Geographies of Urban Filth

Rethinking the spatial and social constructs of dirt and cleanliness

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

The thesis studies how our cultural understanding of dirt and cleanliness are bound to issues of class and race and how they are manifested within urban and spatial design. Boundaries are formed between clean and dirty, familiar and foreign, us and them, through the rejection of matter that is disturbing or threatening to us. The city carries with it multitudes of identities, consequently forming divided groups and communities within spaces of belonging and exclusion. Thus, the thesis proposes a theoretical approach which questions our current conventions and practice of categorizing spaces, unearthing and bringing us in touch with the rejected 'other' within the city and within ourselves. This thesis grounds itself on existing ideas of identity and otherness by Julia Kristeva, R.D Laing, Krzysztof Wodiczko and Mary Douglas. In Julia Kristeva's essays on abjection, she describes abjection as the discomfort caused when impurities and contamination become a threat to one's own identity and order. It is when borders that are meant to protect us from the other, become ambiguous. The inherent fear of the abject breeds an obsession for purity which erases opportunities to engage with and understand those other to ourselves.

These ideas of the self and the other, cleanliness and dirt, are explored through the intervention of the North Toronto Wastewater treatment plant central to three physically and socially disconnected neighborhoods of different income levels and ethnic groups. The treatment plant sits hidden and disguised below city level within the Don Valley ravine, collecting and filtering wastewater from these neighboring communities and releasing it back into the Don Valley River. Mary Douglas examines our cultural understanding of dirt asserting that dirt only exists through our categorization of space. Materializing these ideas into spatial design, the design proposal seeks to challenge the tension that the pure vision of the city has with its dirtier and wilder counterpart which is the wastewater treatment plant, the ravines, and the sewers. The design proposes the breaking down of boundaries between perceived "clean" and "dirty" spatial and social constructs with the insertion of a public space and bath within the wastewater treatment facility. The departure from the safety of the familiar city, and entrance into ambiguous marginal territories, allows one to experience moments of vulnerability where the questioning of one's own identity and reflection of one's own strangeness allows for a deeper understanding of the other. With the appropriation of the wastewater treatment plant, the strangeness of oneself within the foreign environment allows the stripping of borders to confront the strangeness of another.

Acknowledgements

I would like to thank my supervisor, Rick Andrighetti, I am beyond grateful for your enthusiasm, curiousity, and patience during every meeting. Thank you for your guidance during my many moments of doubt and for sharing your knowledge and stories of Toronto and it's ravines.

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Finally, to my mom and sister, my adventure buddies and my biggest supporters, thank you for everything.

Dedication

to my mom and sister

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note: all images are by the author, unless otherwise noted.

Confronting the foreigner whom I reject and
with whom at the same time I identify, I lose
my boundaries, I no longer have a container,
the memory of experiences when I had been
abandoned overwhelm me, I lose my composure.
I feel 'lost,' 'indistinct,' 'hazy.' The uncanny
strangeness allows for many variations: they all
repeat the difficulty I have in situating myself
with respect to the other and keep going over
the course of identification-projection that lies
at the foundation of my reaching autonomy.

Julia Kristeva, Strangers to Ourselves

INTRODUCTION

In Martin Scorsese's film, Taxi Driver, Robert De Nero plays Travis, the protagonist and taxi driver who is haunted by the filth of the city, he writes,

> *Thank God for the rain which has helped to wash away the garbage and trash from the sidewalks…All the animals come out at night—whores, skunk pussies, buggers, queens, fairies, dopers, junkies; someday, a real rain will come and wash all this scum off the streets.*[1]

He is obsessed with purifying the city, equating the city to an open sewer that needs to be cleaned up. The film reveals how images of cleanliness and dirt are often tied to specific social groups and classes and associated with disorder or control.

Figure.1 Taxi Driver, 1976, Martin Scorsese

Figure.2 Taxi Driver, 1976, Martin Scorsese

1. Martin Scorsese, *Taxi Driver* (United States: Columbia Pictures, 1976).

PART 1: SOCIAL THEORIES OF FILTH AND CLEANLINESS

Abjection and Otherness

The anxiety and disturbance in identity experienced by Travis in *Taxi Driver* is what philosopher and psychoanalyst, Julia Kristeva describes as what causes abjection, as "It provokes fear because it exposes the fragility of the border between the self and other, threatening to dissolve the self".[2] Thus, a distinction between the "pure self and the defiled other"[3] is established where an ambiguity between the border that separates them creates levels of discomfort, for fears of contamination. Geographer, David Sibley writes,

> *Once the bourgeoisie developed a sense of self which excluded bodily residues, they could recognize their difference from the smelly working class: The abhorrence of excrement became an abhorrence of the poor, who represented what the bourgeoisie had left behind. Public health policies dealt with the problem of the putrid masses and believed cleaning up the poor would also help to instill ideas of discipline and order amongst them. Public health schemes brought with them regulations and were thus a means of social control.* [4]

2. Kristeva, *Powers of Horror An Essay on Abjection.*
3. David Sibley, *Geographies of Exlusion* (New York: Routledge, 1995), 58
4. Sibley, *Geographies of Exlusion*, 58

Our own waste matter, the waste matter of others, and the wastewater treatment plant is an abjection of the city. Similarly, those who are seen as "other" to ourselves including foreigners and the outcast of society are also abjections. In the book, Strangers to Ourselves, Kristeva suggests that we must "recognize ourselves as strange" in order to understand the foreigners outside us "instead of striving to bend them to the norms of our own repression".[5] This creates a shift in perspective in realizing that "The foreigner is within me, hence we are all foreigners. If I am a foreigner, there are no foreigners."[6] R.D Laing writes that this understanding develops through a shift in perspective where "one has to be able to orientate oneself as a person in the other's scheme of things rather than only to see the other as an object in one's own world".[7]

5. Julia Kristeva, *Strangers to Ourselves, Translated by Leon S. Roudiez (New York, Oxfprd: Columbia University Press, 1991).*
6. Kristeva.192
7. R.D Laing, The Divided Self (London: Penguin Group, 1990). 26

Figure.3 Mister Roger's Neighborhood, 1968, Fred Rogers

Figure.4 Mister Roger's Neighborhood, 1968, Fred Rogers

Influenced by Julia Kristeva's *Strangers to Ourselves,* Artist Krzysztof Wodiczko, writes about the Immigrant Instrument as a vehicle for which strangers make the transformation into nonstrangeness while aiding the non-strangers in recognizing their own strangeness. He introduces the Immigrant Instrument as a new equipment for strangers, as a "thing-in-between" that reveals their unique strangeness and identity, encouraging discussion between the stranger and the non-stranger.[8]

> *Such equipment, which I call the Immigrant Instrument, must offer healing powers to its users, overcoming the ever-present fear of one's own strangeness, as well as communicating the strangeness with playfulness, confidence, and power.*[9]

8. Krzysztof Wodiczko, *Critical Vehicles* (Cambridge, Massachusetts: The MIT Press, 1999). 13
9. Wodiczko. 13

Figure.5 Mouthpeice,1995, Krzysztof Wodiczko

As a still and perhaps ever utopic matter, the question is again before us today as we confront an economic and political integration on the scale of the planet: shall we be, intimately and subjectively, able to live with others, to live as others, without ostracism but also without leveling? The modification in the status of foreigners that is imperative today leads one to reflect on our ability to accept new modalities of otherness. No 'Nationality Code' would be practicable without having that question slowly mature within each of us and for each of us.

Strangers to Ourselves, Julia Kristeva [10]

10. Kristeva, *Strangers to Ourselves, Translated by Leon S. Roudiez, 2*

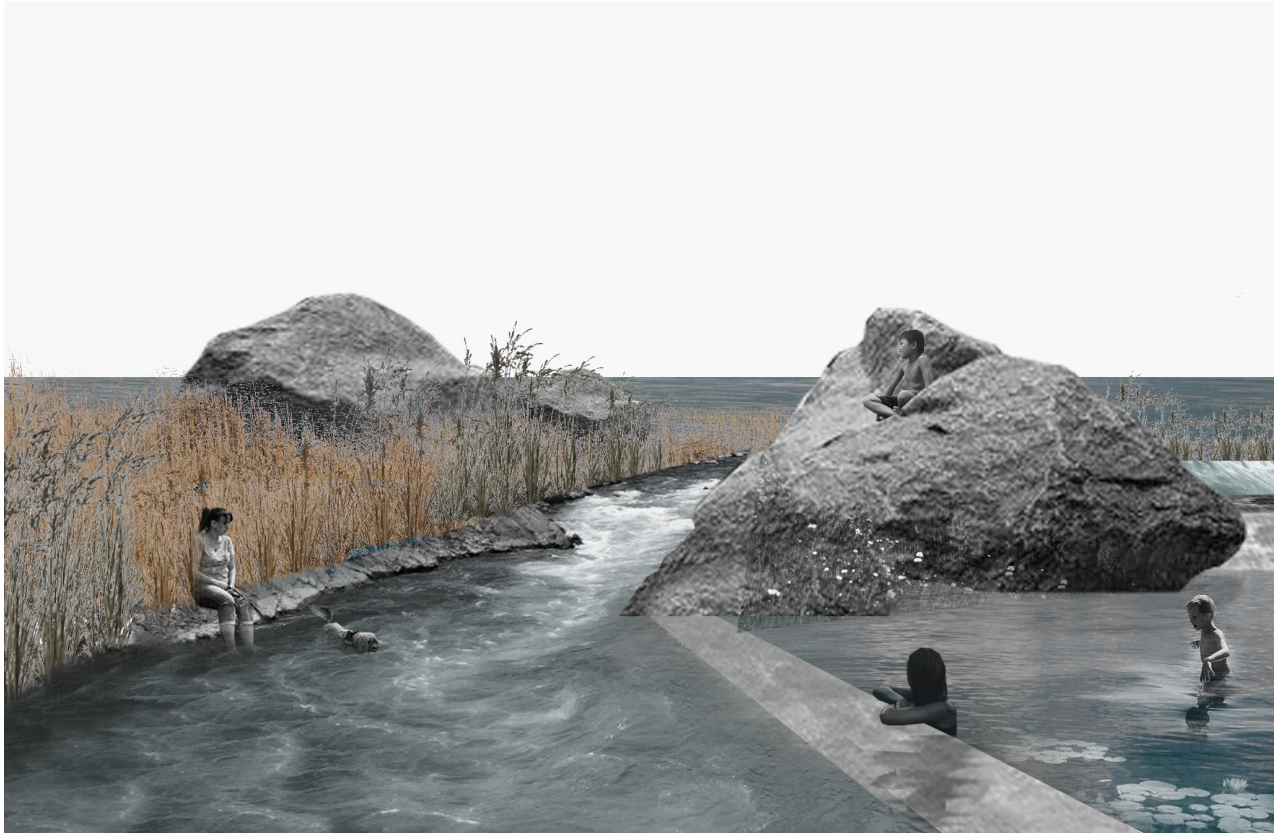


Figure.6 Preliminary design scheme

Responding to the multiplicity of identities within the divided communities of Toronto, the design intervention utilizes the wastewater treatment plant as an instrument for discussion. The site's fantastical and curious qualities allow for a departure from the familiar city into marginal territories. By inhabiting this in-between space, the possibility for genuine connections can be formed.

The flow and cycles of water through the city within our rivers, bodies, and the sewers, play an important role in being the physical element that connects us to each other and the environment. Therefore, ideas of the abject, are explored through the public occupation of the wastewater treatment plant where the city's waste converges. The public bath or swimming pool becomes integral to the design as a space of tension and negotiation, where we confront things and those we had cast off from the pure vision of our lives.

The construction of our cultural associations with filth is demonstrated clearly in the development of bathing complexes in North America.

Figure.7 NTWWTP, 1931, City of Toronto Archives

PART 2: FILTH IN THE CITY- CLASS, CONTROL AND PURIFICATION

A Brief History of Swimming Pools in North America

Until 1910, there were only a few bathhouses in Toronto that were situated outside of the downtown core, which were intended only for the upper middle class who could afford it. Immigrants occupying the Ward had no public baths or indoor plumbing, making use of shared outdoor spigots and public beaches to bathe during summer times. However, they had no way of bathing during the cold winter months. Medical Health officer, Dr. Charles Hastings evaluated 1,600 homes in the immigrant neighborhood and found that only 1/10 of the population had proper indoor plumbing. During this period, Hastings, like others, saw the Ward as a threat to the wellbeing of the rest of the city, as they suspected it to be the breeding grounds for diseases. [11]

In the book, Washing "The Great Unwashed", Marilyn Williams who studied the American obsession for cleanliness, writes that often poverty and dirt are associated with, "habits of laziness, weakness, degeneration, or thriftlessness." [12]. Contrastingly, historian Andrea Renner writes that cleanliness "was a metaphor for the act of "purging physical substances to eliminate vice and foreignness." Bathing, in the mind of the reformer, could therefore have a transformative effect on slum dwellers, rendering them physically and morally cleaner and ultimately more "Canadian."" [13]

11. Ellen Scheinberg, *The Ward: The Life and Loss of Toronto's First Immigrant Neighbourhood*, ed. John Lorinc et al. (Toronto: Coach House Books, 2015).
12. Marilyn T. Williams, *Washing "the Great Unwashed": Public Baths in Urban America, 1840-1920* (Ohio State University Press, 1991), 23
13. Scheinberg, *The Ward: The Life and Loss of Toronto's First Immigrant Neighbourhood.*

Municipal pools became a place for everyone and a place for community meetings and consequently served as a stage for social conflict.[14] The sharing of water implied an unwelcomed prolonged intimacy between strangers. These people, including foreigners, immigrants, and others suddenly found themselves in a setting where they undressed and bathed in the same water together.

The realization that "I'm in this water, you're in this water, it's in me, on me."[15]sparked a disgust for marginalized people that shared the same waters, and thus a violence between groups for fears of contamination.

14. Williams, *Washing "the Great Unwashed": Public Baths in Urban America, 1840-1920.*

15. Niraj Chokshi, "Racism at American Pools Isn't New: A Look at a Long History," *The New York Times*, 2018, https://www.nytimes.com/2018/08/01/sports/black-people-pools-racism.html.

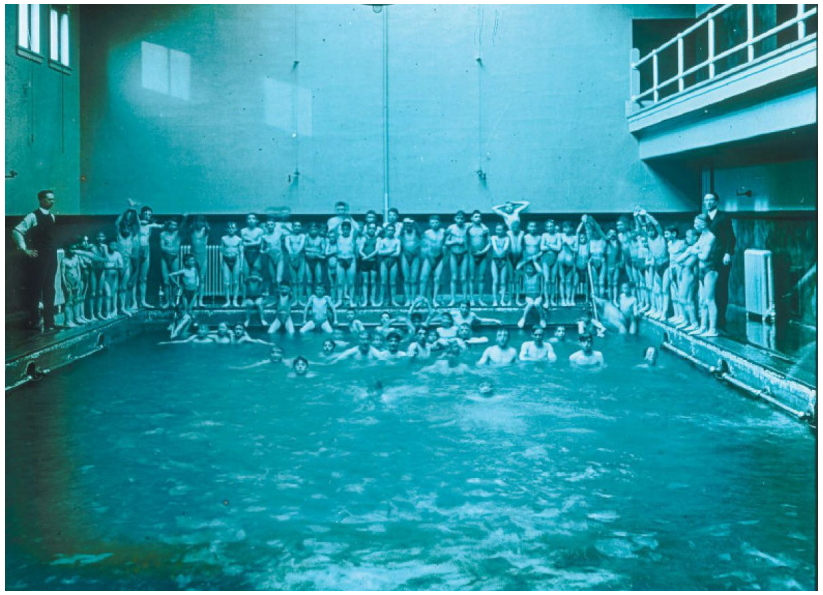


Figure.8 Harrison Baths, 1914, City of Toronto Archives

Figure.9 A family in the Ward, 1913, City of Toronto Archives

Designing for Purity and Filth

Our cultural obsession with purity can be seen in the design of the R.C Harris Water Treatment plant also known as the Palace of Purification. Its construction marked the beginning of the modern water purification system and was a crucial piece of infrastructure for the growth of Toronto as a city. With its construction, R.C Harris, the commissioner of Toronto Public Works sought to solve the cities lack of clean drinking water. The water treatment plant began construction in 1932 on top of a hill overlooking Lake Ontario in the style of art deco. [16] Lined with marble walls with pools of filtered water, it was designed to represent what it was culturally valued for: purity.

Figure.10 R.C Harris Water treatment Plant, 2009, r h

16. John Lorinc, "Toronto's Costly Sewage Mistake," *The Star*, 2012, https://www.thestar.com/news/insight/2012/09/14/torontos_costly_sewage_mistake.html.

Around the same time in 1929, Harris developed a plan to treat the sewage produced by the rapidly growing neighborhoods in North Toronto. The residents at the time were at risk because of the inadequate sewage treatment. The North Toronto Wastewater Treatment plant was approved for construction deep in the Don Valley Ravine, disguised and designed to resemble an English village[17] of little houses with bright turquoise roofs and wood sidings. The location was chosen because it sits below city level which allows influent to enter the facility using gravity replacing the need for a pump. Effluent is also easily discharged because of its proximity to the river.[18] The location and modesty of its appearance allowed the wastewater treatment plant to sit below the city, undisturbed and hidden from view, while serving a crucial function for the city.

17. Lorinc.
18. Lost Rivers, "North Toronto Sewage Treatment Plant," accessed July 20, 2018, http://www.lostrivers.ca/content/points/NTSTP.html.

Figure.12 NTWWTP from the trail, 2016, Hiking the GTA

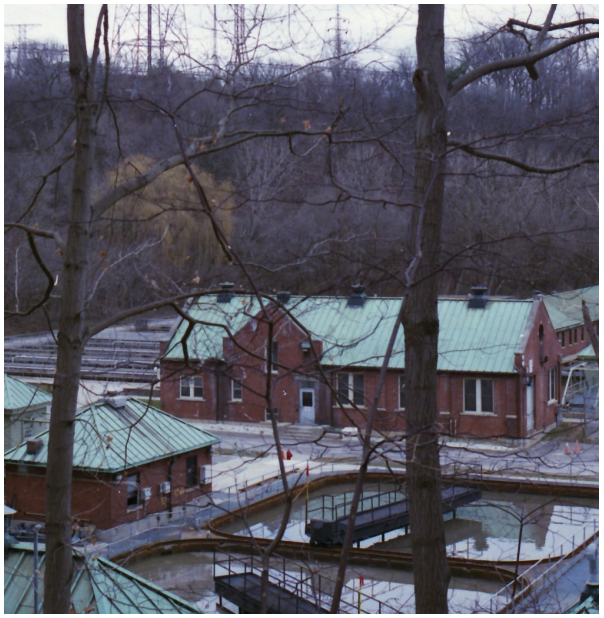


Figure.13 NTWWTP from the trail

Figure.14 Rosedale Ravine, 2017, Derek Flack

PART 3: SITE

The Don Valley Ravine

The ravines have played an important role in the development and history of Toronto. It is often written about in novels whose stories take place in Toronto. The ravines are depicted as a place of mystery, danger and crime. Its unpredictability and wilderness are a threat to many who avoid it, yet alluring to some who seek to uncover hidden unknowns within the city. It is where the homeless take shelter, where runaways take refuge, where children can partake in unsupervised play, and where city-dwellers escape the frustrations of everyday life. In addition to its physical influence on the development of Toronto, it has also had a cultural impact on its history and inhabitants. The Don Valley Ravine is central to the stories told in two notable novels, *In the Skin of a Lion* by Michael Ondaatje, and *Fugitive Pieces* by Anne Michaels.

In the novel, *In the Skin of a Lion*, Ondaatje focuses on the overlooked lives of immigrant workers that were entwined with the construction of the Bloor Street Viaduct and the R.C Harris Water treatment Plant. He reveals the hidden lives of these construction workers and dynamiters who remained outsiders of mainstream society despite their role in the construction of Toronto. Ondaatje recounts the true story of a nun who fell off the Bloor street Viaduct bridge during its construction. In the novel, the nun is saved by Macedonian immigrant worker and in the process of her rescue, she loses her veil. The incident offers her a new beginning at life, her rescue unknown to the other nuns who presumed her dead. The story of the nun and the migrants share a similar theme, the "novel (is) about the wearing and removal of masks; the shedding of skin, the transformations and translations of identity"[19]

19. James Procter, "Michael Ondaatje," British Council, 2008, https://literature.britishcouncil.org/writer/michael-ondaatje.

In the novel, Fugitive Pieces, Jakob Beer is a 7-year-old Jewish boy whose life is altered after Nazis kill his family. Jakob escapes by hiding from the Nazis, later escaping into a forest where he buries and hides himself in soil until a Greek archeologist, Athos Roussos rescues and raises him. Jakob struggles to find closure for most of his life not knowing exactly what happened to his family. Jakob and Athos eventually move to Toronto, spending a lot of their time walking the Don Valley Ravine. Anne Michaels writes, "It's a city of ravines ...Through these great sunken gardens you can traverse the city beneath the streets, look up to the floating neighborhoods, houses built in the treetops."[20] For them, it is an escape into the wilderness and from reality.

Both novels explore the characters' feelings of otherness, new and old identities and the convergence of multiple identities.

Almost everyone has come from elsewhere ...bringing with them their different ways of dying and marrying, their kitchens and songs. A city of forsaken worlds; language a kind of farewell.[21]

20. Anne Michaels, Fugitive Peices (Toronto, 1996).89
21. Michaels. 89

Figure.15 Crothers Woods Bike Trail, 2016 , Fietster

Figure.16 Rosedale Ravine, Toronto

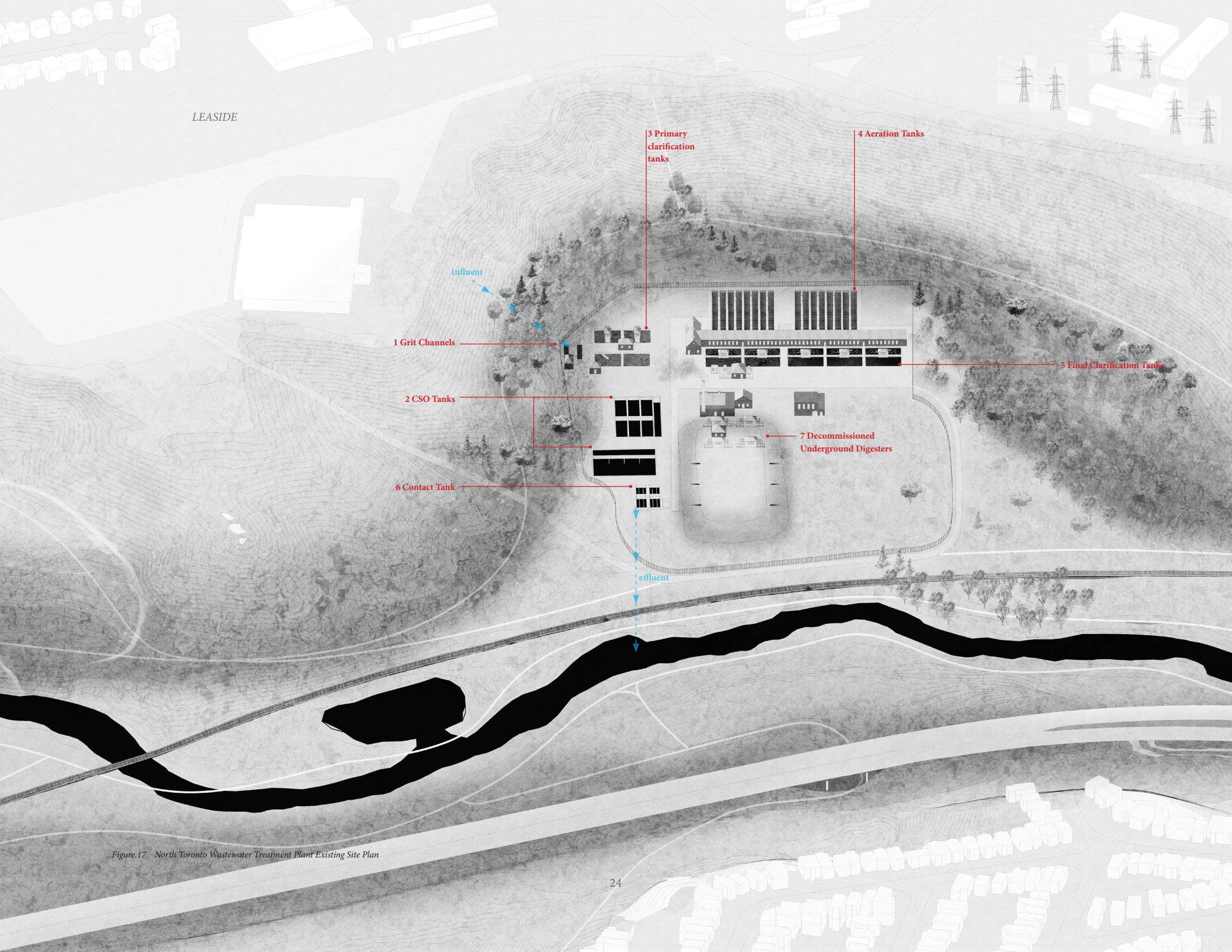
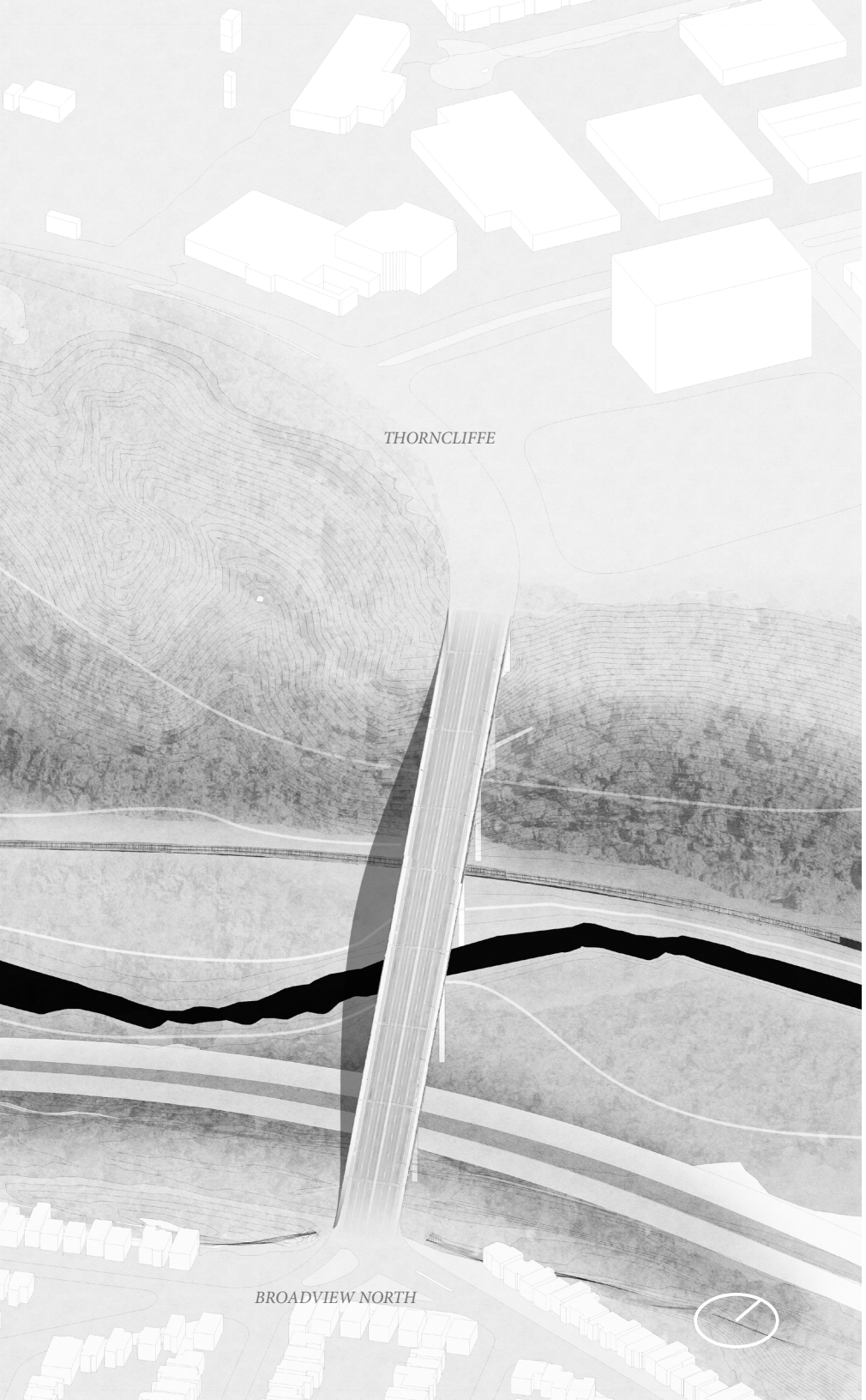


Figure.17 North Toronto Wastewater Treatment Plant Existing Site Plan



The Wastewater Treatment Plant: Site and Water Filtration Processes

The North Toronto Wastewater Treatment Plant sits on 27 hectares of land within the Don Valley Ravine with the capacity of filtering 34,000 m^3 of water per day serving a population of approximately 55,000. To this day, the filtration plant has retained most of its original machinery and function. However, the digestor tanks that sit within the underground bunker have been decommissioned for many years. [22] The wastewater plant is fenced off, but glimpses into the site can be seen from the walking and bike trails within the dense forest that borders it.

Wastewater is treated through a series of pools and water channels that are connect through underground pipes. The filtration process of the North Toronto Wastewater Treatment plant which is standard to filtration plants in North America, is outlined in the North Toronto Wastewater Treatment Plant 2017 Annual Report. It is summarized in the following:

22. City of Toronto, "North Toronto Wastewater Treatment Plant 2017 Annual Report" (Toronto, 2018), https://www.toronto.ca/wp-content/uploads/2018/05/8e22-2017-THR-Annual-Report-Final.pdf.

1. Grit Channels

The treatment plant receives influent from sewers and enters the grit channels where large objects such as sand, gravel and heavy inorganic materials are screened and sent to a landfill site.

Figure.18 Filtration Process: Grit Channel

Figure.19 Filtration Process: Removal of large solids

2. CSO Tanks

During extreme wet weather conditions, the CSO tanks holds the combined sewer overflow that later undergoes primary treatment. Under excessive rain, it will overflow into the Don river.

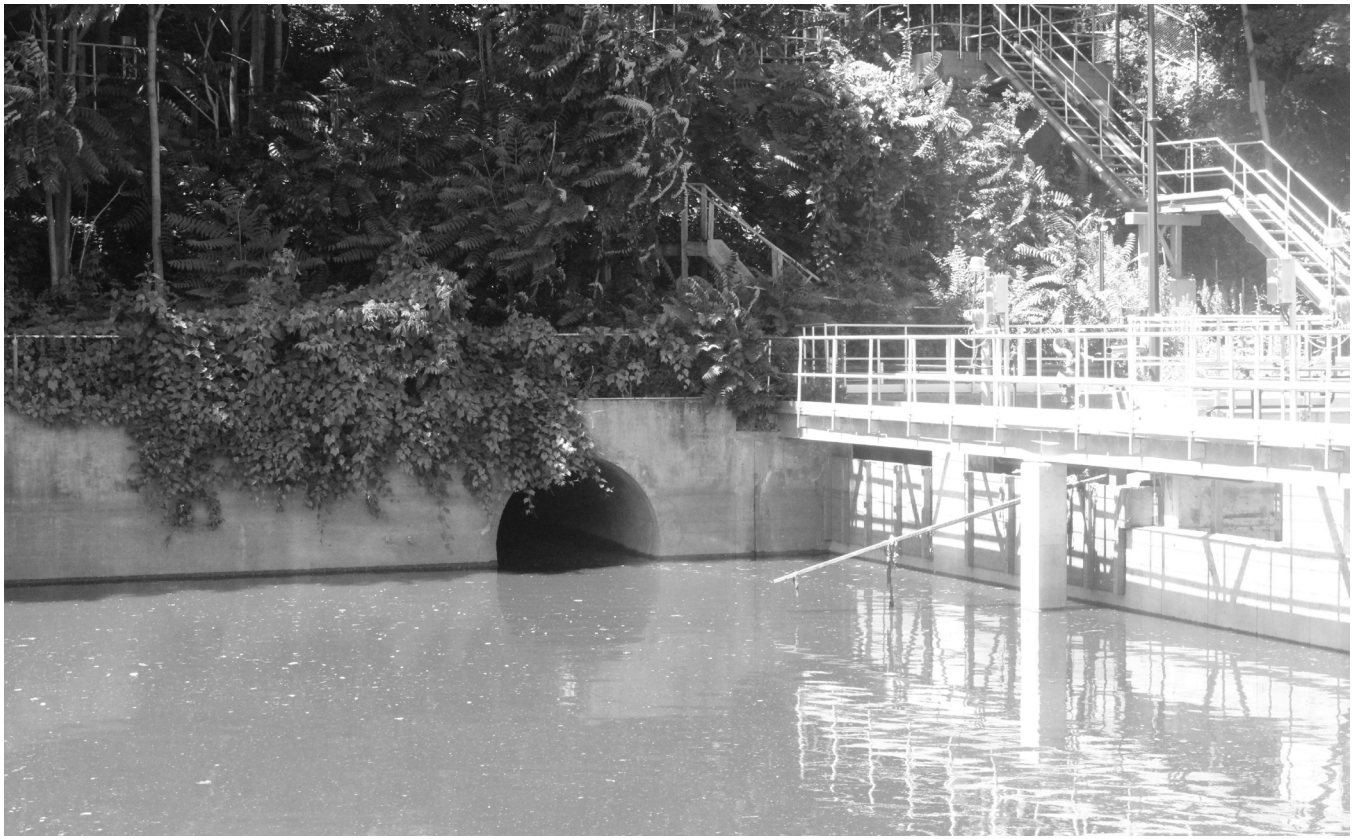


Figure.20 Filtration Process: CSO tank

3. Primary Clarification Tanks

Primary treatment occurs in the 4 Primary Clarification Tanks where heavier solid matter is allowed to settle to the bottom of tanks through a slow churning.

Figure.21 Filtration Process: Primary Clarification Tanks

Figure.22 Filtration Process: Churning

4. Aeration Tanks

The primary effluent continues to the secondary treatment through suspended biomass activated sludge process in Aeration Tanks. The effluent is mixed with return activated sludge which contains micro-organism that help to break down organic material in the presence of oxygen. Phosphorous from the water is removed with the distribution of Ferrous chloride.

Figure.23 Filtration Process: Aeration Tanks

5. Final Clarification Tanks

The wastewater then flows to the 5 Final Clarification or sedimentation tanks where activated sludge settles to the bottom of the tanks.

Figure.24 Filtration Process: Final Clarification Tanks

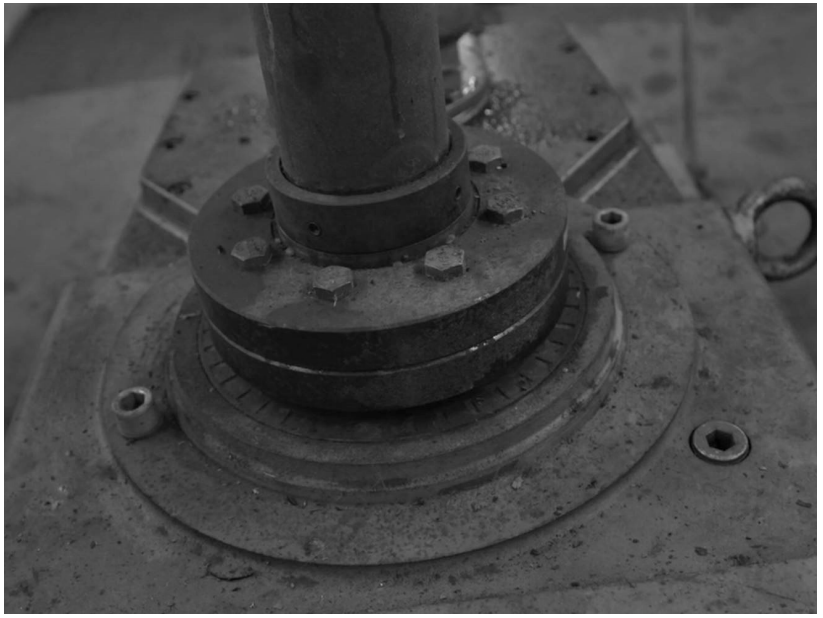


Figure.25 Filtration Process: Churning Machine

6. Contact Tank

Sodium Hypochlorite is used to kill pathogens before reaching the Contact Tank where Sodium Bisulphite is added to remove chlorine, protecting the natural environment. Filtered water is then discharged into the Don River through a large underground pipe. Although the discharged water is safe for aquatic life, human contact is allowable but not advised.

Figure.26 Filtration Process: Contact Tank

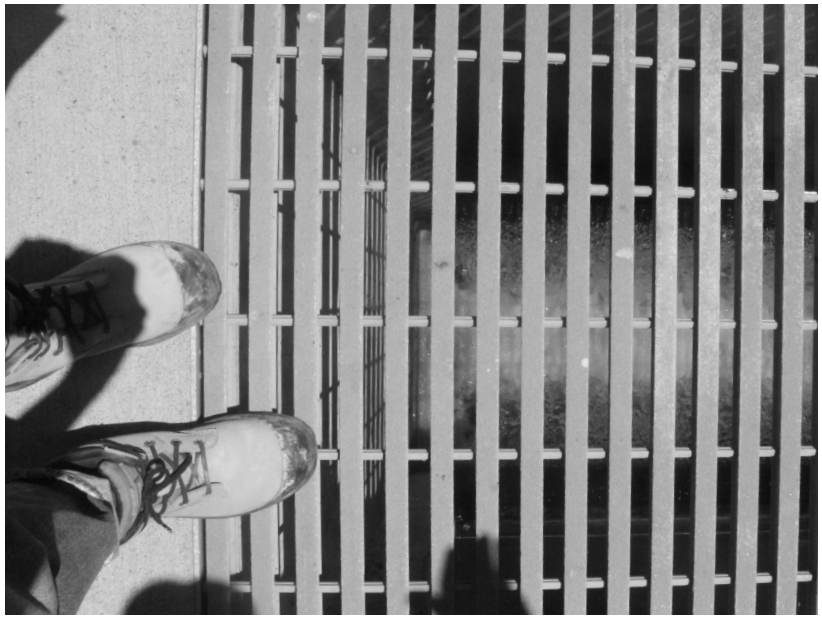


Figure.27 Filtration Process: Water flowing through underground pipe to Don river

7. Decommisioned Underground Digesters

Primary sludge received from the primary and secondary clarification tanks are transported to Ashbridges Bay treatment plant. Until recently, the sludge was treated on site in 10 large digestors housed in an underground bunker. The sludge was pumped into the digestor tanks where they are left to decompose, producing methane gas that would be sent to boilers to heat the treatment facility. The operation of separate digestor tanks were thought to be unnecessary and transported to Ashbridges Bay instead. The bunker is left decommissioned with no plans for its future. [23]

23. "Unseen Toronto Water Treatment Plant - North Toronto Water Treatment Plant on Vimeo" (Canada: Brull Media Inc., 2017), https://vimeopro.com/brull/unseentoronto-water.

Figure.28 Filtration Process: Entrance to underground digestors

Figure.29 Filtration Process: Inside underground digestors

Adjacent Neighborhoods

The North Toronto Wastewater Treatment plant is central to 3 neighborhoods: Leaside, Thorncliffe Park and Old East York. Although they are close in proximity, they are physically separated by the ravine, railroads, industrial lands, and the don valley parkway. Thorncliffe is a self-contained multi-cultural community that acts as a landing community for many new immigrant families. The neighborhood consists of mostly midrise and tall apartment complexes. Contrastingly, Leaside, is an upper middle-class neighborhood with detached single-family homes with over 80% of its inhabitants being Canadian born. [24] Each neighborhood has its own cultural and leisure center detached from each other and the ravines that border it.

All three neighborhoods meet the edge of the Don Valley Ravine with large roads, private backyards, or residential tower parking lots, with a few discrete entrances into the ravine trails. Despite a lack of formal access into the ravines, the informal pathways, wooden ramps and garbage make it evident that it is well used by joggers, bikers and youth.

Figure.30 NTWWTP Adjacent Neighborhoods

24. City of Toronto, "Neighborhood Profiles" (Toronto, 2016).

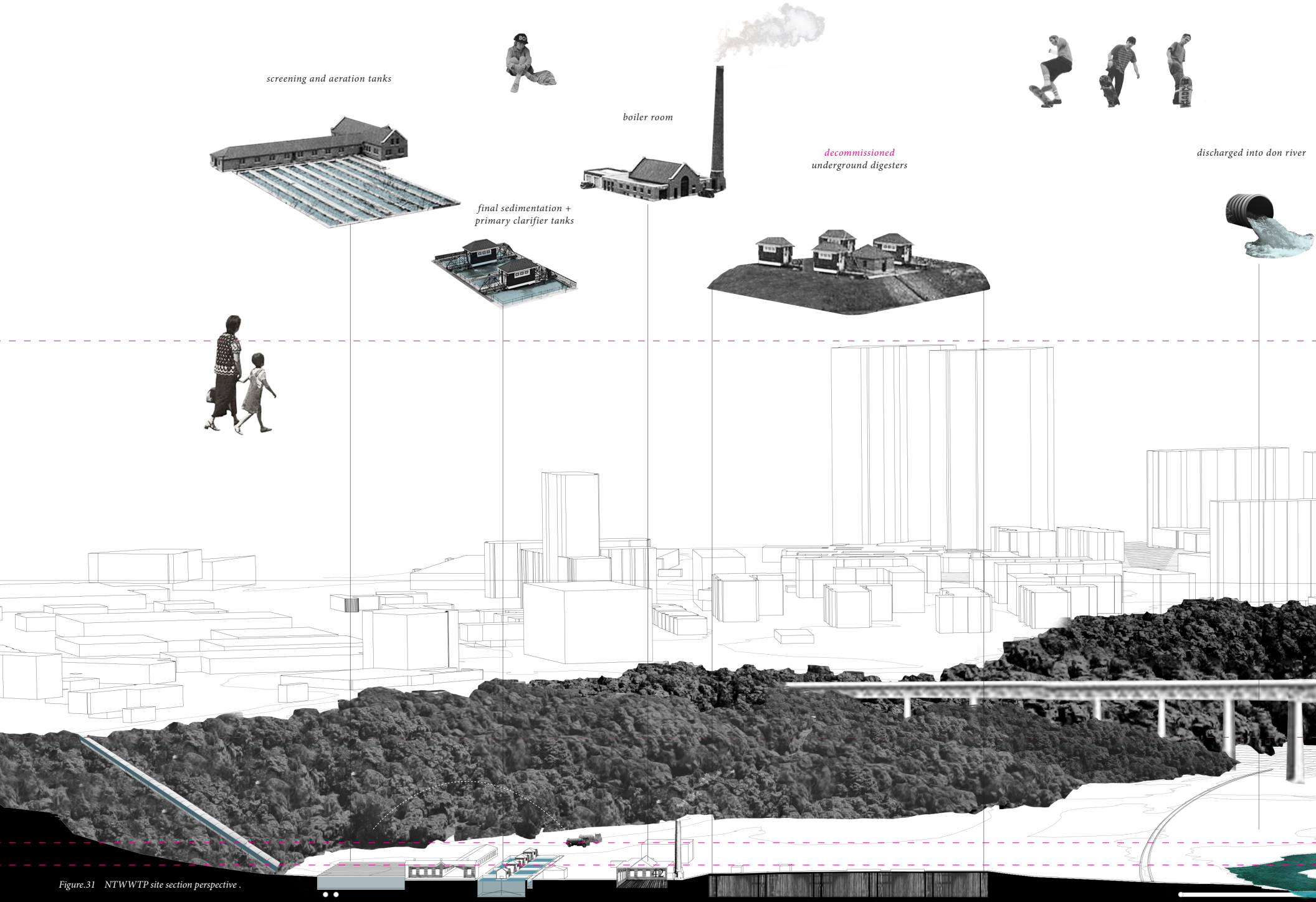


Figure.31 NTWWTP site section perspective .

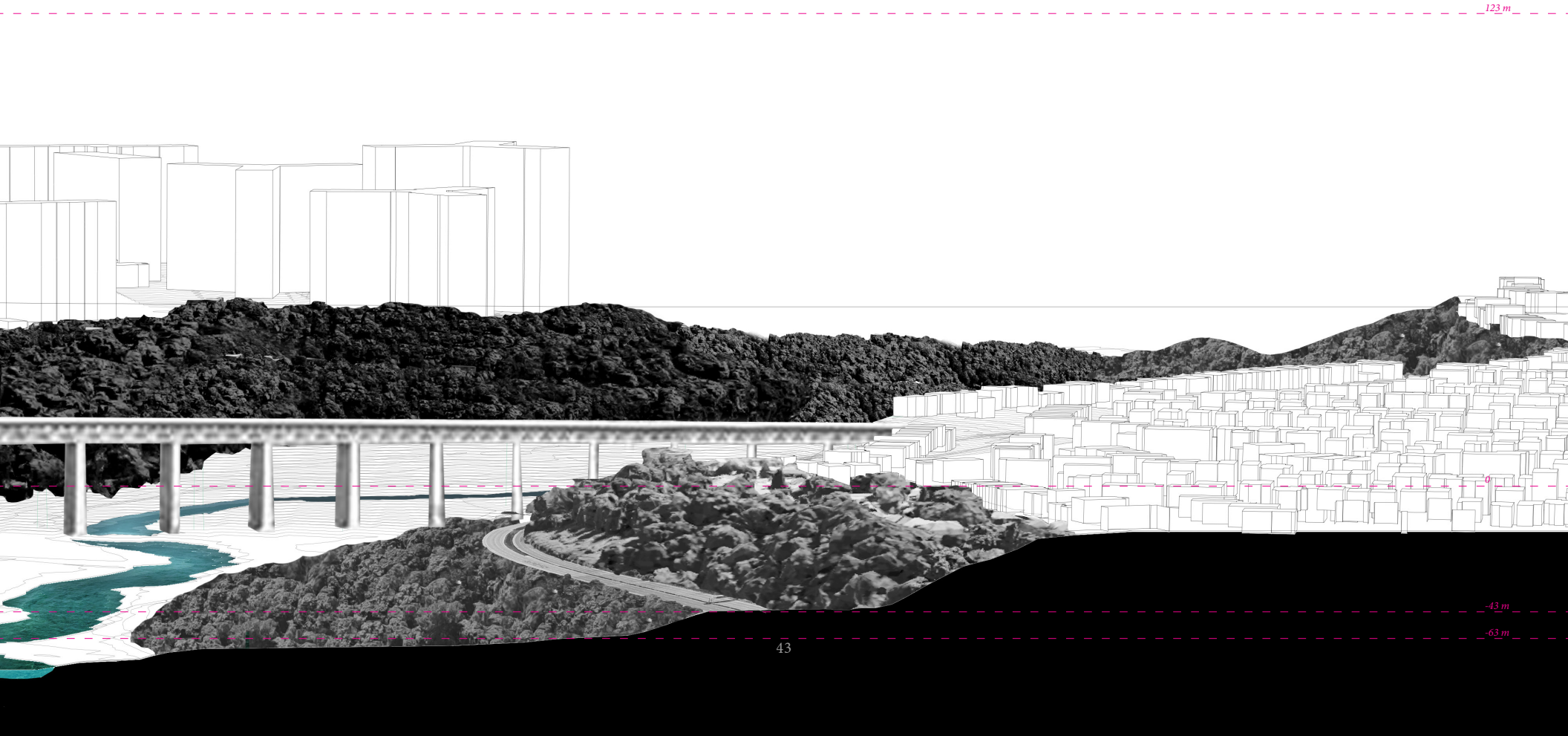

123 m
0
-43 m
-63 m

Figure.32 Bathers, 1998, Justine Kurland

PART 4: DESIGN

The intervention of the site asks how architecture can be interrogative or become a provocation for dialogue. It wonders how a slow revealing to the foreignness of the site and departure from the city can allow us to shed preconceived notions of each other allowing us to reflect on if not question the prescribed boundaries that dictate the way we live and the way we live with each other. It is to provide a place so rare within our cities where we shed our public personas and feel inclined to take the risk of being vulnerable and witnessing the vulnerability of others.

The ambiguity of spaces between clean and dirty and familiar and foreign, allows us to recognize the strangeness within ourselves in order to understand the strangeness of another.

Figure.33 Spirit West, 2001, Justine Kurland

Figure.34 The Fort, 1998, Justine Kurland

Precedent projects were studied to understand the ways design can navigate boundaries between nature and the built landscape, clean and dirty, and the new and old. The following precedents are projects that are unconventional, introducing new ways of occupying and interacting with spaces we would normally consider undesirable, unsafe, and forbidden. In occupying such a space allows us to reorient ourselves within the safety of our familiar world, creating new possibilities of interaction.

The Leça swimming pool designed by Alvaro Siza in 1966 [25], sits on the edge of the Atlantic Ocean, reconciling the natural and the built space. Within the pools, people can swim safely while experienceing the wildness and danger of the ocean waves. The pools sit within the existing rock formation encouraging visitors to explore the site outside of its boundaries. Similarly, The repurposing of Cava Arcari is also a modest intervention which enhances existing qualities of the site. It is an unconventional performance space in a former quarry designed by David Chipperfield Architects[26]. The minimally designed stone seating and stage sit within the vast underground space that is carefully lit, preserving and enhancing original qualities of the quarry. The role of water and light plays an important role in the performances, allowing music to be experienced in new and more immersive ways.

25. Philip Jodidio, *Alvaro Siza: Complete Works 1952-2013* (Taschen, 2013).
26. David Chipperfield Architects, "David Chipperfield Architects," 2018, https://davidchipperfield.com/news/2018/ca-va-arcari-performance-by-michael-ny-man.

Figure.35 Leça swimming pool, 1966, Álvaro Siza Vieira

Figure.36 Cava Arcari, 2018, David Chipperfield Architects

The many works of Lina Bo Bardi exemplifies the convivial nature of a shared space between strangers. The adaptive reuse of the old drum factory was led by Lina Bo Bardi in 1986 converting it into a quirky and whimsical leisure center: the SESC Pompeia. The spatial planning, open design and accessibility, encouraged people of all ages and class to participate in leisure activities, bringing street and public life into the building. The building is powerful yet delicate, ugly and beautiful at the same time. Fragments of the old factory was preserved, and existing structure remained visible giving the building character and personality. Lina Bo Bardi referred to the building as a socialist experiment, describing architecture as seeing "an old man or a child with a full plate of food walking elegantly across our restaurant, looking for a place to sit at a communal table.' [27] The SESC Pompeia is a strong expressions of power, playfulness, confidence, and fragility, embodying and revealing the strangeness of its diverse users.

27. Marcelo Ferraz, "Lina Bo Bardi: Together," 2012, http://linabobardito-gether.com/2012/08/03/the-making-of-sesc-pompeia-by-marcelo-ferraz/.

Figure.37 SESC Pompeia fire pit, 1986, Lina Bo Bardi

Figure.38 SESC Pompeia Rio São Francisco, 1986, Lina Bo Bardi

Located in the Ruhr district, a former industrial town in Germany, industrial land is converted into the Duisburg Nord Landscape park including galleries, water park, and adventure playgrounds. The rustic and worn-down fragments of the site are preserved, introducing public programs for new interpretations within the old landscape.[28] The idea of introducing the public to the contaminated blast furnace plant was controversial, however newly planted trees that bloom annually attract thousands of visitors, giving a new understanding and perspective to the polluted site.[29]

Existing materials on site were reused like the Piazza Metallica, where old iron plates used for pig-iron mould castings are reused for the park's central space. Despite the park's adaptation, the existing infrastructure is allowed to continue to rust and age with time.

28. Peter Latz, *Rust Red: The Landscape Park Duisburg-Nord* (Hirmer Publishers, 2017).
29. Landezine, "Landschaftspark Duisburg Nord," 2011, http://www.landezine.com/index.php/2011/08/post-industrial-landscape-architecture/.

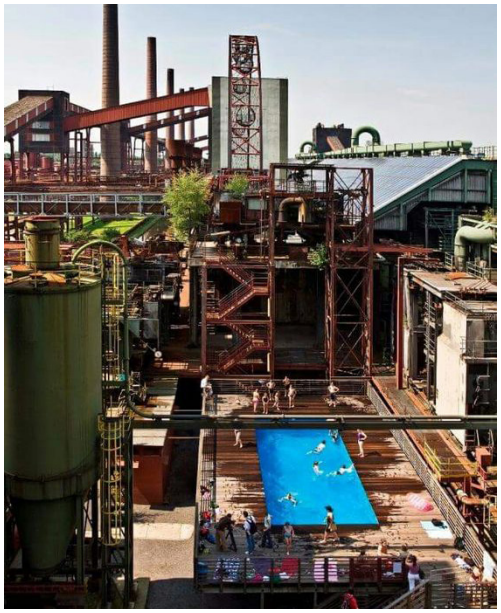


Figure.39 Duisburg Nord Landscape Park Pool, 2002, Latz+Partner

Figure.40 Duisburg Nord Landscape Park Piazza Metallica, 2002, Latz+Partner

In addition to these designed spaces, the occupation of different types of natural water bodies served as design influence. The speed, depth and temperature of water all influence the types of activities and interactions that people have with eachother and the landscape. Natural and less regulated environments perhaps could encourage a more instinctual and primitive way of interacting with the landscape and with each other.

Figure.41 Eisbach in the English Garden, Munich

Figure.42 Hveragerdi Iceland , 2017, tinyiceland

These natural examples contrast the highly precis ways that the city and buildings control the flow of water. Interventions within the wastewater treatment plant blends characteristics of the familiar, safe, and controlled with the unfamiliar, unprogrammed and unregulated spaces to distort and to create ambiguous spatial categorizations.

Figure.43 Turtle Creek, 2002, DIRT Studios

Figure.44 SESC Pompiea rain drainage, 1986, Lina Bo Bardi

Figure.45 Waterstream from underground tunnel

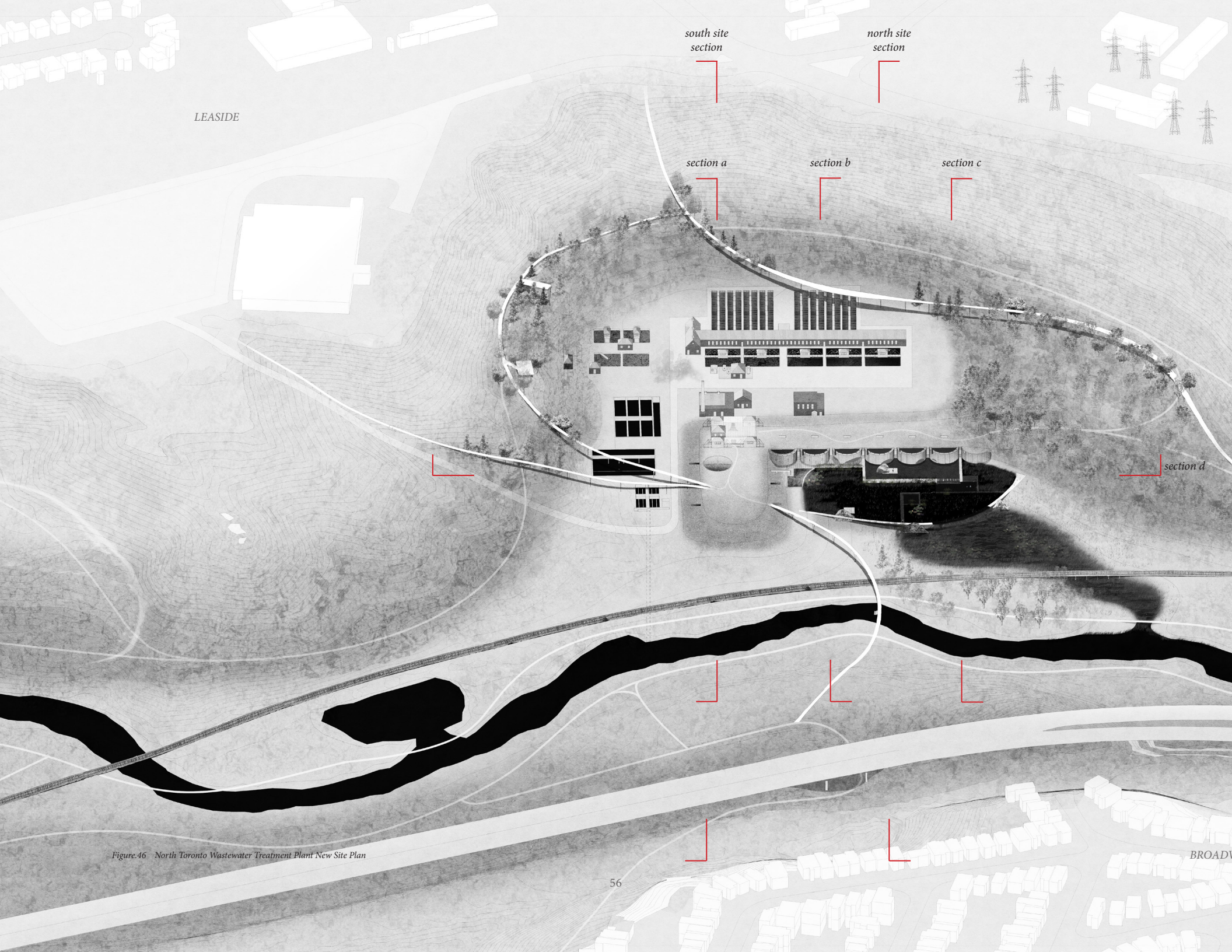
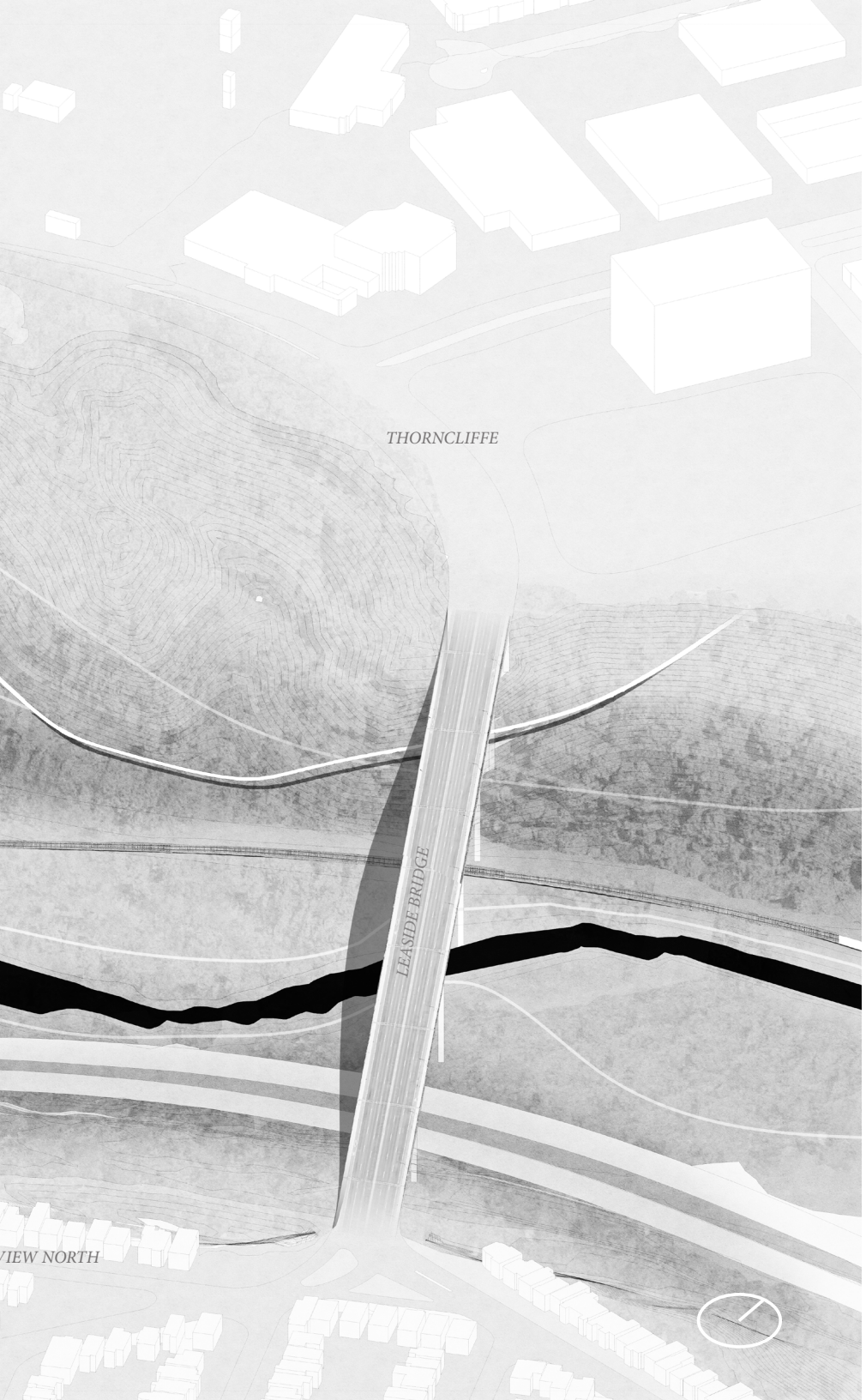


Figure.46 North Toronto Wastewater Treatment Plant New Site Plan



Design Narrative

There are three major elements within the design, the first, is the connecting element that brings the neighborhoods together towards the wastewater treatment plant. The second is the combined swimming pool and wetland which receives discharged effluent from the addition of a tertiary water treatment space. It is where we witness, come in contact with, and fully immerse ourselves with the abject. The third element supports the swimming pool activities with the appropriation of the decommissioned underground digesters as a space for arts and performance as a celebration of the strangeness of the site and ourselves.

The designed space is meant for the community as a place for leisure and reflection where one returns to on multiple occasions for an occasional exposure to the thrills of the unknown, and a departure from the city and the frustrations of everyday life. It is designed to preserve the hidden and curious nature of the site and the ravines.

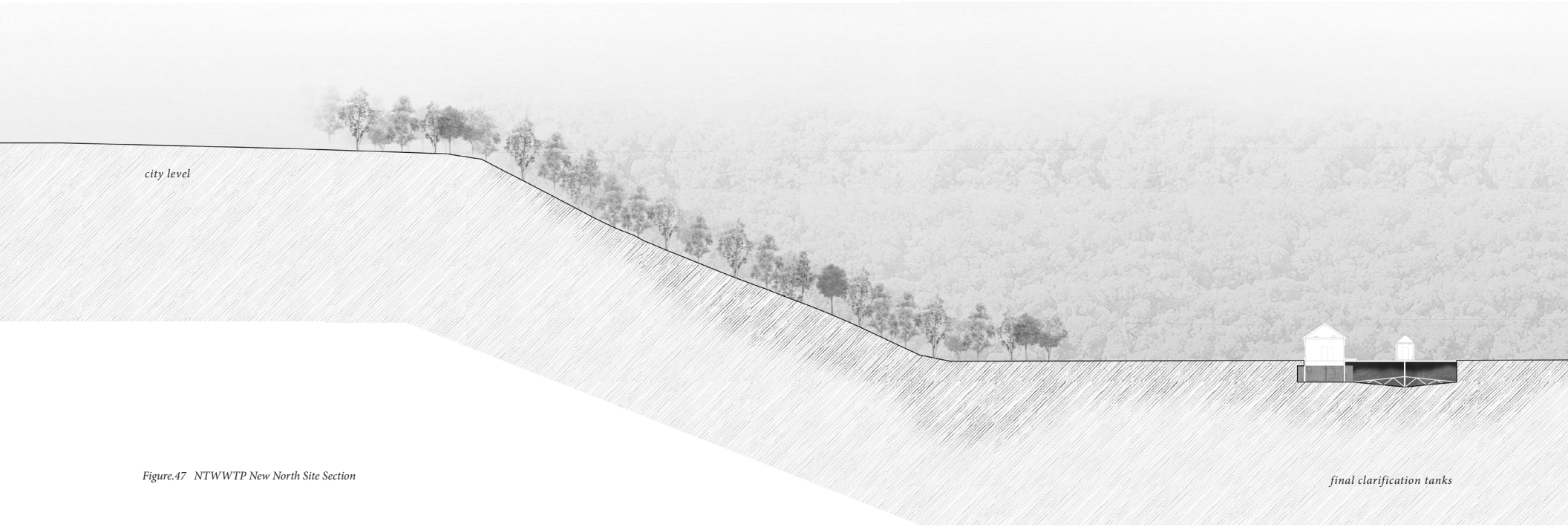
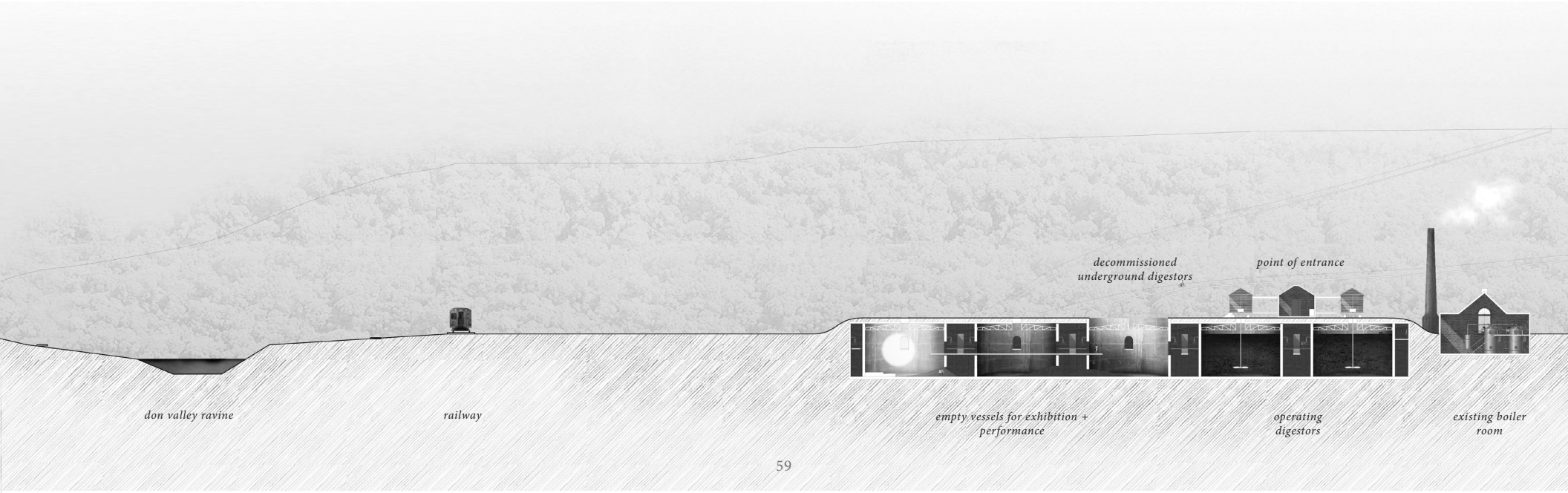


Figure.47 NTWWTP New North Site Section

Figure.48 NTWWTP New South Site Section


leaside bridge
tertiary water treatment
designated swimming area
restored wetland
railway
don valley ravine


decommissioned
underground digestors
point of entrance
don valley ravine
railway
empty vessels for exhibition +
performance
operating
digestors
existing boiler
room

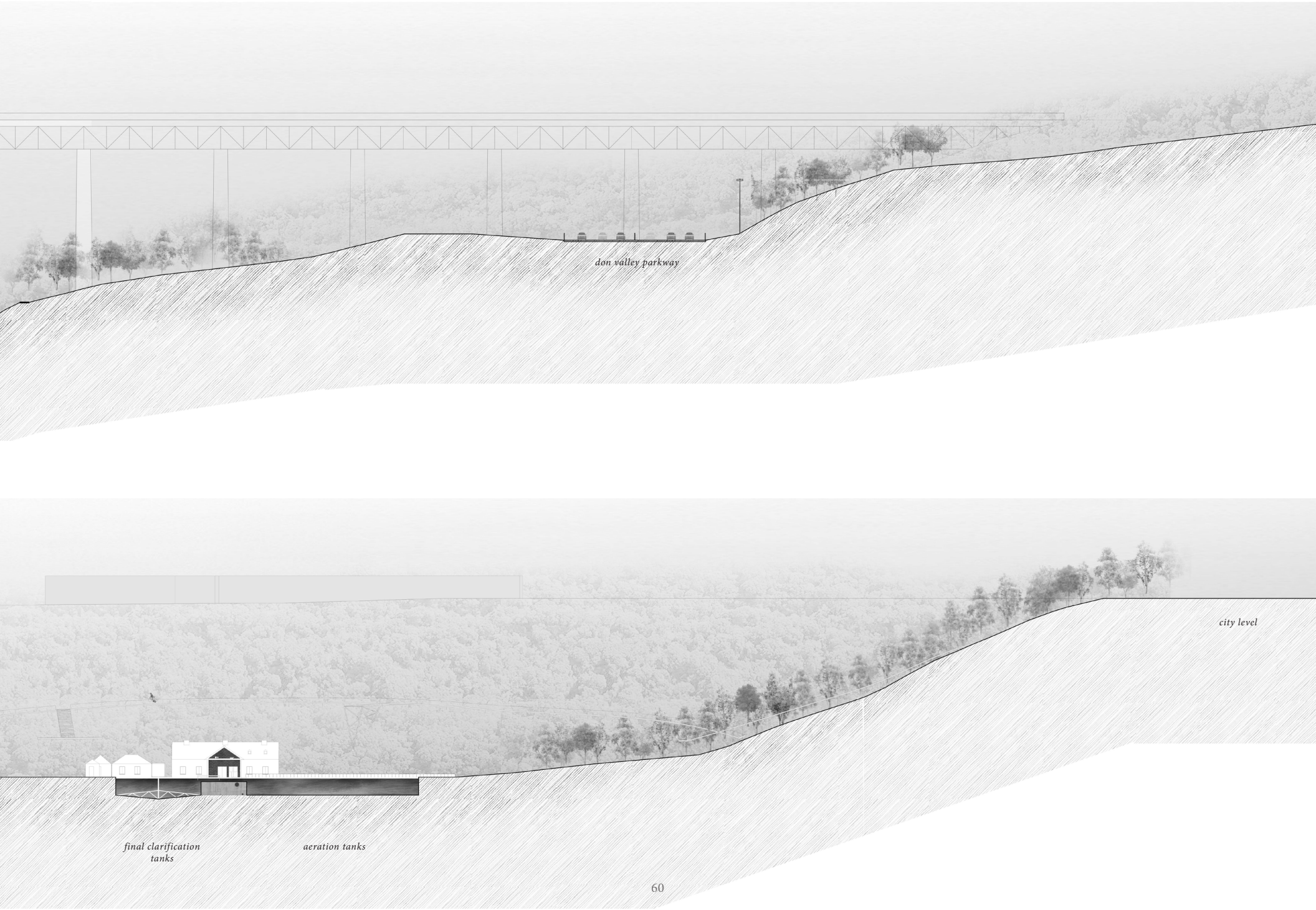

don valley parkway
city level
final clarification tanks
aeration tanks

Figure.49 Site Plan walkway system

Figure.50 Approach: Floating walkway

New paths and walkways are introduced to connect the neighborhoods to the wastewater treatment plant. The light metal grill walkways merge with or are extensions of existing trails lifting them off the ground and through the canopy of the trees. Some walkways are passive, watching the processes of the site at a distance hidden within the trees, occasionally extending out to offer a view onto the site.

Others are more daring, meandering within the trees until it reaches the clearing of the wastewater treatment plant and thrusting itself over the pools of rushing wastewater. The path thickens above the water tanks and the railings tilt outwards offering an invitation to watch and stay a while vulnerable to the odors and sounds of the water.
The floating walkways play with the boundaries of the site, between the safety of the pure city and the filth of the wastewater treatment plant.

Figure.51 Approach: Floating walkway

Figure.52 Approach: Entrance

The walkways converge at the mound, the tallest point within the site. The existing mound which covers the digestors is extended and connected back into the landscape concealing the addition of a tertiary treatment space below it. The mound forms an informal separation between the existing operations of the wastewater treatment plant and the public space preserving visual connections while allowing critical operations on site to proceed undisturbed.

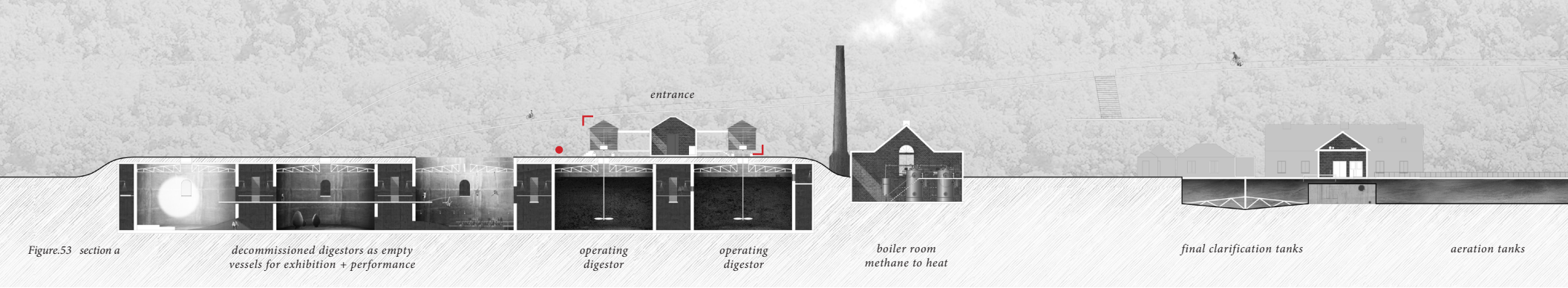


Figure.53 section a

An existing cluster of sheds sitting above the mound is the main point of entry. They are encased within a glass enclosure on display as operating artifacts of the site. Within the glass enclosure, the interior of the sheds are cut away and revealed, housing the machines that churns the wastewater sludge within the digester tanks below them.

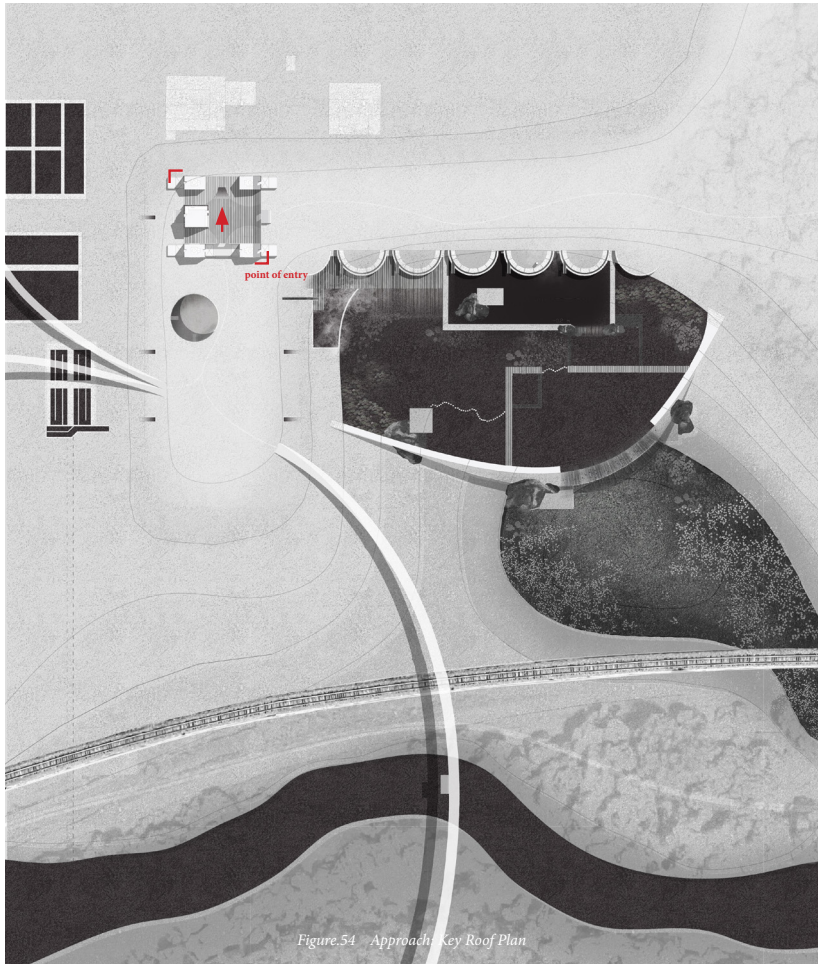


Figure.54 Approach Key Roof Plan

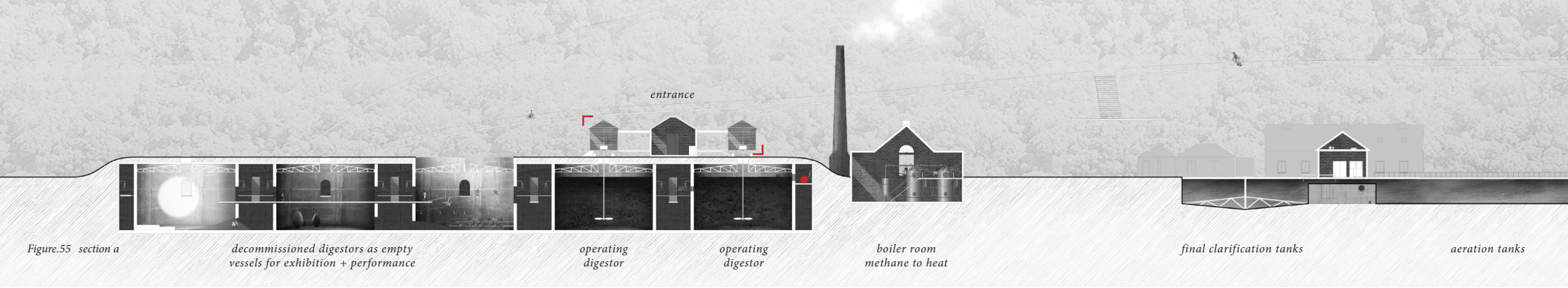


Figure.55 section a

Figure.56 Approach: Bowels of the City

Stairs cut through the floor bringing people underground into the bowels of the city, between the large cylindrical concrete digesters. Windows into the digesters give glimpses into the churning sludge where organisms break down the filth of the city into methane gas to heat the wastewater buildings and the steam room.

The walkway leads to the underground tertiary treatment space containing water filtration machines where water from the end processes of the secondary treatment is diverted into for further treatment. The darkness of the underground is illuminated by the skylights and their reflections on the pools of rushing water. The movement of the water is projected on people's faces distorting them.

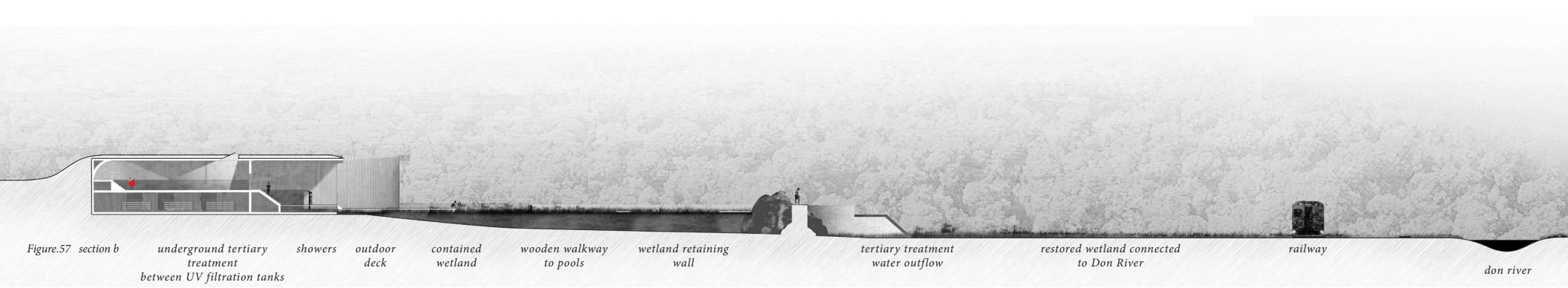


Figure.57 section b

Figure.58 Tertiary Treatment: Wastewater reflections

Figure.59 Tertiary Treatment: Key Plan

Figure.60 Tertiary Treatment: Floating Faces

Steps downwards bring people between the tanks at eye level with the surface of the water, watching as others float between tanks of water, making eye contact with strangers acknowledging the smell, and a shared discomfort.

Water is carried from tank to tank through pipes guiding people through a series of water filtration processes. First, the ultrafiltration process filters water using membranes with the pore size of 0.1 micron, removing high and low molecular weight substances such as sodium and calcium. Next the rows of UV tanks deactivate DNA remaining in any organisms. The Reverse osmosis process then filters out drugs and viruses. At the end of the hall, the water receives the end process of filtration through the ozone activated carbon filtration machines which removes odor and taste. [30]

30. Renee Cho, "From Wastewater to Drinking Water," Earth Institute\ Columbia University, 2011, https://blogs.ei.columbia.edu/2011/04/04/from-wastewater-to-drinking-water/.

Figure.61 Shower

Passing through the archway of the wall, the sound of the flow of water continues through the wall falling below into tanks that sit below the walkway. The large tanks hold the newly filtered water that once ran through the city and the bodies of its inhabitants, spilling out from spouts, under which people are showering.

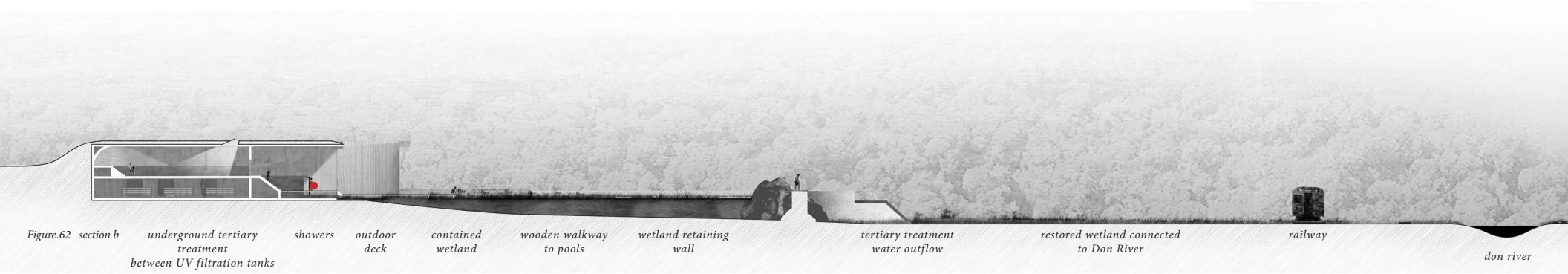


Figure.62 section b

Bodies catch the water spilling out washing away their filth, yet their eyes and mouths are closed weary of the cleanliness of the water that washes them. The water falls through the wooden planks under their feet bringing the dirt washed away from their bodies towards the wetland, within which people swim.

Figure.63 Shower: Key Plan

Figure.64 Changerooms

The bays of changerooms are intimately arranged within a semicircle, resembling the digester tanks. The sun penetrates the skylights, and its warm yellow glow heats the concrete and floors. The small frosted glass windows break the monumentality of the concrete, opening views towards the wetland and a blur of moving bodies.

From the outside- in, the foggy windows distort views of faces, feet, legs and ankles… their occupants allowing a comfortable vulnerability.

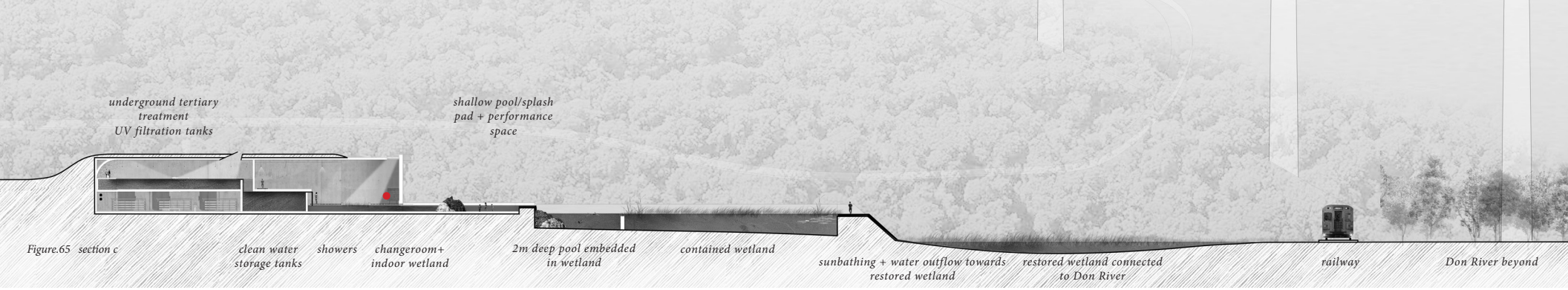


Figure.65 section c

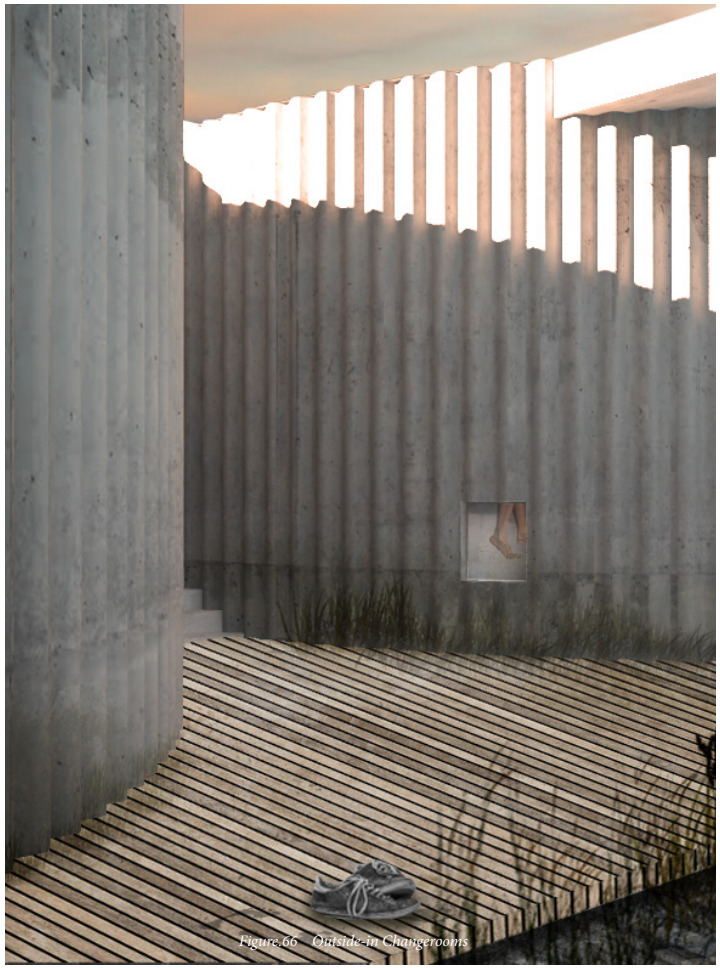


Figure.66 Outside-in Changerooms

Figure.67 Changerooms: Key Plan

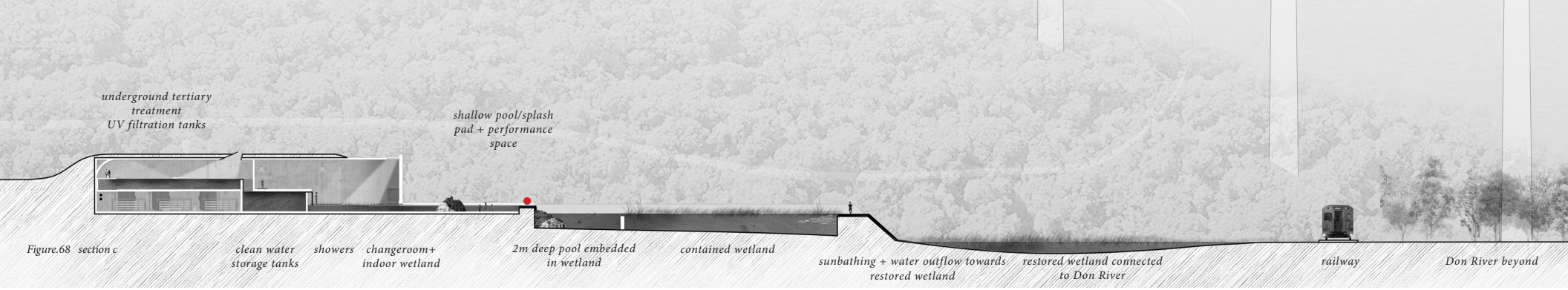


Figure.68 section c

Figure.69 Wetland Swimming Pool

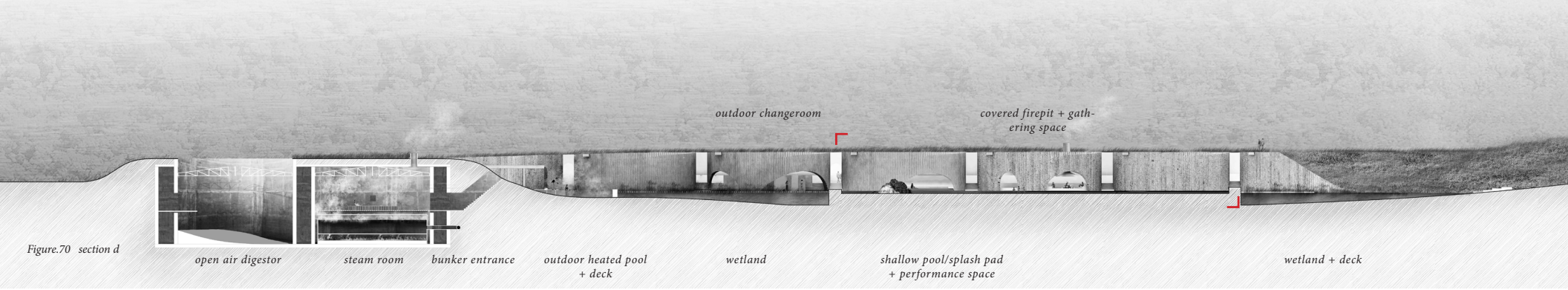


Figure.70 section d

Following the flow of water beneath the floor, and slipping between the bays of concrete cylinders, the wetland is revealed cupped within the mound. A shallow pool which receives water from the plant sits above the wetland, within which people soak their feet, and cool down during hot days.

A concrete island within the pool is a stage for performance or play, and the edge of the pool acting as seating or sunbathing. The concrete border drops away at the edge of the pool, creating a waterfall converging the water into a deeper pool contained beneath the surface of the wetland.

Figure.71 Wetland Swimming Pool: Key Roof Plan

Figure.72 Third Pool

A discrete path leads into a third pool embedded deeper within the wetland, concealed by tall cattails, reeds, and other wetland species. There is a loss of orientation with only sounds of waterfalling and the occasional train passing by. It is a found space shared between strangers.

As the water is bathed in, the wetland species continue to filter the water.

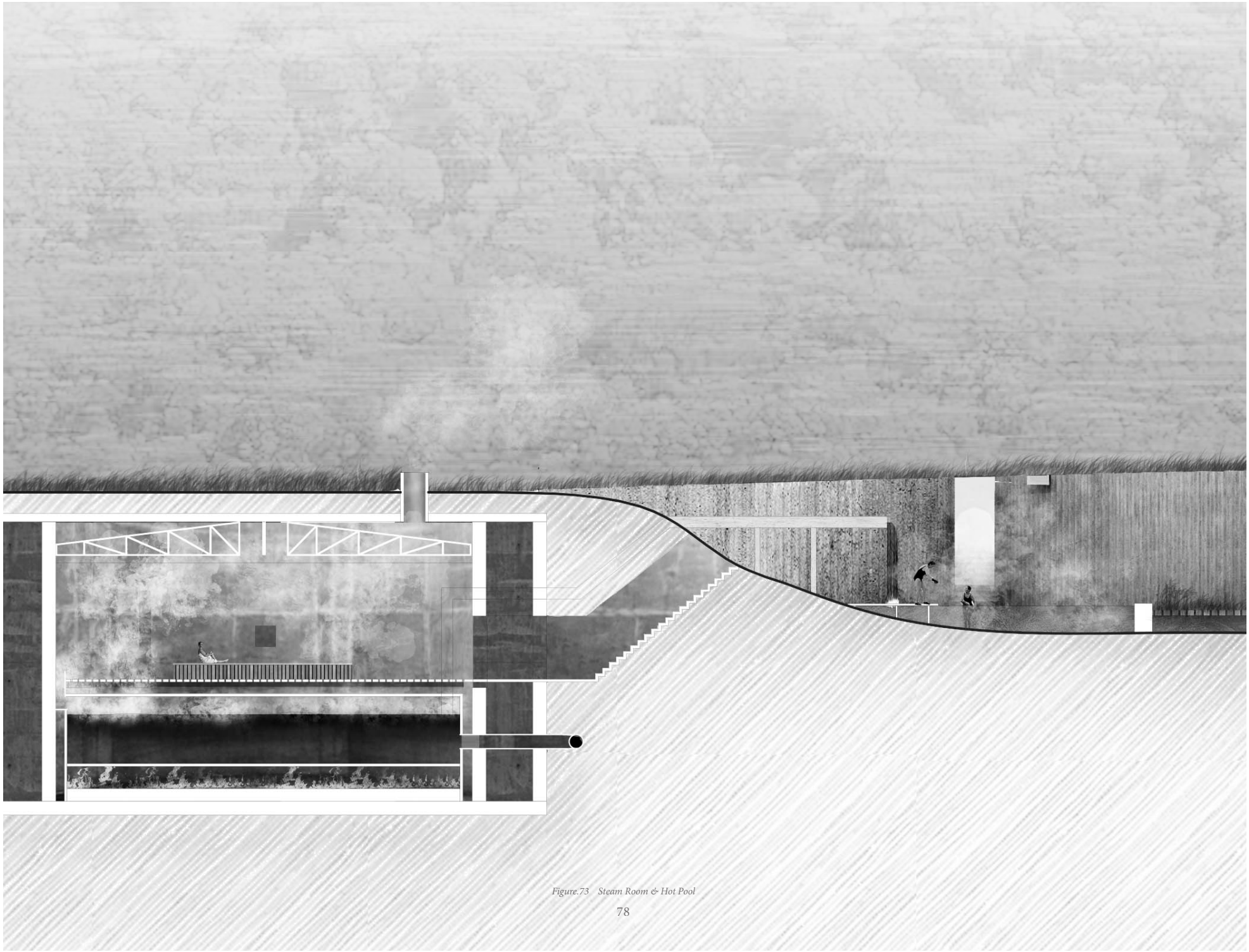


Figure.73 Steam Room & Hot Pool

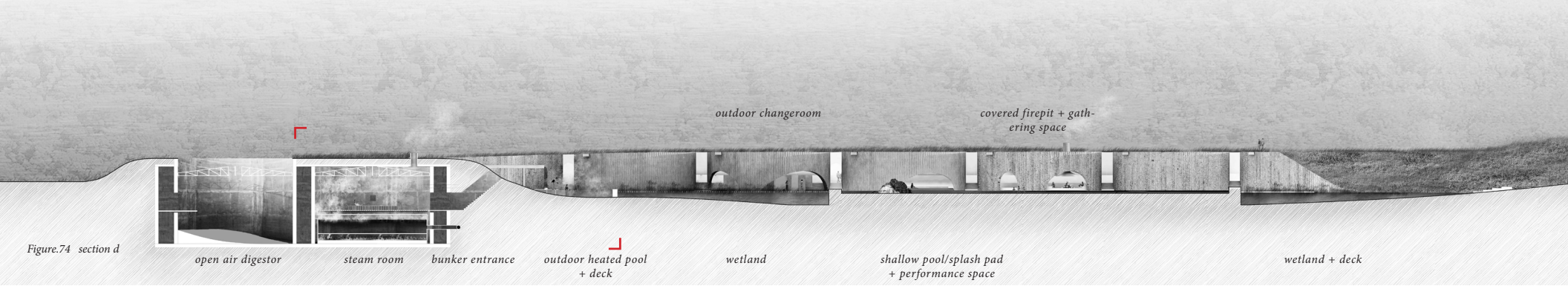


Figure.74 section d

The last pool operates as a heated pool during the wintertime. It sits above the wetland receiving hot water through a water channel from the boiler and steam room within the converted digester.

Figure.75 Steam Room & Hot Pool

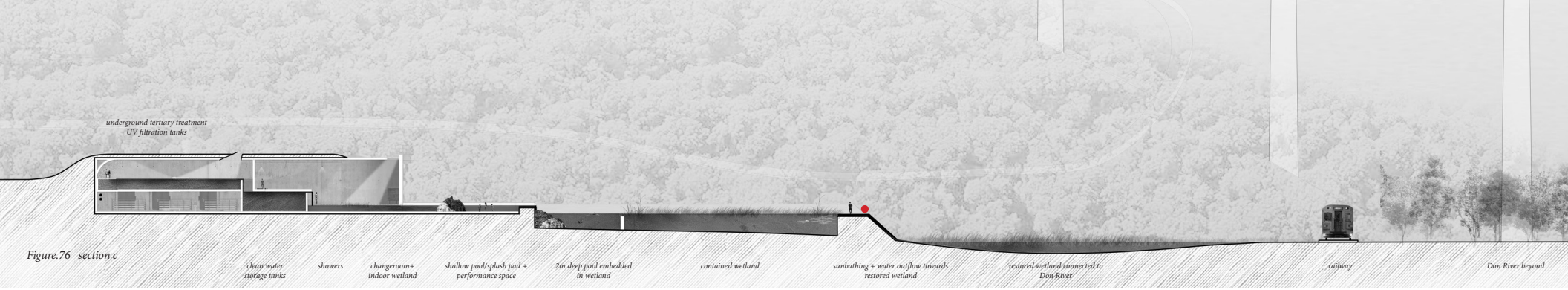


Figure.76 section c

Figure.77 Retaining Wall

The swimming pools and the wetland is held by the retaining wall which swells with water released from the tertiary treatment process. Water slowly trickle down its sloped face where people sunbathe and play watching as the water rejoins the restored wetland which filters the water a last time before it flows into Don River.

Existing entrances into the underground bunker space lead onto existing catwalks which float between the 15 m wide by 10 m tall digestors.

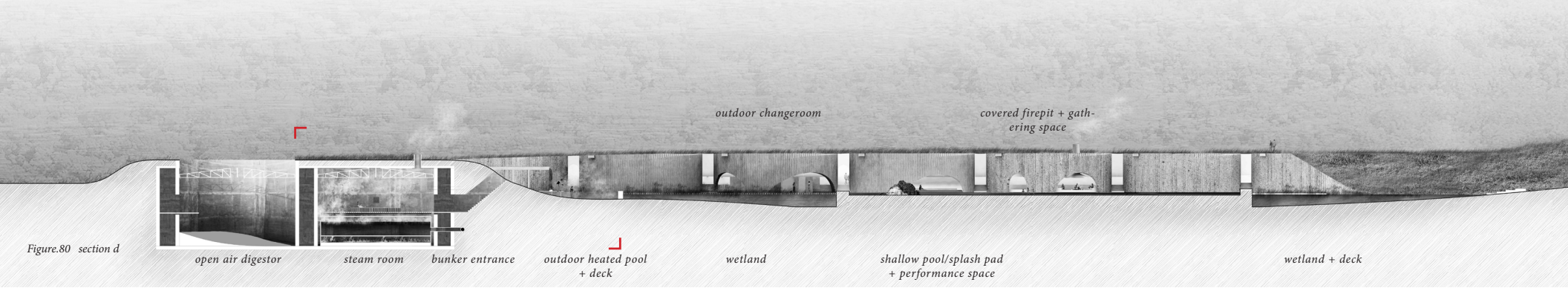


Figure.80 section d

Figure.78 Bunker entrance

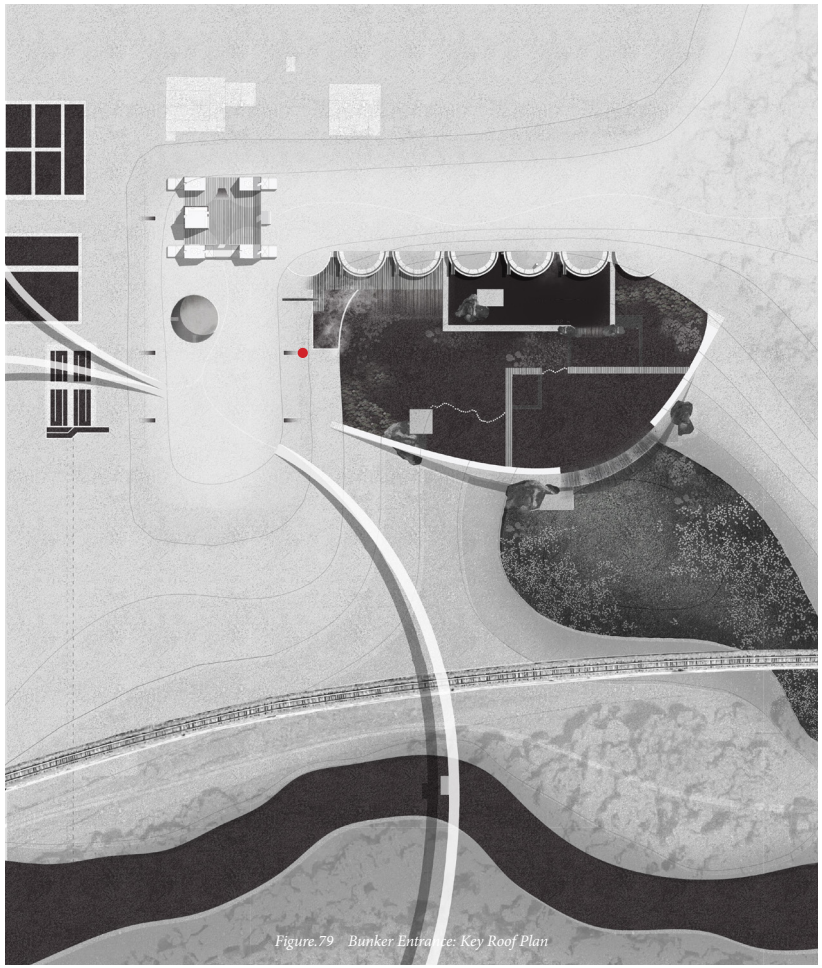


Figure.79 Bunker Entrance: Key Roof Plan

Figure.81 Walkway between digesters

The once decommissioned bunker allows three digesters to retain its original function. One digester is converted into a boiler and steam room, while the others are left as empty vessels appropriated as spaces for art installations and performances. New walkways extend into and through the concrete cylinders leading visitors from one realm of space to another, witnessing something beautiful and spectacular taking the place of the sludge that once churned within it.

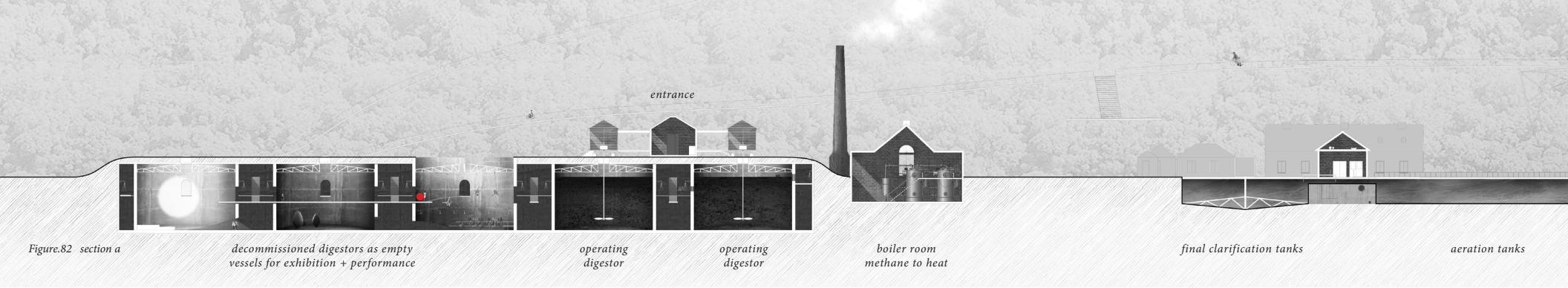


Figure.82 section a

Figure.83 Inside Digester

Figure.84 Underground Digesters: Key Plan

Figure.85 Gallery: Bottom of Digesters

Stairs from the catwalks lead to the bottom of the digesters, where people experience the space and artwork in more active ways. The base of the digesters drape open encouraging the interconnectedness of activities and artworks. Visitors slip from one digester to the next, the experience is an exploration of space, light and darkness, sounds,of eachother and the self.

Exiting the bunker space, people leave the site from the mound they arrived from, returning, or continuing along another path.

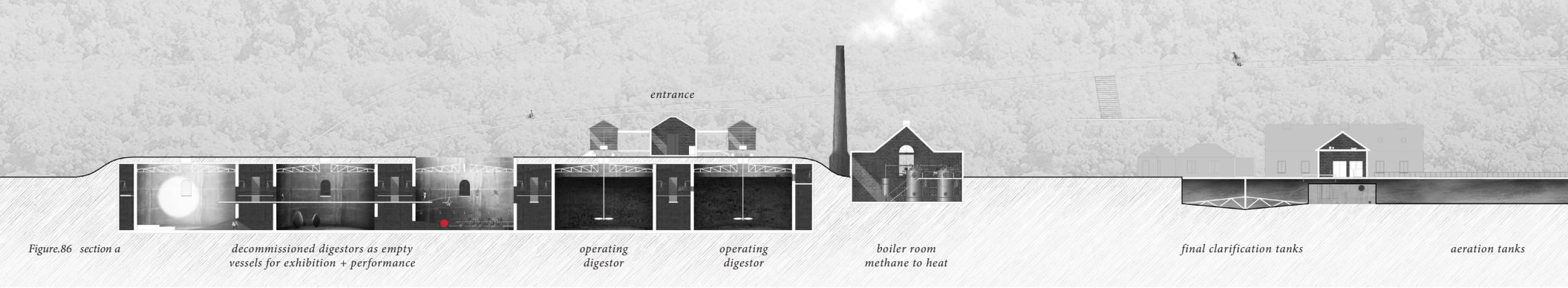


Figure.86 section a

decommissioned digestors as empty vessels for exhibition + performance

operating digestor

operating digestor

boiler room methane to heat

final clarification tanks

aeration tanks

Figure.87 Gallery: Open Air Digester

Figure.88 Gallery: Open Air Digester

CONCLUSION

The choreography through the site is not meant to force interactions between others but rather to provide a shift in perspective in how we perceive dirt or cleanliness, strange or familiar, in order to provide opportunities for meaningful interaction as a negotiation of differences. The interconnectedness and ambiguity of dirty and clean spatial categorization enhance moments of vulnerability allowing each person to reflect on, question, and perhaps rethink the ways we perceive those we see other to ourselves.

...

This thesis is meant to be read as a metaphor for broader issues and questions of what it means to live together, and with our natural environment. More contextually, it takes a stance on the role of the architect within the fragility of the natural environment and the adaptive reuse of industrial buildings. It also tries to grapple with the aesthetics of designing a space for everyone.

The right balance between overdesigning and underdesigning within the wastewater treatment plant can cause an endless debate as with the adaptive reuse of any industrial space. The beauty of these spaces lie in the memory of their former use and the way their forms translate and give life to new purposes. Overdesigning them often leads to the erasure of their past and a loss of charm and personality. The design of the wetland pools and tertiary treatment plant take inspiration from existing forms on site, while programming is kept minimal. The ambiguity of these spaces with the use of architectural cues, invites anyone to engage with it in meaningful ways.

The use and construction within the ravines are also topics of much debate between people who find it severely underused, and those who want to maintain it as the untold secret of the city. The ravines are the last of the remaining untouched wilderness in the city and is home to several species, it is no wonder that there is hesitation in promoting its use to the public. However, creating a point of gathering within the ravines can help us to understand the intimate relationship we have with the natural environment and each other. Revealing the operations of the wastewater treatment plant help us to understand the cycle of water that flows through each of our bodies, the city, the sewers, the don valley ravine, the lake, and back again. Thus, the opportunity to create a place for everyone within the ravines should not be used to create a tourist attraction or a place that capitalizes on visits, but should remain as the same kind of escape that Jakob and Athos experiences in *Fugitive Pieces*. When designing in these spaces, it should not be forgotten that they are often occupied by the youth and the homeless. The effects of over institutionalizing the designed space is a message to keep out or conform. Its wild and unpredictable nature should not be tamed but rather seen as an opportunity to abandon our public personas and experience and understand others and the natural environment from new perspectives.

The aesthetics of what the design of the public space should be like is difficult to say. Reflecting on the writing and works of Krzysztof Wodiczko and Lina Bo Bardi, I realized the communication between the building and user is incredibly important in the way people act and engage with each other and their environment. Much of this communication is through the aesthetics of the choreography through the site, the small moments of interaction, and detail. The design is brutal and powerful, contrasted with whimsical and delicate elements. It is meant to age with time, stained with water and algae, with overgrown plants. It is a reflection of ourselves, alive with uncertainties and contradictions. It can be seen as beautiful or playful, but it has also been described as "scary" or from "scenes of a horror movie". The goal of the design is not to achieve either, but rather an aesthetic which focuses on moments which may bring us to pause and to simply notice something banal (because it is out of place), frightening, everyday, or fantastical. Beauty itself is subjective, however, the effect of experiencing something beautiful is the "radical decentering" of self that Elaine Scarry writes about in *On Beauty and Being Just*.

> *When we come upon beautiful things... they act like small tears in the surface of the world that pull us through to some vaster space... we find we are standing in a different relationship to the world than we were a moment before. It is not that we cease to stand at the center of the world, for we never stood there. It is that we cease to stand even at the center of our own world.* [31]

This decentering is what the design tries to achieve. The decentering may be similar to R.D Laing's idea of reorienting the self to understand another, or Kristeva's notion of recognizing oneself as a foreigner. The intent of the thesis is to create a provocation which challenges preconceived ways of seeing and doing in our everchanging environment.

With the trajectory of the society and the world, it is necessary to question our preconceived ideas of the non-stranger and the stranger, the pure and the filthy. The thesis asks how architecture can aid us in recognizing these categorizations and to live with and as an other.

31. Elaine Scarry, On Beauty and Being Just, Princeton: Princeton University Press, 1999

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