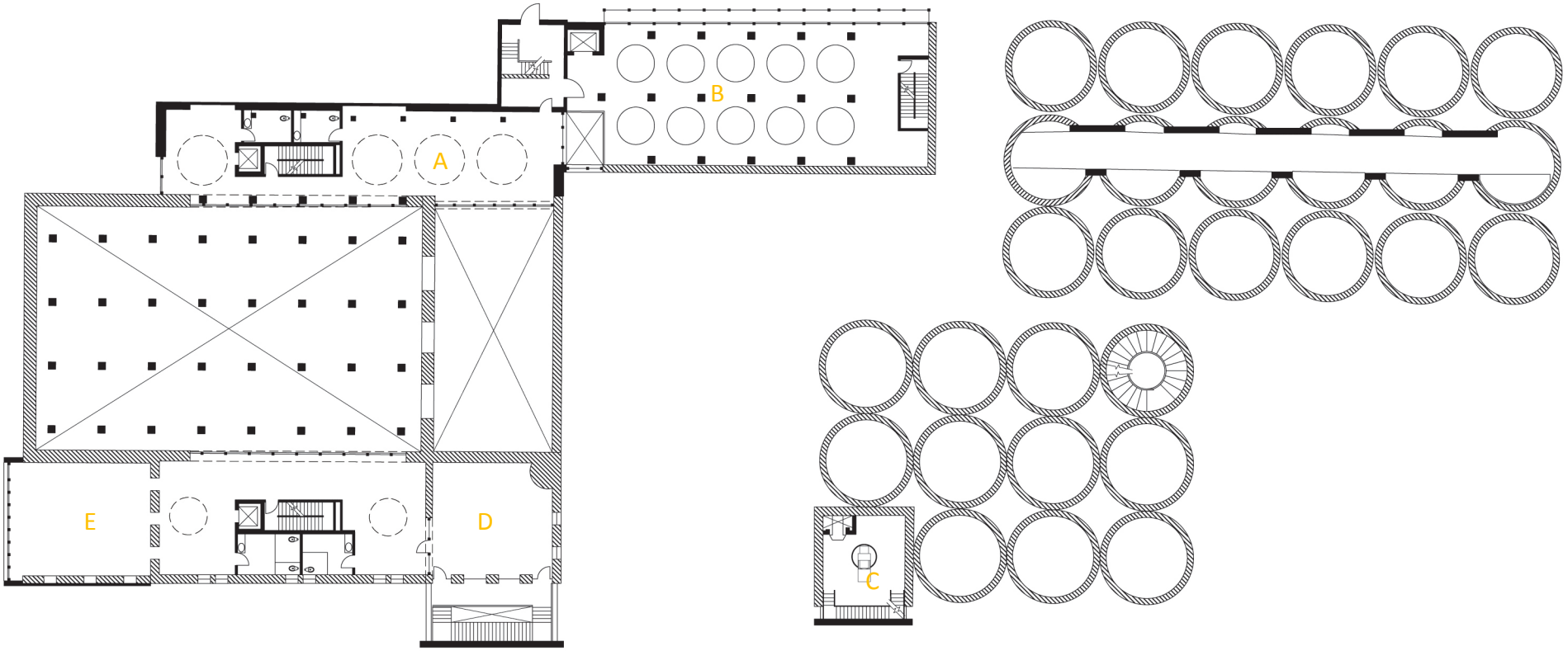
C LOOKOUT TOWER HISTORICAL GALLERY

D CLASSROOM/GALLERY

E DEMONSTRATION LAB

F EDUCATION CENTRE LOBBY

fig.4.1.2 Street level plan.


A
B
C
D
E

A RESEARCH CENTRE LABS

B RESEARCH CENTRE TESTING TANKS

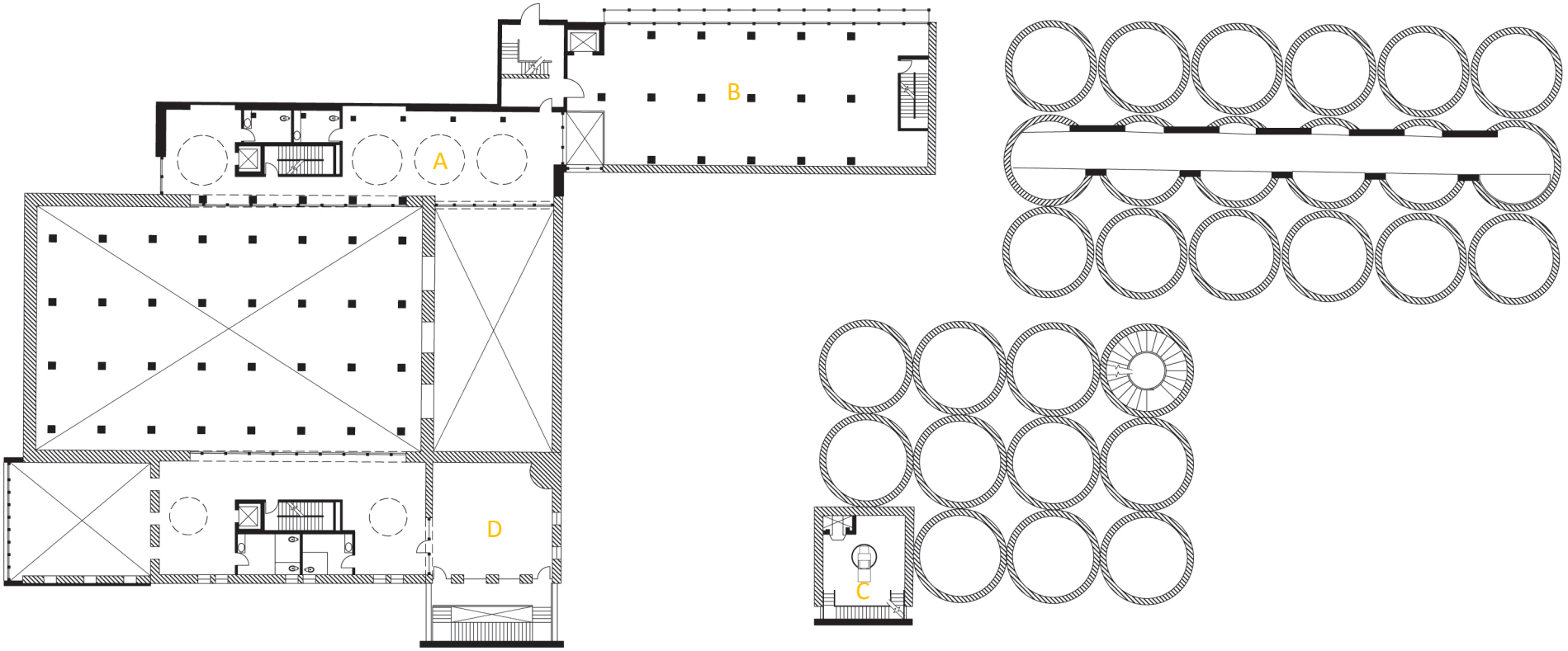
C LOOKOUT TOWER HISTORICAL GALLERY

D CLASSROOM

E GALLERY

+6m
1:500

fig.4.1.3 +6m plan.


A
B
C
D

A RESEARCH CENTRE LABS

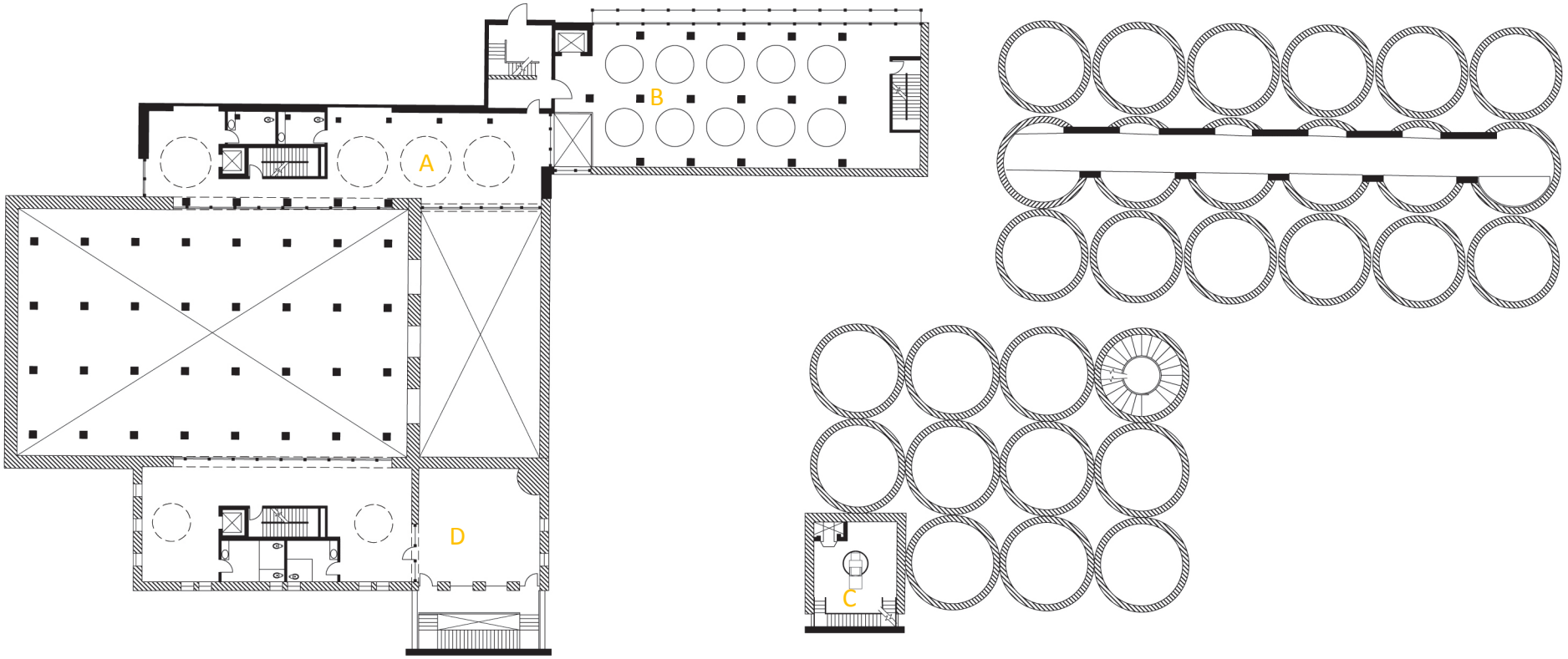
B MECHANICAL FLOOR

C LOOKOUT TOWER HISTORICAL GALLERY

D VOLUNTEER OFFICES

+10m
1:500

fig.4.1.4 +10m plan.


A
B
C
D

A RESEARCH CENTRE LABS

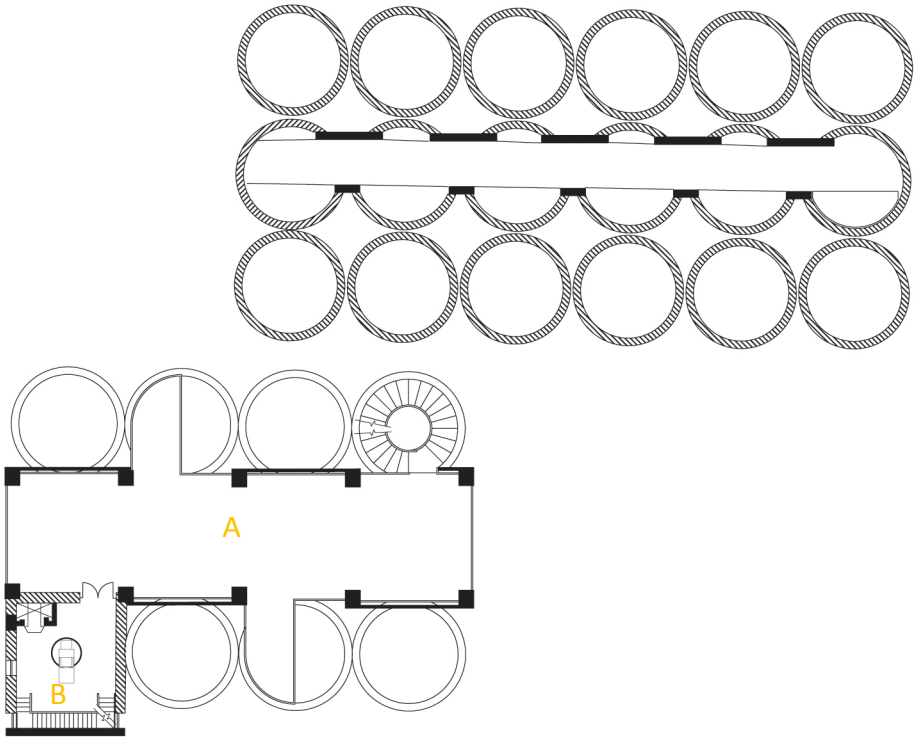
B RESEARCH CENTRE TESTING TANKS

C LOOKOUT TOWER HISTORICAL GALLERY

D VOLUNTEER OFFICES

+13.5m/+17.5m/+20.5m
1:500

fig.4.1.5 +13.5m/17.5m/20.5m typical plan.



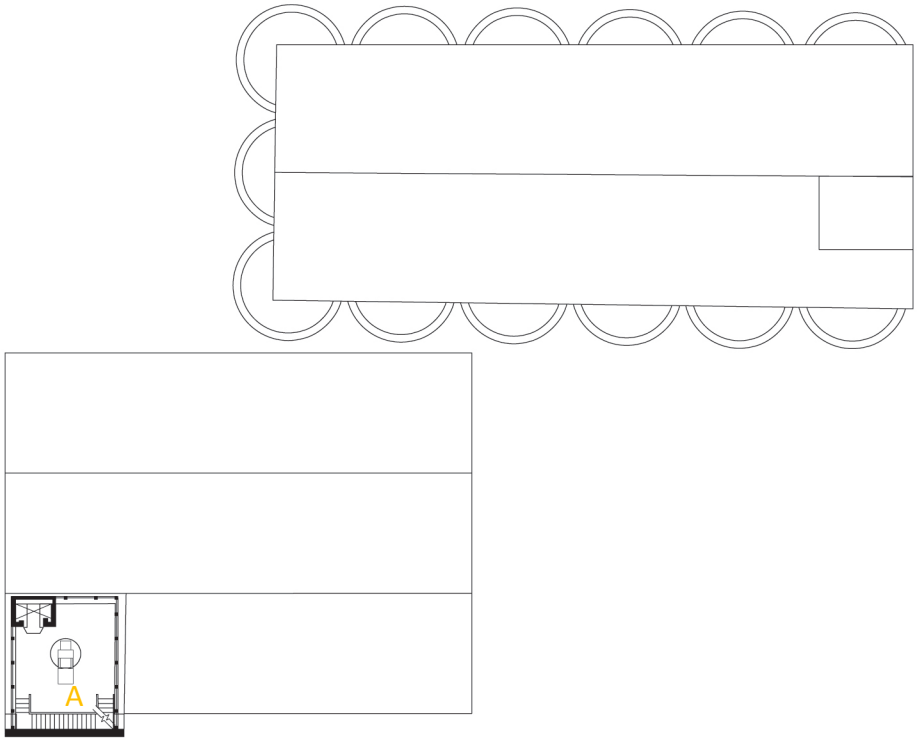
A SILO LOOKOUT

B LOOKOUT TOWER HISTORICAL GALLERY

SILO LOOKOUT LEVEL

1:500

fig.4.1.6 Silo Lookout plan.



A TOWER LOOKOUT

TOWER LOOKOUT LEVEL

1:500

fig.4.1.7 Tower Lookout plan.

APPENDIX B ADDITIONAL PRECEDENTS

fig.4.1.8 Ningbo History Museum perspective.

fig.4.1.9 Ningbo History Museum recycled material facade.

NINGBO HISTORY MUSEUM

This history museum in Ningbo, China makes use of the historic materiality of the village that once resided on the site. As part of a vast economic expansion project, the communities in the area were razed to make way for new government projects.[1] The recycled materials of the former communities manifest the layers of history of the site into a built form that stands as a monument to the culture and development of the place.

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1. Wöhler, Till *'Ningbo Museum by Pritzker Prize Winner Wang Shu'*. Inhabitat: http://www.architectural-review.com/buildings/ningbo-museum-by-pritzker-prize-winner-wang-shu/5218020.article

THE SILO COMPETITION

PROPOSAL BY NL ARCHITECTS

The Amsterdam competition highlights the interest in these derelict forms through repetition and redundancy. Not only was the original form reused, but it was also added to, increasing the impact of the form in the skyline. The twining of the silos serves to accentuate the differences between the two in façade treatment as well as the mutations made. The façade bulges added to the silos create interesting spaces by allowing for irregular volumes on the interior as well as exterior. It erodes the purity of the form in a way that is unexpected in such a relentless geometry. Silo B exemplifies the concept of twining through the use of a silo within a silo.[1] The mutation of the interior silo functions more like the echo of itself – its shape allows for unique and awkward spaces to remain as circulation while the replicated form is still evident. The cylinder and circle forms are echoed once again in the replicated shape of the paving, stairs, and single storey entrance to the complex.

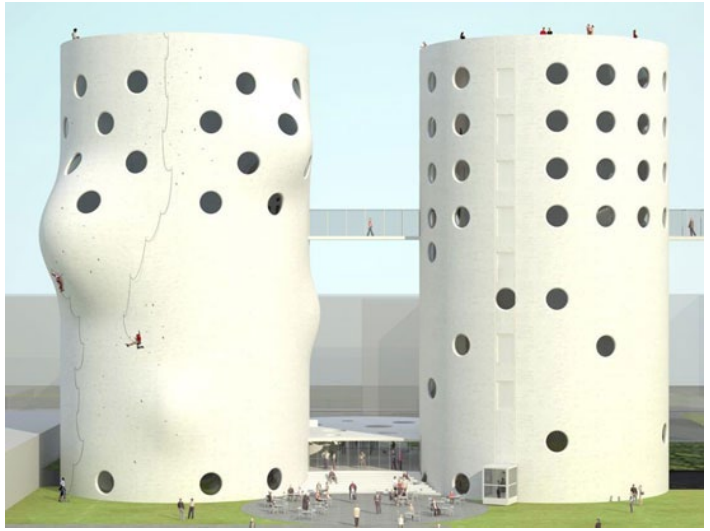

fig.4.1.10 Silo competition proposal render by NL Architects.

fig.4.1.11 Silo competition proposal section by NL Architects.

1. Sebastian, J *'The Silo Competition proposal by NL Architects'*. Arch Daily: http://www.archdaily.com/20955/the-silo-competition-proposal-by-nl-architects/

fig.4.1.12 De Meelfabriek Model

fig.4.1.13 De Meelfabriek interior render.

DE MEELFABRIEK

Peter Zumthor's proposal for the Meelfabriek, a former canal side industrial complex in Leiden, Netherlands utilizes the original structure of the industrial forms. In keeping the structure, the forms are maintained allowing a cladding of the facades with modern materials. This derelict landmark is brought to life through new live, work, and leisure program that energizes the surrounding fabric and preserves a cultural landmark.[1]

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1. Vogl, Christoph. '*Peter Zumthor: De Meelfabriek . Leiden',* Afasia: http://afasiaarq.blogspot.com/2010/07/peter-zumthor_22.html (September 2010)

APPENDIX C REMEDIATION

REMEDIAL SPECIES CASE STUDIES

Duisburg-Nord Landschaftspark: Duisburg, Germany	
Iron	Poplar
Steel	Birch
Coal	Moss
Arsenic	
Petroleum Terminal: Utah, USA	
Petroleium	Alfalfa
	Fescue
	Junipers
	Poplars
Phytoremediation Greenhouse: Cincinnati, Ohio, USA	
Uranium	Sunflower
Heavy Metals	Poplar
	Indian Mustard
Salford Quays: Manchester, UK	
Various Industrial Contaminants	Algae
	Water Lilies

Data collected from various sources including: Kirkwood, Niall. Manufactured Sites: Rethinking the Post-Industrial Landscape, London: Spon Press (2001)

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2 ibid, 17

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4 ibid, 166

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