Revitalizing Montreal's Industrial Fabric:

A Case Study of the Pointe-du-Moulin and the Farine Five Roses Flour Mill.

by
Anthea Baudoux

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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

This thesis explores the revitalization of Montreal's industrial fabric by examining the unique site of Pointe-du-Moulin and its famous "Farine Five Roses" flour mill. This pier is known for being home to numerous flour mills, key structures that have influenced architects around the world with their monumental scale and simple forms. Flour mills played an essential role in shaping North America's urban fabric, communities and society.

However, these landmark structures have disappeared from the cities' landscape, leaving only a few flour mills remaining in Canada. Most of these mills have been demolished, abandoned or relocated as cities expand into their industrial zones. These areas, often considered to be neglected and not accessible to the public, seem to be an ideal option for new residential development. This is especially apparent in Montreal, where Pointe-du-Moulin is now at the heart of a new urban redevelopment called "Bridge-Bonaventure". This development will lead to the demolition of numerous industrial buildings, giving little space and attention to the renowned Farine Five Roses flour mill.

This thesis emphasizes the importance of flour mills in North America and proposes an urban design strategy that integrates and creates a public identity around the Farine Five Roses flour mill in Montreal. This thesis aims to preserve this industrial site's unique character and create a development unique to Montreal. The preservation of this flour mill will demonstrate that this industry can coexist with residential housing while enriching life on the pier and creating a common identity. This approach will revive these structures' historical and cultural values while meeting the city's future needs.

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Dedication

In loving memory of my grandfather, Didier Baudoux, who taught me to live life to its fullest and to find beauty in everything.

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Image by Likhitha Varikuti, 2024

Introduction



Fig. 0.1 : View from the Canal Lachine looking at Farine Five Roses Flour Mill during a Festival Season in Montreal

Image by Author, 2024

Introduction

"
Demolishing is a decision of easiness and shortterm. It is a waste of many things – a waste of energy, a waste of material and a waste of history. Moreover, it has a very negative social impact. For us, it is an act of violence.
"

Anne Lacaton
(Wainwright 2022)

Background & Problems

In recent years, the future of many historical buildings and industrial structures have been challenged by new urban development. In the name of progress and economic growth, some cities chose to transform (or alter) their industrial landscape, disconnecting them from their original purpose. Since these industrial landscapes are often viewed as obsolete structures, they have lost their cultural significance and no longer participate in today's urban lifestyle, leaving cities to redevelop these areas. In this view, some cities have decided to demolish or, in the best case, reuse these industrial buildings, transforming them and giving them new uses that better meet today's needs.

However, despite the benefits of these decisions, which address housing shortages and increase tourism, the disappearance of these sites in our urban fabric also has consequences. One of these consequences is that modifying historical landscapes, and its industrial structures tends to erase the rich past of these cities and, by extension, a part of their identity. What binds a community together is the ability of citizens to recognize each other as part of a common ideal. This shared ideal might differ from one community to another but should remain a determining factor in the development (or re-development) of a city's urban fabric.

This tendency to demolish and abandon industrial buildings is predominant in North America and is also evident within the flour milling industry. This thesis will show that this industry has played a key role in urban redevelopment across multiple cities, Montréal being one of them. Flour mills were also responsible for communities' economic and urban growth before the industry significantly declined, leaving most of these structures obsolete, demolished or pushed to the outskirts of cities. While these structures are less prominent in the North American landscape today, a few continue to operate along city waterfronts, raising the question of their future role as cities expand into their industrial zones.

Research Question

This design thesis will address the following question: How can we integrate an operating flour mill's industrial scale and historical significance into a high-density urban development while creating a common identity that connects the mill's heritage to contemporary Montréal?



Fig. 0.2 : Farine Five Roses Flour Mill acts as an entrance gate to Pointe-du-Moulin Pier, Montreal

Image by Author, 2024



Fig. 0.3 : Walking pass an abandonned Grain Elevator, Annexe 5, in Pointe-du-Moulin, Montreal

Image by Author, 2024

Aims

This thesis intends to explore how these industrial buildings, far from being a liability for the development of today's cities, can be an integral part of the city. Their planning and preservation should be guided by their potential to enhance the city's character and livability. Moreover, one of the reasons for the neglect of flour mills is the lack of knowledge about their history and their lasting impact on our cities. If people had a greater understanding of their evolution and their role in the urban redevelopment, we could better appreciate these buildings, and encourage their integration into our urban fabric as iconic Canadian architectural monuments.

Methodology

In order to answer the research question, a case study of a specific site in Canada was studied: the "Farine Five Roses" flour mill in Pointe-du -Moulin in Montréal. This site was of interest for two main reasons. First, this mill, despite its age (built in the early 1940's) is still operating today and plans to for many years to come. Second, this site has recently been the subject of a new proposed urban renewal called Bridge Bonaventure: a project that aims to build multiple residential units in the sector with some working spaces by 2050. The planned result will be a much denser development that will involve demolishing many industrial buildings (but not the Farine Five Roses flour mill).

The premise of my study is based on the assumption that the Bridge Bonaventure development is moving forward as planned, with its vision of high-density residential and mixed-use spaces by 2050. I take for granted that the core aspects of the proposal, such as the overall density increase, the creation of residential and working spaces, the adaptive reuse of the two-grain elevators B and B1 on the Northern part of the site and the preservation of the Farine Five Roses flour mill, are already set. My study does not challenge the overall development plan. Instead, it focuses on how Pointe-du-Moulin residential buildings and the existing operating flour mill can be better integrated into this new urban landscape while keeping its industrial character.

This thesis research is divided into four chapters. The first and second chapters will discuss the history and significance of the Flour mill. The third and Fourth chapters will look at the specific case study of Pointe-du-Moulin and Farine Five Roses Flour mill and offer a design proposal for the site.

In the first chapter, we will explore the rise of flour mills and how they became symbols of strong and prosperous communities. In the second chapter, we will expose the impact flour mills and their grain elevators have on shaping cities' architecture and urban fabric. Some case studies will be analysed in this chapter to understand how modern cities have delt with their flour mills.



Fig. 0.4 : Elevators B and B-1 in Pointe-du-Moulin, an abandoned structure in Montreal that has been vacant for years.

Image by Author, 2024



Fig. 0.5 : Elevators B-B1 sides and its Annexe 5, in Pointe-du-Moulin, Montreal

Image by Author, 2024

The third chapter will study the history and importance of the site's case study and the Farine Five Roses industrial complex. Here, we start by tracing back a historical timeline of the sector, showing how all the information discussed in chapters one and two is closely intertwined with the Pointe-du-Moulin site. We will see that the urban transformation of the site over the years has resulted in profound changes in the building's identity. We will also discuss the challenges it has overcome and the ones it faces today with Bridge Bonaventure.

Finally, chapter four will propose alternative designs to overcome the problem of densification and denaturalization induced by the proposed housing project. The design intends to increase the site's unique elements, which have been lost over the years, and reactivate its abandoned infrastructures into lively hubs with diverse activity. Waterfrontage and the old conveyors are an integral part of the project, as is creating streets that reduce car traffic and increase pedestrian and bike accessibility.

We will conclude with a quick reminder of the main points of all chapters and will open with some reflective remarks.

Chapter 01

The Evolution and Importance of Flour Mills in North America



Fig. 1.1 : Nature Reclaiming the Abandoned Marine "A" Grain Elevator in Buffalo, NY

Image by Author, 2024

The Evolution and Importance of Flour Mills in North America

Chapter 01

"
[T]hese silos are a vital part of the history of Canada in the same way as the brooding castles of Europe reflect the past.
"

Eberhard Zeidler
(Vervoort 2006, 13)

1.1 Introduction

Canada's development is often attributed to its vast railway networks and the many rivers and canals that connect cities together. But how did these elements become part of our landscape? What has driven their growth and expansion over the years? The purpose of this chapter is to present an industry which, in my opinion, is not sufficiently valued and for which little research has been done on the effects of its activity on Canada's cities and economy. The aim is to show the importance of North American flour mills, which are now often obsolete and abandoned and which tend to be pushed out of cities. We will explore the origins of this industry and how it has become a central element of Canadian and American cities, impacting its economy, community and society.

1.2 Early Origins of Flour Mills

People have been making flour for centuries, developing techniques that have evolved significantly over time. Initially, this process was on a much smaller scale and utilized simpler methods than today. Despite these differences, flour production has always served the essential purpose of providing food for communities and animals. Flour can be produced in many different ways, using different types of grain and being combined with different parts of grain. However, for the purposes of this thesis, the flour will be assumed to be made from the wheat plant by extracting the wheat berry or kernel, which is the seed of this plant (Figure 1.2).

The origins of flour production date back to 7000 BC, as noted by Fran Gage, when “fragments of sickle blades, mortars and pestles left by the Natufians of Palestine indicate that people grew and used cereals [...]” (Gage 2006, 2). People had to find techniques to crack this hard wheat berry and extract what was inside to create food that was edible. One of the methods Gage found was to “mix the crushed kernels with water to make an edible gruel” (Gage 2006, 2). So, these early “mills” were simply pieces of wooden stone or mortar and another piece of sandstone used to rub the wheat berries back and forth to grind them (Anderson 1938, 261). This technique, known as “saddle stone”, used rubbing and pressure shearing and was the most common process used by the Indigenous peoples of North America to make flour. (Anderson, 1938, p. 261).

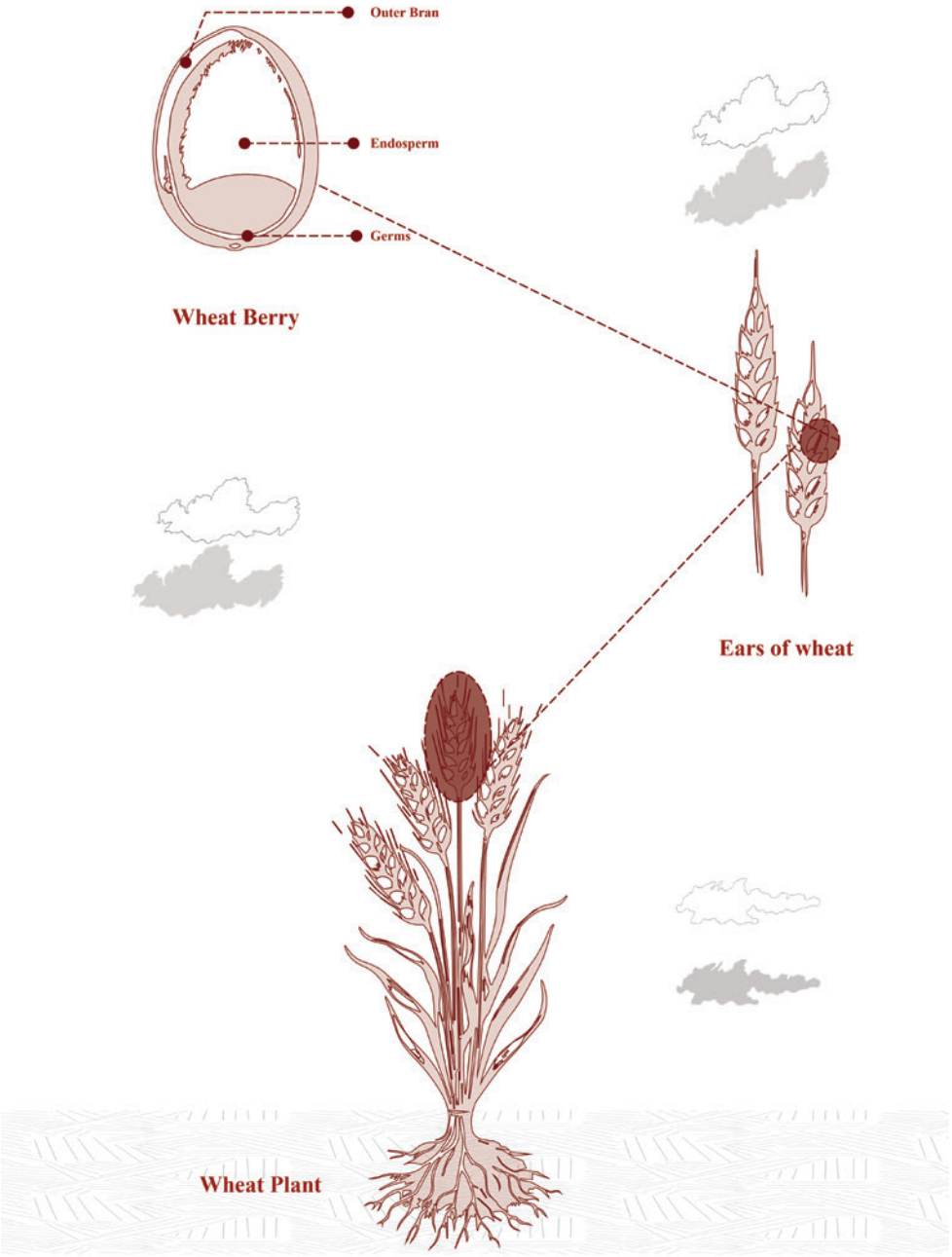


Fig. 1.2 : Anatomy of a Wheat Plant: The Origin of Flour

Illustration by Author



Fig. 1.3 : This image captures the imposing beauty of the American Elevator, Buffalo, NY

Image by Author, 2024

1.3 The Evolution of Flour Mills

As man evolved and the years passed, new types of "power" and crushing emerged to improve flour making (figure 1.4). This evolution of flour milling techniques is characterized by a gradual shift towards more efficient, automated and precise methods. This progression led to increased production and improved flour quality while also impacting the type of buildings used to produce the flour. This evolution allows us to understand better how architectural typologies have evolved to adapt to new machines and production techniques. Today's flour mills really stand out from their earlier models, with their imposing size and simpler forms, featuring their grain elevators that store the unprocessed wheat (Leung 198, 149-150).

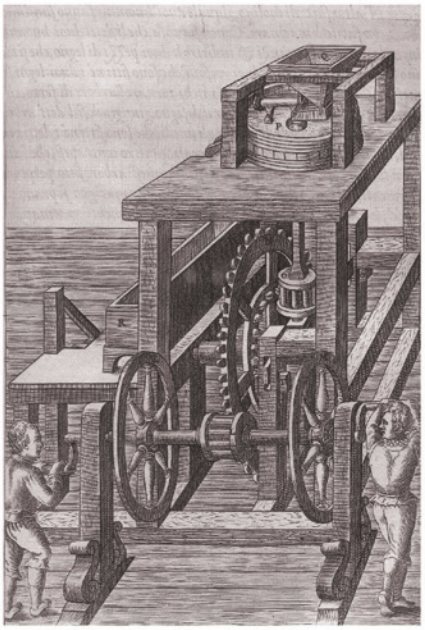
It is important to understand this evolution and adaptation of human life, as it shows the development of technology over the centuries, which impacted all types of industrial infrastructure. Industries began with only a few basic tools to produce what was necessary, but today we need to produce more at an ever-increasing pace to meet the needs of a growing population in a global market economy. This evolution has impacted the size of industrial infrastructures, which have grown over time and are now often seen as obstacles and disruptions in North American cities.

Figure 01



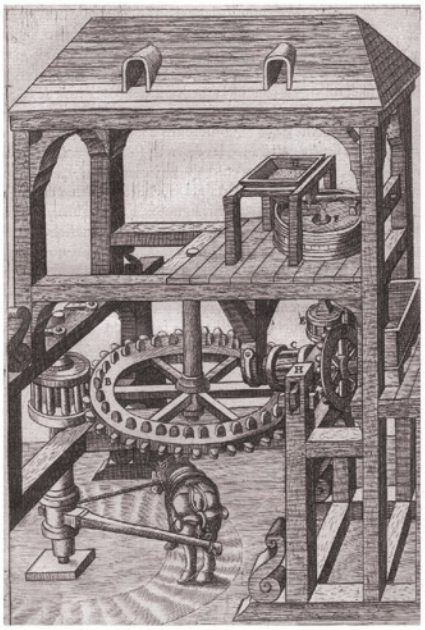
7000 BC
Grain Mill Powered by Hand

Figure 02



3100 BC - 322 BC
Grain Mill Powered by Men

Figure 03



200 BC - 100 BC
Grain Mill Powered by Animals

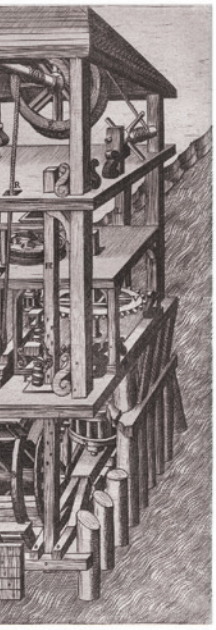
Figure 04



19
Grain Mill by Wa

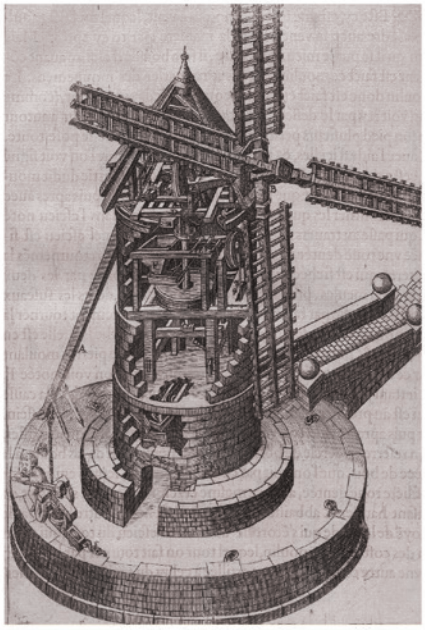
Fig. 1.4 : This Timeline shows the Evolution of the Flour Mill Industry through its Advancements in Technology and Capacity

Illustration by Author, Images Sourced from different Sources:



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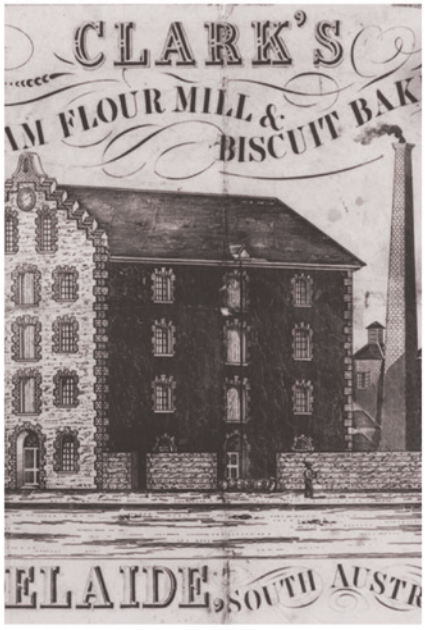
Figure 05



901 AD - 1000 AD

Grain Mill Powered by Wind

Figure 06



1784

Grain Mill Powered by Steam

Figure 07



1887 - Today

Grain Mill Powered by Electricity

1.4 The Rise and Expansion of Flour Mills in North America

The North American landscape, before 1840, was dominated by small, local flour mills, with most towns and villages having their own mills to serve their local population. Factories and industries at that time operated on a small scale, producing mainly for their respective communities (Nord 2020, 255). Flour exports were limited for many reasons, one being that transportation systems were underdeveloped, making exports to other cities extremely difficult. The other was that prior to rail infrastructures, milling industries did not have the advanced features needed for mass production, explaining the modest size of buildings and storage facilities at that time.

What drastically impacted the size and occurrence of flour mills was the milling revolution in America, which took place between 1820 and 1920 (Nord 2020, 249). This revolution marked a significant transformation, replacing traditional millstones and wooden waterwheels with larger, more modern buildings that used advanced technologies, such as steel rollers and steam engines. (Nord 2020, 260). David Paul Nord explains that this revolution can be understood through six key elements: power, transportation, agriculture, processes, machinery, and marketing (Nord 2020, 251). This journal article exposes the impact flour mills have on our environment, affecting these six crucial elements that ensure the smooth running of a city. For example, the machines highlight how technology has enabled the industry to automate and modernize, increasing the efficiency and productivity of the mill (Nicholson 1992, 70).

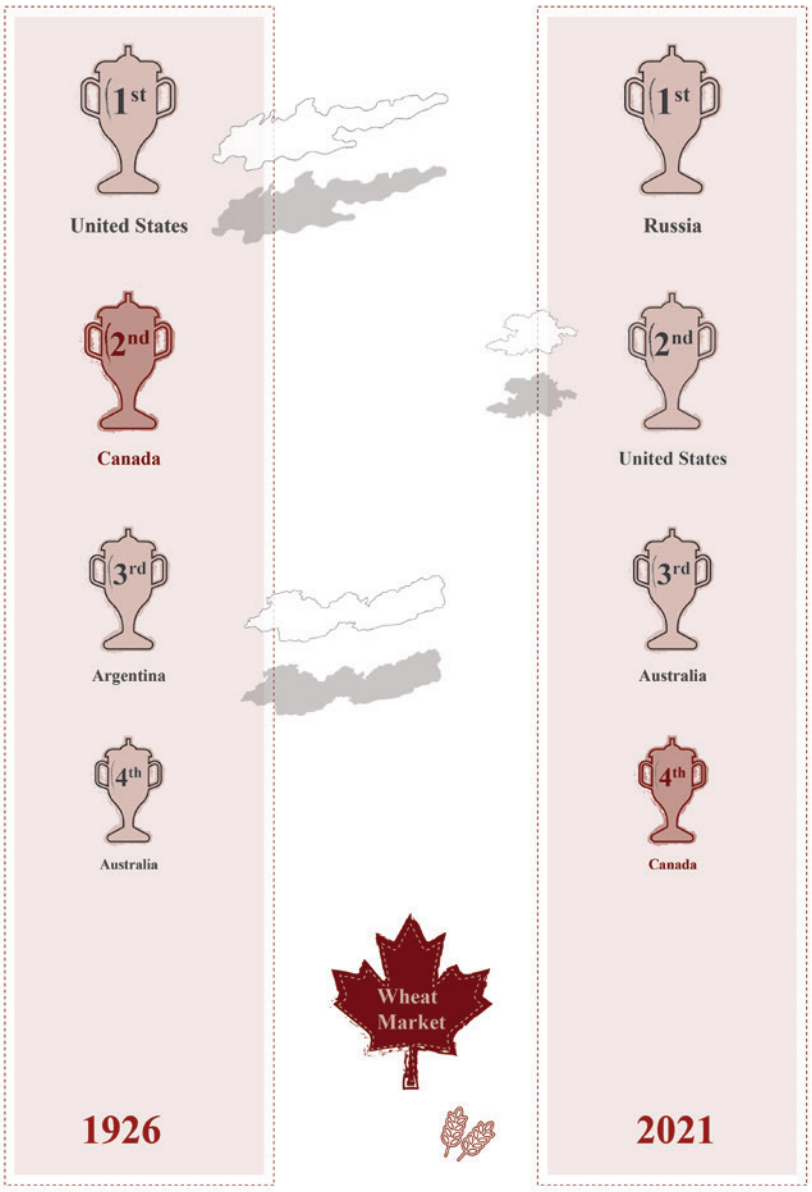


Fig. 1.5 : Canada is one of the world's largest exporters of wheat & flour in 1926 vs 2021.

Illustration by Author



Fig. 1.6 : A bridge linking the mill to its grain elevator, elements of inspiration for the design chapter.

Image by Author, 2024

New types of industrial equipment were aquired, seen as “an essential asset for the continued growth of every community, serving as a tangible symbol of newfound prosperity and progress” (Nicholson 1992, 70). It was not until the 1880s that Canada’s first grain elevators were built to increase storage capacity, enabling flour to be shipped to eastern markets and other cities (Vervoort 2006, 182). Transport also played a major role, as more rail lines were built to accommodate the growing industry.

1.5 Flour Mills: An Important Economic Landmark

Shipping flour to other cities marks an important step in the industry’s economy. This market expansion enables flour mills to continue to play an important economic role in North American cities. Most of the industry’s growth was due to the introduction of new equipment, although it was also influenced by the shift in how flour was consumed. Flour moved from being a consumer good to a production good, driving the milling industry to produce more and on a larger scale (Nord 2020, 287). The milling industry became symbolic of the prosperity of towns, which attracted new settlers and businesses and promoted economic stability (Leung 1981, 72) (Doak 2023).

Many authors, like Nicholson, in his report “A History of Flour Milling in Manitoba,” prove that the flour economy at that time was very important as it attracted and impacted many different fields to invest in these mills. Flour production was then closely linked to the growth of other industries like bag and barrel factories, milling machinery, bakery, crackers, biscuit, and cereal production (Watts 2000, 95). Nicholson also shows the large impact mills had, stating that “the construction of flour mills led to […] the growth of the agricultural sector, which in turn fueled the expansion of the entire

provincial economy" (Nicholson 1992, 32). Its economic impact can also be seen in property values. Leung indicates that the flour mills owned by the "millocracy" were so powerful that even if the mill was not located near a water source or railroad line, the land near the mills was still of high value (Leung 1981, 72).

The apperance of the grain elevator invented by Joseph Dart of Buffalo in 1843 increased the importance of these mills and emphasized the "economic well-being" of towns (Vervoort 2006, 183; Banham 1986, 110).
Grain elevators allowed wheat to be stored for longer and flour to become part of "a larger communication and global system of trade" (Vervoort 2006, 183). This international market underlined the economic importance of flour mills in North America and Canada, as in 1926, Canada became the world's second-largest exporter of flour (Government of Canada 1927). This growth in flour sales enabled flour mill owners to invest in the economy by investing in banks, railroads, and many more organizations (Watts 2000, 96). All these elements testify to the great importance of the presence of flour mills in our towns and cities, as they have contributed to the growth and development of our urban fabric.



Fig. 1.7 : This image shows an abandoned grain silo, illustrating the effects of light and shadow through openings in the concrete.

Image by Author, 2024



Before 1836

Steamboat Exportation

Before 1880s

Business trend

1885

Transcontinental Railway

Fur trade, real estate business & lumber business seemed more rewardings

The utilization of steamboats had limitations, allowing only a fraction of wheat exports to be transported.



"Wheat had become the keystone in national policy. Its production and sa construction of transcontinental railv extension of political control across t Pacific"

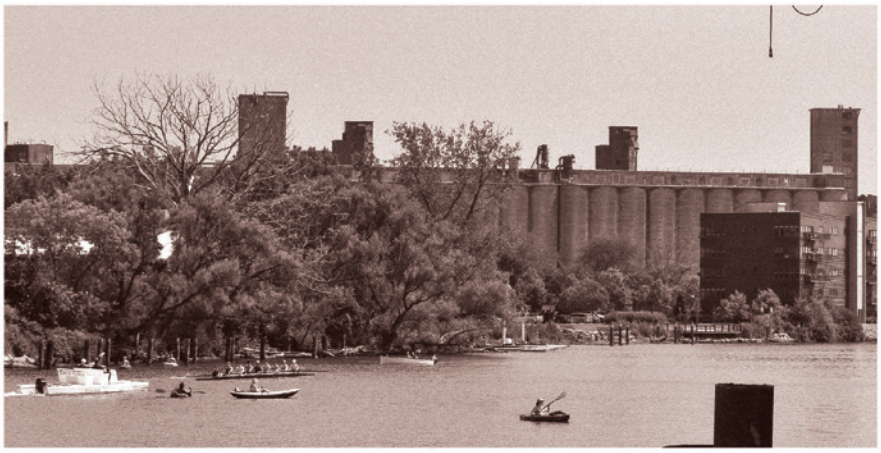






Fig. 1.8 : Timeline of the flour and wheat industry decline, showing links between flour mills and transportation.

Collage and Images by Author, 2024



Completed | *1926* *Canadian Flour Exports* | *1930s* *Great Depression* | *2021* *Canadian Flour Exports*

1st export of flour from western Canada to Glasgow, Scotland.

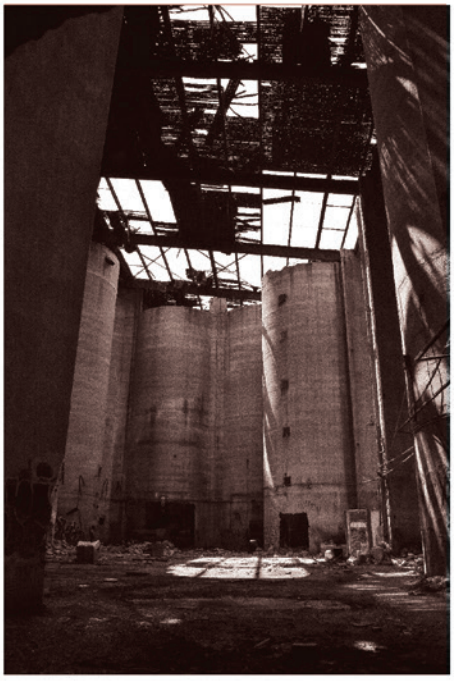
the arch of Canada's ale made possible the way systems and the he continent to the





Canada

2nd argest exporter of wheat and flour



The depression caused wheat and flour exports to fall in both value and volume.





Canada

4th Largest exporter of wheat and flour

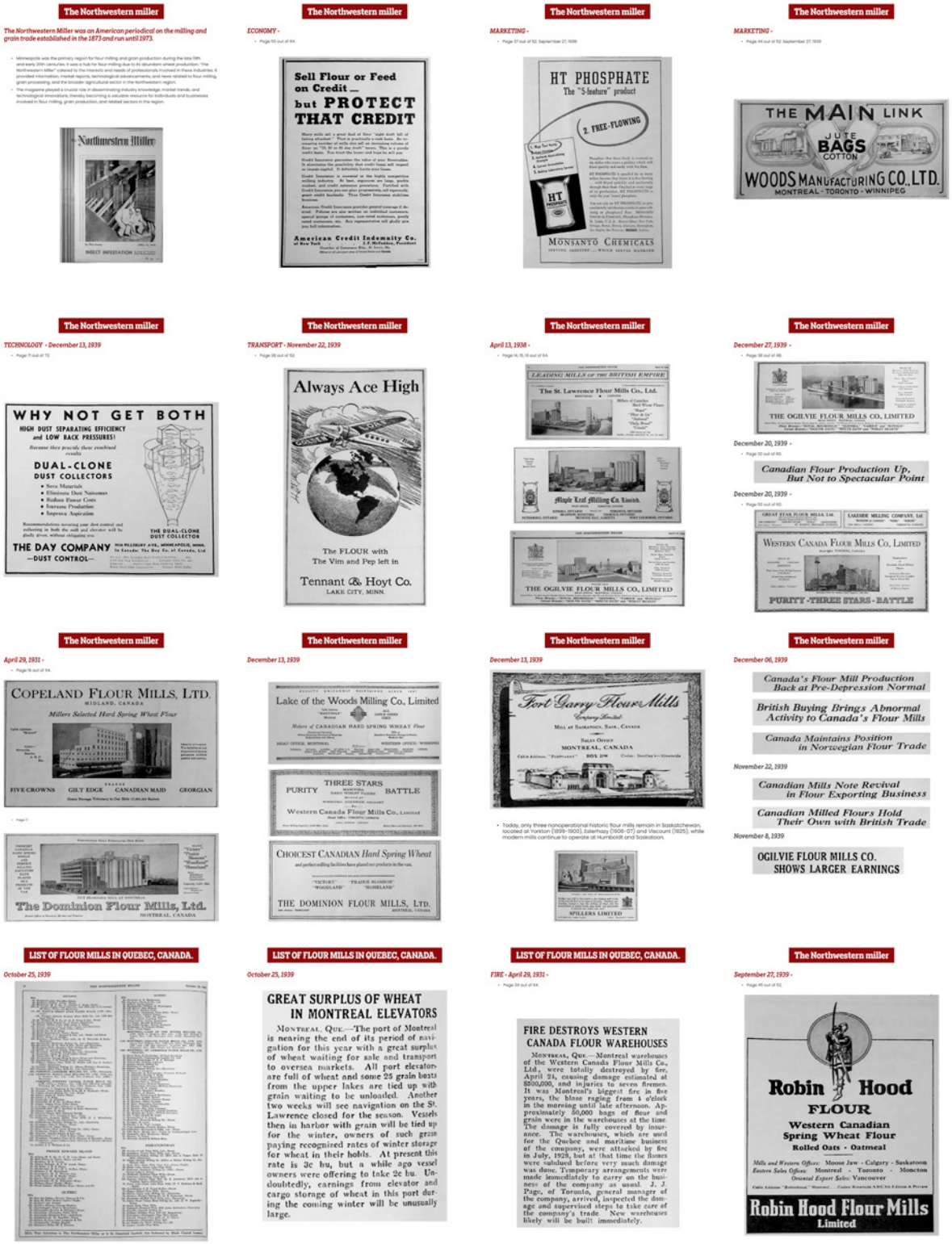


Fig. 1.9 : Analysis of recurring themes used in Northwestern Miller's magazine: Economy, Marketing, Transportation, Technology and Fires.

Illustration by Author, Images taken from the Northwestern Miller Magazine

1.6 Flour Mills: A Symbol for Canada and its community

The economic value of flour mills was not the only thing towns benefited from. Flour mills were more than just places of production; they were hubs of activity that fostered social bonds. As mentioned previously, flour mills meant that towns were prosperous, creating dynamic environments where people felt secure to live. These mills attracted "[…] doctors, bankers, lawyers, teachers, merchants, and others were drawn to the thriving community" (Watts 2000, 96). Flour mills offered the surrounding communities a place to work, grow, and learn. Children playing around mills and parents picking up their flour every week at the local mill are lasting memories that maps or plans cannot depict. These mills created value for the surrounding land, allowing the community to grow and where "stores, schools, churches and a hotel were built, and hundreds of workers and professionals settled there" (Watts 2000, 96).

The importance of flour mills in the community can also be seen in the creation of *Northwestern Miller*. This bi-weekly magazine focused on the milling and grain industry for over 100 years, from 1872 to 1973 (Society of American Archivists 2023). This high demand indicates that people were deeply interested in and impacted by the industry's progress. The magazine featured new technologies, advances in transportation, reports on mill fires, job offers and many more topics, all reflecting the importance of the mills' impact on the community and the economy. In 1912, there were 7,831 flour mills in the United States and 634 in Canada, representing a total of 8,465 registered flour mills in North America at that time (Advertisers' Handbook No. 37 Containing a List of Flour Mills in the United States and Canada 1912, 6). This gives a good indication of the number of flour mills that

might have influenced the memory of many residents and visitors. Wandering around towns at the time, you could see many different types of mills in the landscape, each testifying to its importance in shaping communities.

In Canada, mills were appreciated and were considered valuable by politicians and governments, creating a "shared meaning" among the Canadian population (Vervoort 2006, 181). Images of grain elevators were also used on "stamps, on money and at international exhibitions to symbolize Canada," receiving national recognition (Vervoort 2006, 184). When grain elevators were created, we could also see it all over the Canadian landscape. As Vervoort notes, this "ordinary industrial building of American origin has over the years emerged as a popular symbol of Canadian life, albeit one that is now vanishing from the landscape" (Vervoort 2006, 181).

Walter Herbert also described these terminal elevators as "castles of the new world" because "they are fortresses of peace, storehouses of plenty, essential links in a chain of peaceful trade and commerce". He concluded that they "constitute one of Canada's offerings to the goddess of progress". (Vervoort 2006, 195).

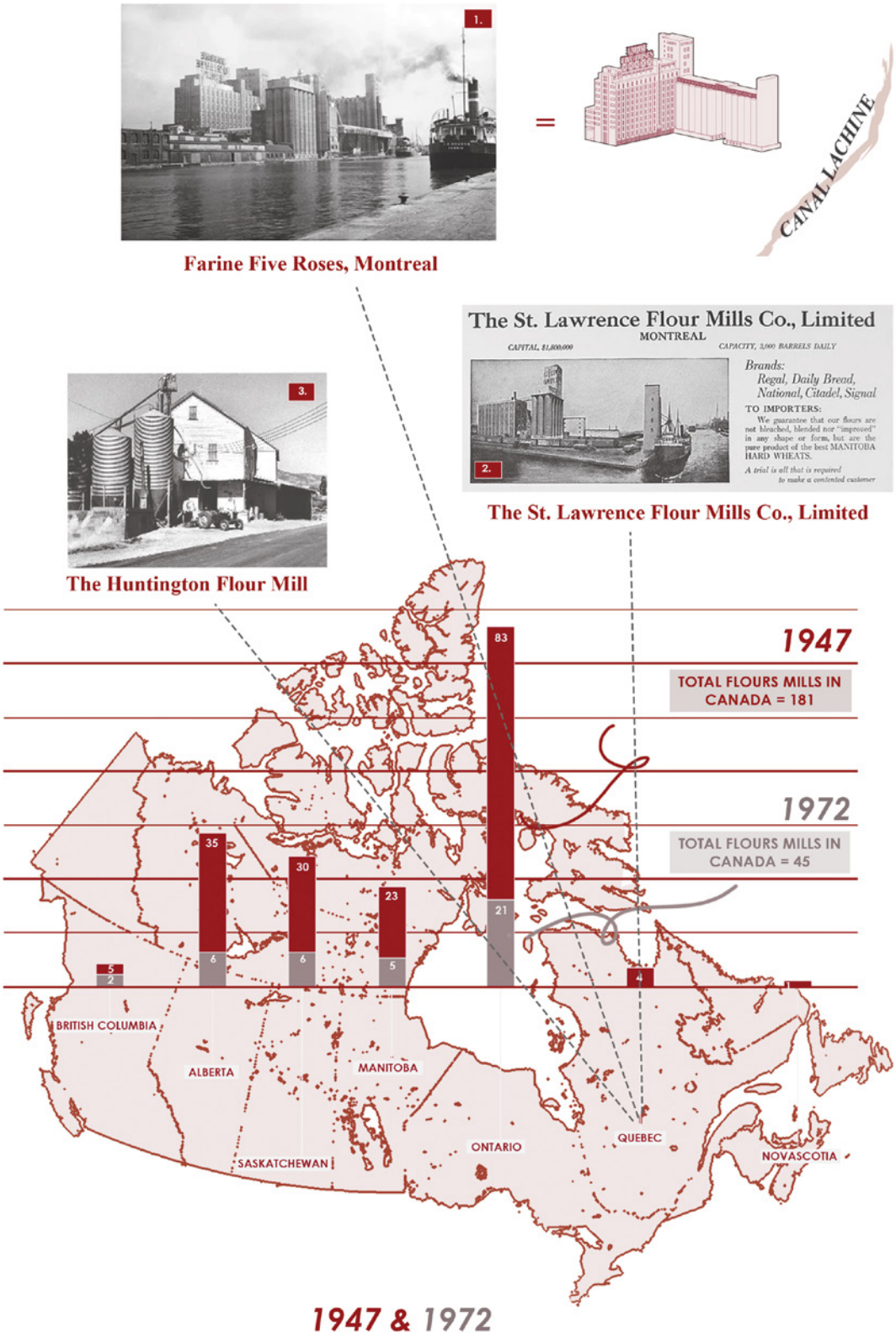


Fig. 1.10 : ***Summary of flour mills in each province, showing the significant decline in the presence of flour mills in Canada's urban fabric.***

Collage by Author, Images Sourced from the Northwestern Miller



Fig. 1.11 : *This image shows that life can still happen around these mammoth structures, people love to climb them and enjoy their apocalyptic fe*

Image by Author, 2024



el.

Chapter 02

Flour Mills' Impact on Modern Architecture and Urban Planning



Fig. 2.1 : The pure forms of the silos are inspiring, this circular staircase blends in perfectly with the structure, Buffalo, NY.

Image by Author, 2024

Flour Mills' Impact on Modern Architecture and Urban Planning

Chapter 02

"

Even now appreciation of such structures rarely becomes apparent until the last occupying enterprise closes down or until they are threatened with demolition. In the common run of local politics, it is only as they lapse into picturesque decay that they are found admirable, become the focus of battles over zoning or urban renewal, are admitted to the canons of industrial archaeology and, with luck, are sometimes deemed worthy of elevation to the status of Historic Landmarks or National Parks.*

It is not my intention here to satirize either industrial archaeology or the National Parks Service, both of which I generally hold in high esteem, but the combined effect on the public has been to leave the kind of building discussed in this study still far beyond the grasp of our general culture.

"

* Such structures = the grain elevators from Buffalo

Reyner Banham
(Banham 1986, 170)

2.1 Introduction

Flour mills and their grain elevators have played an important role in shaping the modern world. These structures, characterized by their unique forms and immense scale, have not only influenced the work of renowned architects but have also become an integral part of North America's urban fabric. This chapter looks at the impact and consequences mills have had on our landscapes through case studies of remaining flour mills. By exploring these elements, this chapter will show the ways in which these structures have been reintegrated into our cities, raising questions about their reintegration.

2.2 The Influence of Mills and Grain Elevators on Modern Architecture

In the early 19th century, the Industrial Revolution spawned also a new architectural era, impacting the design of industries and their scales (Aitchison 2014, 1). This industrial revolution primarily affected manufacturing, mining and agricultural industries, increasing their scales to accommodate the country's rapid economic growth (Aitchison 2014, 2). Industrial architecture comes in many forms and sizes, such as Walter Gropius's "Fagus factory," a shoe last factory, and the numerous grain elevators. Both of these structures are architectural milestones that have radically influenced modern architects. Out of all, they follow the design principles of the American architect Louis Sullivan, where "form follows function" (Nasar, Stamps, and Hanyu 2005, 1). Reyner Banham also offers a grand vision of these American industries and studies them from a European perspective, dedicating an entire chapter to the "Grain Elevator" in his book *A Concrete Atlantis* (Banham 1986, 2). He states that "industrial structures represented, for European architects, the brave new world of science and technology." (Banham 1986, 3). He describes that these buildings "would be as functionally honest, structurally economical and, above all, as up-to-the-minute" (Banham 1986, 7). A new architectural style emerged from these industrial prototypes: the International Style. This style was the dominant architectural style for four decades, born "out of structural and constructional necessity" and became "literal models for Modern architecture" (Banham 1986, 4-6).

During the 1910s, many famous architects drew inspiration from these American grain elevators, drawing and picturing multiple illustrations of these tall, silo-shaped structures (Banham 1986, 11). Walter Gropius compares American industrial buildings to the "work of the ancient Egyptians" because of their overwhelming monumentality (Banham 1986, 6). For Le Corbusier, the architectural strength of these grain elevators lies in "the conception of primary masses" (Le Corbusier 1986, 31). Certainly, applying these simpler forms and shapes allowed these structures to stand out from

01. Building Scale & Techniques:

- Can be considered to be “Mammoth structures.”
- Compare to windowless skyscrapers.
- Innovative Use of concrete slip-form construction.

02. Geometric & Forms:

- Simple shapes,
- An imposing volume and a curious form.
- Straight or Curved are geometric and unadorned.
- Primary forms & Classic simplicity : Cube, Cylinder.

03. An “Ordinary” Buildings:

- A vernacular and ordinary buildings in which people work and live.
- Monstrous, engaged columns devoid of ornamentation...
- Clean, uncluttered, true to its function.
- Simplistic building: Clean-lined, modest, and appropriate.

04. A Symbols of Canada’s landscape

- Convey the dynamic commercial spirit of Canada.
- Symbols of confidence, strength, and stability.
- Concepts such as timelessness and modernity.

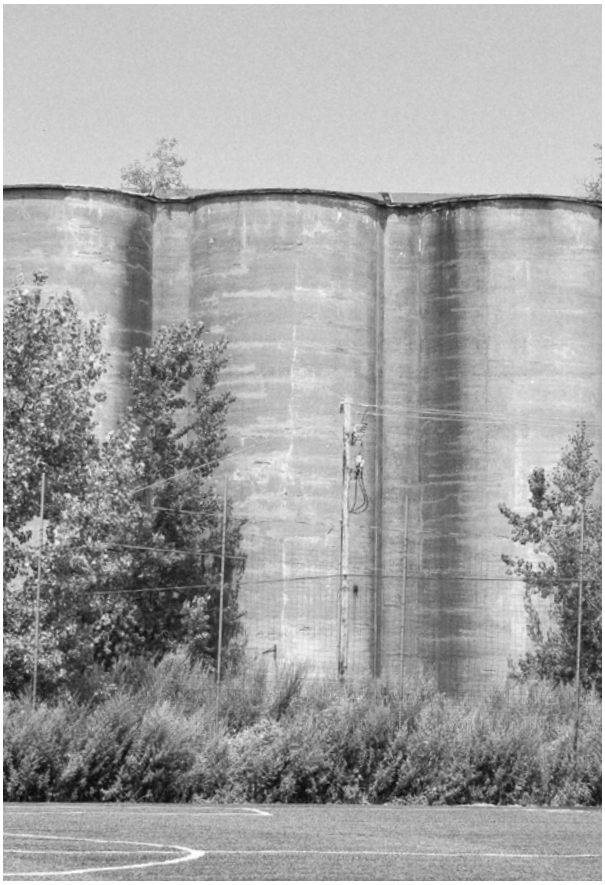




Fig. 2.2 : Flour Mills Architectural Characteristics

Images by Author, 2024



Fig. 2.3 : This Elevator Annex shows the material used at the time: Wood , Steel and Concrete, Buffalo, NY

Image by Author, 2024





Fig. 2.4 : Pure form of the reinforced concrete and greennery slowly entering the space

Image by Author, 2024.



Fig. 2.5 : Steel Conveyors attached to the Grain Elevator - Structural Cross Bracing

Image by Author, 2024.

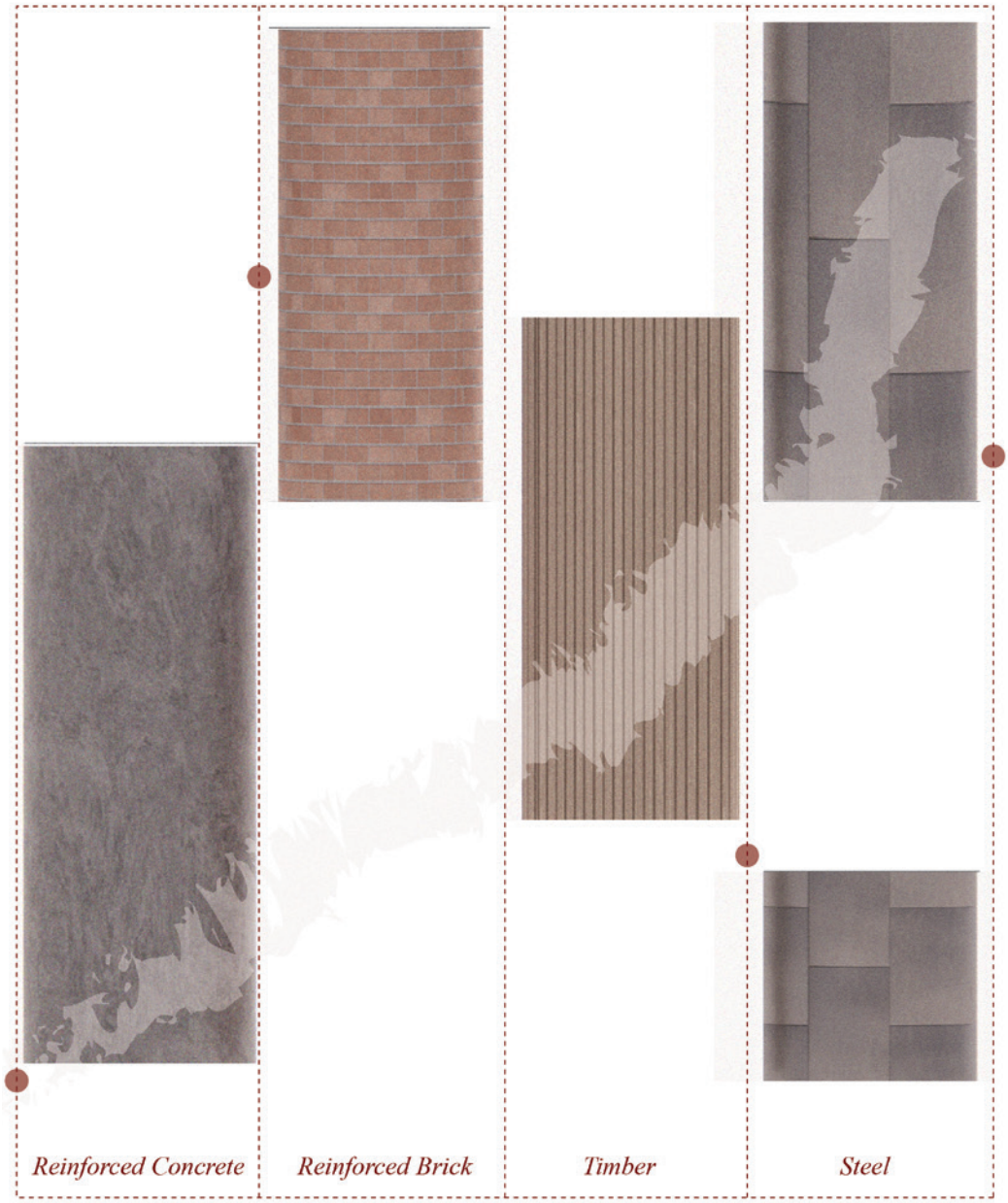


Fig. 2.6 : Reinforced concrete became a common material for building flour mills, though earlier mills were typically built using these materials

Illustration by Author

the way buildings were designed at the time. In *Towards a New Architecture*, Le Corbusier sees American engineers as being great innovators impacting the world of architecture: "the ENGINEERS of to-day make use of the primary elements and, by co-ordinating them in accordance with the rules, provoke in us architectural emotions and thus make the work of man ring in unison with universal order. Thus we have the American grain elevators and factories […]" (Le Corbusier 1986, 31)

Erich Mendelsohn also shares his thoughts after visiting Buffalo, one of the only cities "in the world possessed so concentrated a set of historically valuable elevators" (Banham 1986, 20). After his visit, he wrote to his wife in 1924 a description that is essential to understand the feeling one can get when faced with these enormous structures:

> "Mountainous silos, incredibly space-conscious, but creating space. A random confusion amidst the chaos of loading and unloading of corn ships, of railways and bridges, crane monsters with live gestures, horde of silo cells in concrete, stone and glazed brick […] I took photographs like mad. Everything else so far now seemed to have been shaped interim to my silo dreams. Everything else was merely a beginning" (Banham 1986, 6).

His description is striking; it conveys a feeling that leaves you speechless, fascinated, and inspired by the immensity of the building. You stand still and look up. You feel small but grand at the same time; you realize that these structures are man-made. It is, therefore, important that these mills and their grain elevators are preserved to reflect the innovation of the time. They provide a sensation that very few buildings do. You can love them or hate them, but you cannot be indifferent towards them.

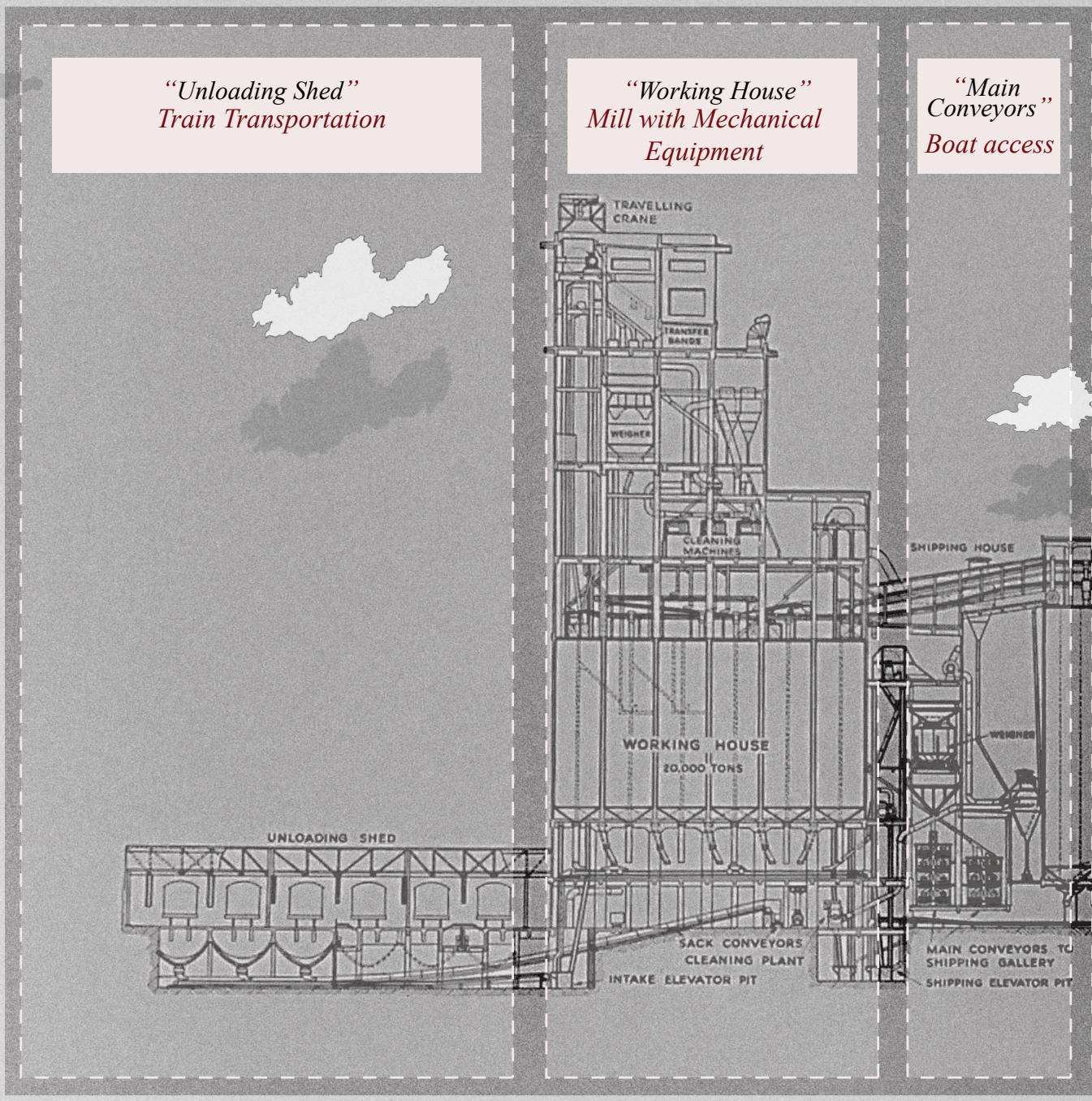
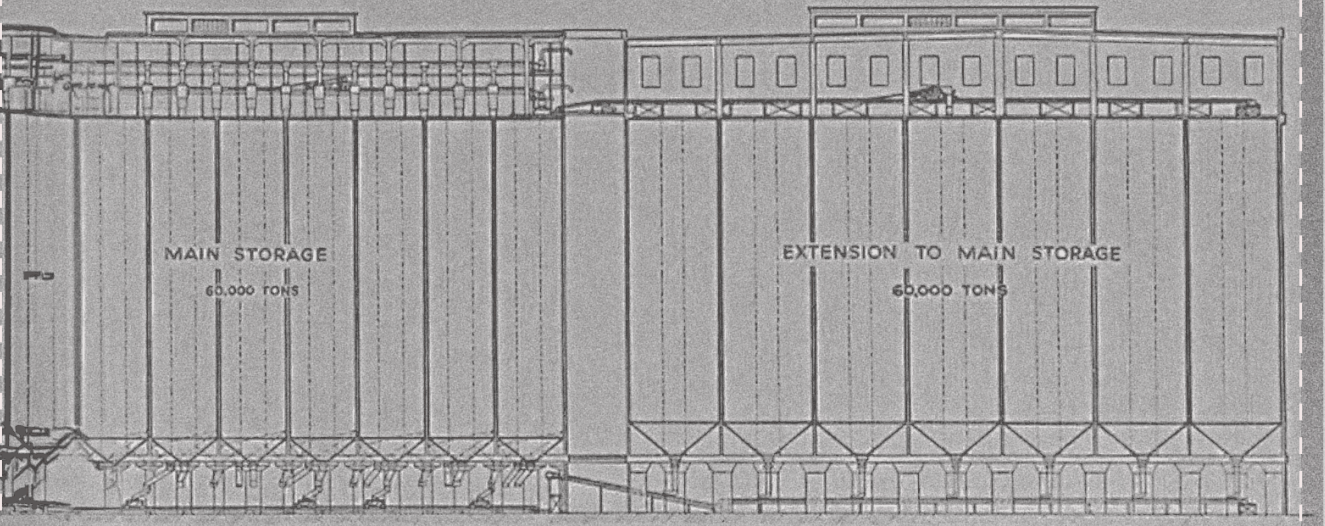


Fig. 2.7 : The main part of an operating Flour Mill, It will h

Illustration by Author, Sectional Drawing taken from the book "Granaries and Grain Handling Equipment"

"Main Storage"
Reinforced Concrete Silo for wheat storage



2.3 International recognition of mills and grain elevators as Canada's architectural identity.

While it is essential to examine the architectural significance of these mills and their influence on modern architects, it is equally important to consider their lasting impact on Canadian architecture. These mills, exemplified by their silo-shaped typologies, have become symbols of Canada's landscape and architecture, often the subject of international architectural exhibitions. For instance, Harold Kalman, a heritage planner and architectural historian, talks about the grain elevator as being "the most Canadian of architectural forms" (Vervoort 2006, 182). To emphasize their prominent presence in the landscape, the *Canadian magazine,* in 1903, reaffirms that these unique structures are popular as "EVERYBODY is familiar with the outlines of grain elevators. Their peculiar shape and enormous height at once attract attention" (McEvoy 1903, 204). The grain elevator as a building type and "as an architectural image" has also been recognized and "accepted as representative of Canada" (Vervoort 2006, 204). This section emphasizes the influence and recognition of mills in the Canadian architectural landscape.

Internationally, grain silos built out of a "concrete slip-form construction" began to attract European attention, but it is worth noting that the earliest structures were built with materials more commonly used in Canada, such as steel, brick and timber (Vervoort 2006, 188). In 1937 and 1939, Canada decided to present these concrete structures at international exhibitions, which had become stars of modern architecture. Vervoort noted that these "International exhibition buildings are another expression of Canada, intended to represent the nation and its citizens to people in other parts of the world" (Vervoort 2006, 202). The country's commitment to participate in all these exhibitions demonstrates its deep attachment to its grain elevators. For instance, at the Paris exhibition in 1937, Canada presented a building that "represented, in a scaled model, what had become an archetype of Canadian architecture: the immense grain silos lining the wheat route from the prairies to the eastern ports" (Cloutier 2011, 57, my translation). The aim of



Fig. 2.8 : Paris "International exhibition of arts and techniques applied to modern life", 1937

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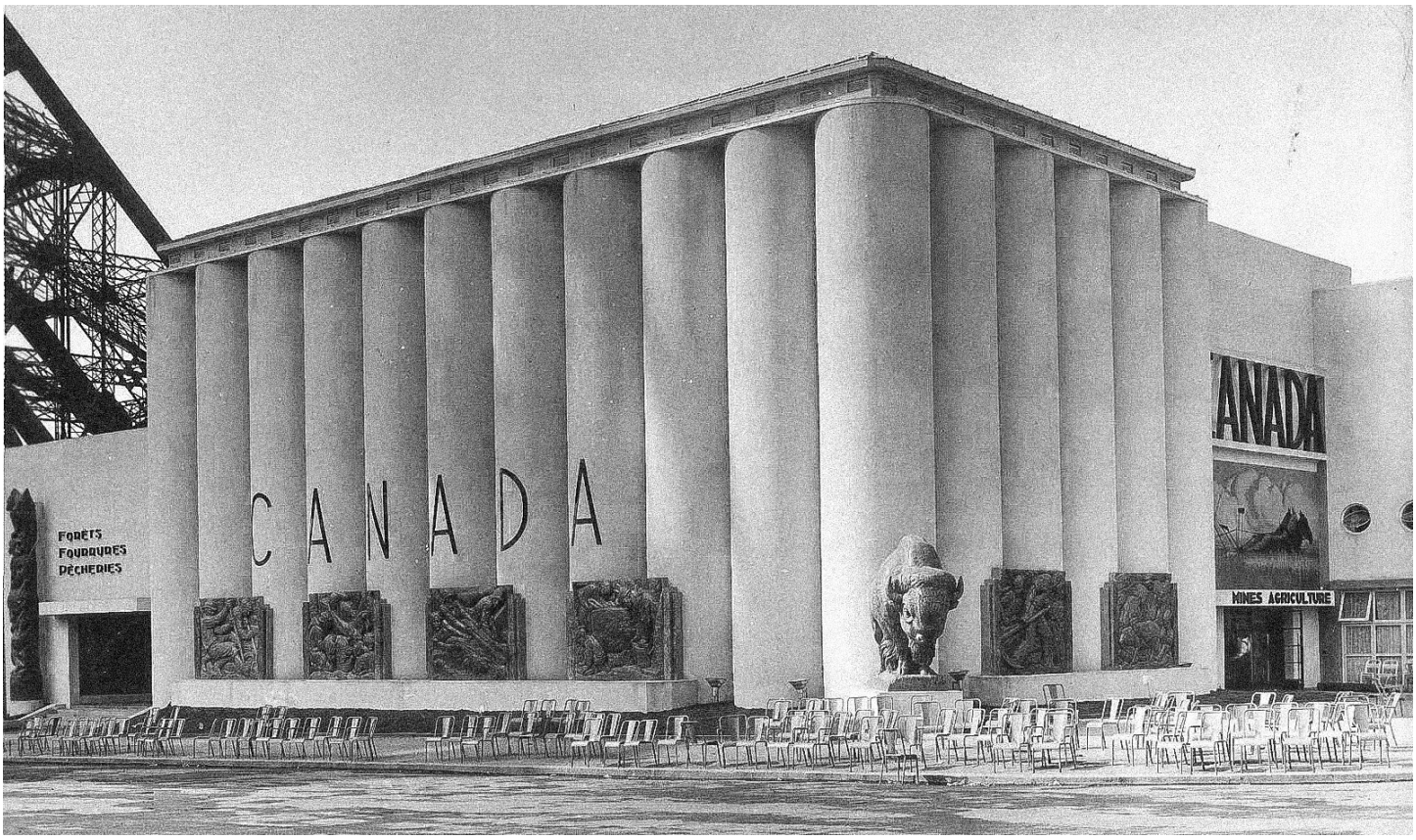


Fig. 2.9 : Marine "A" Grain Elevator, Buffalo, NY

The colour and saturation of the image were changed by the author. Image Sourced Online:



Fig. 2.10 : New York World's Fair, Canadian Pavilion, 1939

The colour and saturation of the image were changed by the author. Image Sourced Online:

this exhibition was to position Canada "as the greatest individual exporter of wheat" (Vervoort 2006, 202). Moreover, in 1939, at the New York exhibition, Canada decided to exhibit a building that was not so literal in its form but kept the principle and the main ideas of the grain elevator with some "modern lines with simplicity of form and surface detail" (Vervoort 2006, 203).

2.4 Flour Mills' Role in Urban Redevelopment

The historical, economic, technological and architectural importance of flour mills has now been established, leaving the role they played in urban redevelopment to be clarified. From 1820 to 1920, Flour mills disrupted the monumentality and rhythm of cities, often surpassing civic structures and becoming the tallest buildings in the town. Tall buildings are known to "have always been expressions of power, control and prosperity" (Wall and Waterman 2010, 78). The strong image mills conveyed at the time attracted many families and workers to the city and thus generated new urban infrastructure needs. These requirements had to be met rapidly, which meant that most of these industrial towns were built up extremely fast, with a high density of housing (Inam 2014, 212). These mills were also placed very strategically. Most mills were located near a water source, mainly for the benefit of boat transportation and water supply and, later, for the use of hydraulic power (Nord 2020, 283).

They also had good connections to land transportation networks, first near train lines and later around highways (Nicholson 1992, 30). It is even said that “the pattern of roads in Upper Canada was influenced by the location of grist and flour mills on waterpower”, a testament to the important role flour mills had in shaping our North American urban fabric (Leung 1981, 72). Looking at all these elements, we see the power of their location. Their strategic location reflects pretty much the conditions residents look for when moving to a city: a beautiful view overlooking a water source, proximity to transportation and the presence of a strong, thriving community. The influence that flour mills have had on North American urban fabric is impressive, considering that today, we hardly encounter them in cities. But why is that so? What happened to the 8 465 flour mills registered in North America?



Fig. 2.11 : *The Interior of the grain Elevators shows this abandonned steel silo storage, "Main Storage"*

Image by Likhitha Varikuti with the Author, 2024



Fig. 2.12 : *Repurposed Urban Area to welcome children around abandonned Grain Elevators, Buffalo, NY*

Image by Author, 2024



Fig. 2.13 : ***Amusement Park & Silos with a Rock Climbing Silo Wall, NY***

Image by Author, 2024



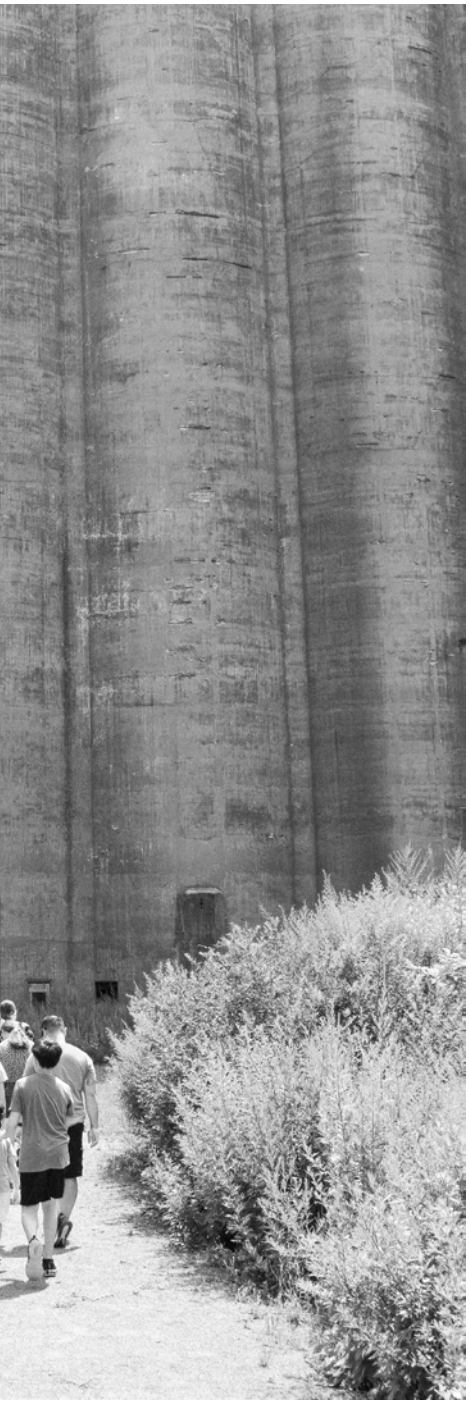
Fig. 2.14 : ***Silos, Buffalo, NY***

Image by Author, 2024



Fig. 2.15 : ***Human scale***

Image by A



and silos structures, Buffalo, NY

uthor, 2024



Fig. 2.16 : ***Silo Bars, Buffalo, NY***

Image by Author, 2024

2.5 Decline and Obsolescence of Flour Mills

While flour mills and their grain elevators had their glory days, their popularity began to decline in the early to mid-twentieth century (Nord 2020, 289). This decline resulted in a drastic reduction in the number of flour mills in our landscape, impacting their importance in the North American urban fabric. Later, this decline was also reflected in their reputation and influence on modern architecture. The decline of rural flour mills in Manitoba reflects the situation faced by most towns in North America. Several elements were responsible for the disappearance of these mills in urban areas, such as rural depopulation, economic shifts, logistical factors, and the emergence of large-scale, high-capacity mills that dominated the market (Nicholson 1992, 64-65). Small towns no longer needed their own flour mills and could rely solely on flour exports (Nicholson 1992, 64). Fires also caused many flour mills to fall into disrepair. Fires became "a threat to all flour mills because of the constant possibility of dust explosions, triggered by sparks from the milling machines" (Nicholson 1992, 35).

These events led to the obsolescence, abandonment and demolition, and of flour mills, impacting their overall reputation. In 1969, people began to refer to grain elevators in a more satirical or historical way, overlooking their emblematic features of modern architecture (Banham 1986, 15). The decline of flour mills had important consequences (see the next section) regarding how towns integrated and perceived these structures in their landscape. They no longer saw their potential as being the "actual motor, the servicing machinery of the cities" but rather saw them as infrastructure that obstructed the urban landscape (Schulitz 1992, 15). As a result, most towns decided to either demolish their flour mills, move them out of the city center or, with a little luck, leave them abandoned for long periods of time.

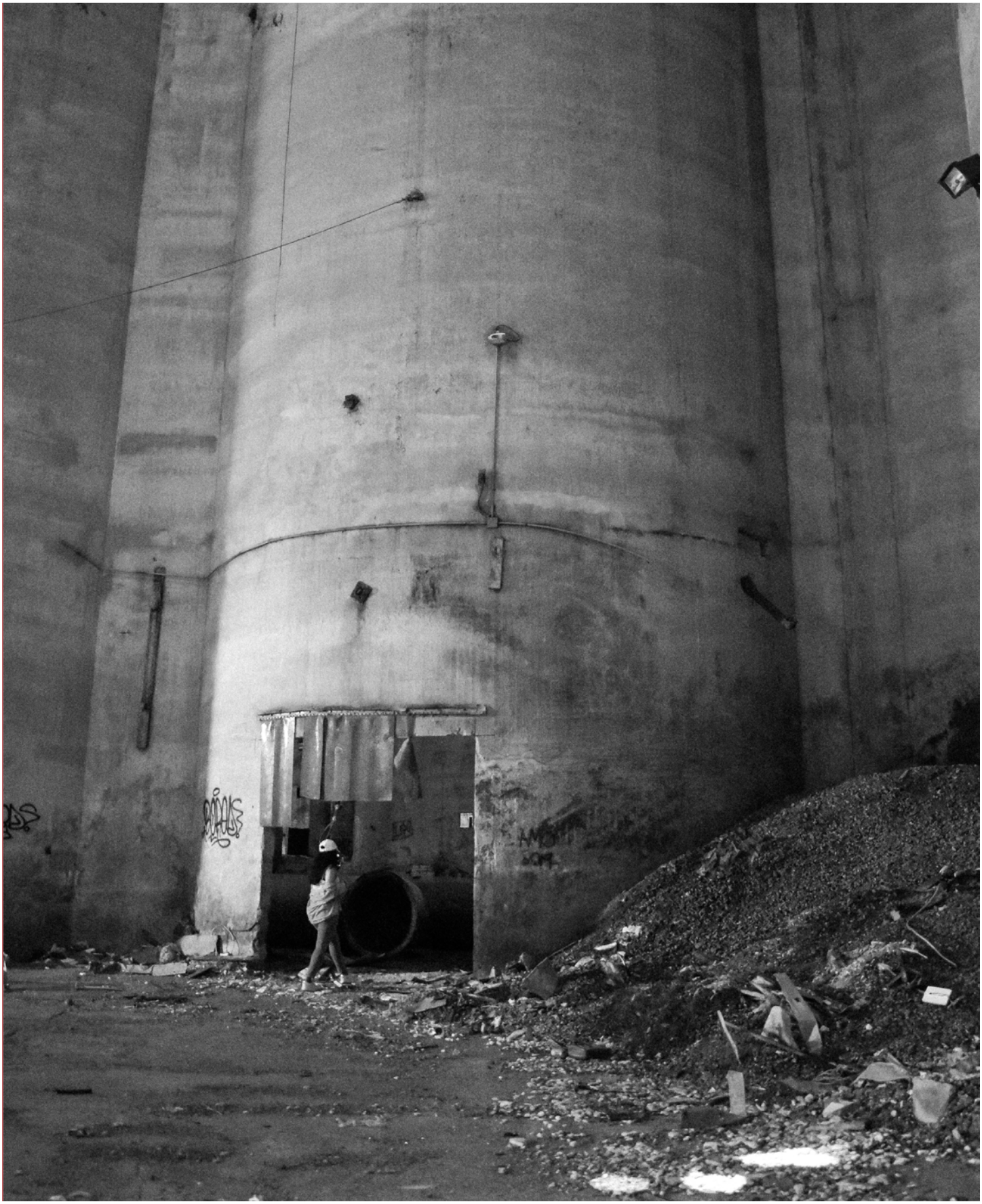


Fig. 2.17 : ***Inside an abandoned grain silo, one can feel overwhelmingly small, awed by the massive structures that surround it.***

Image by Author, 2024

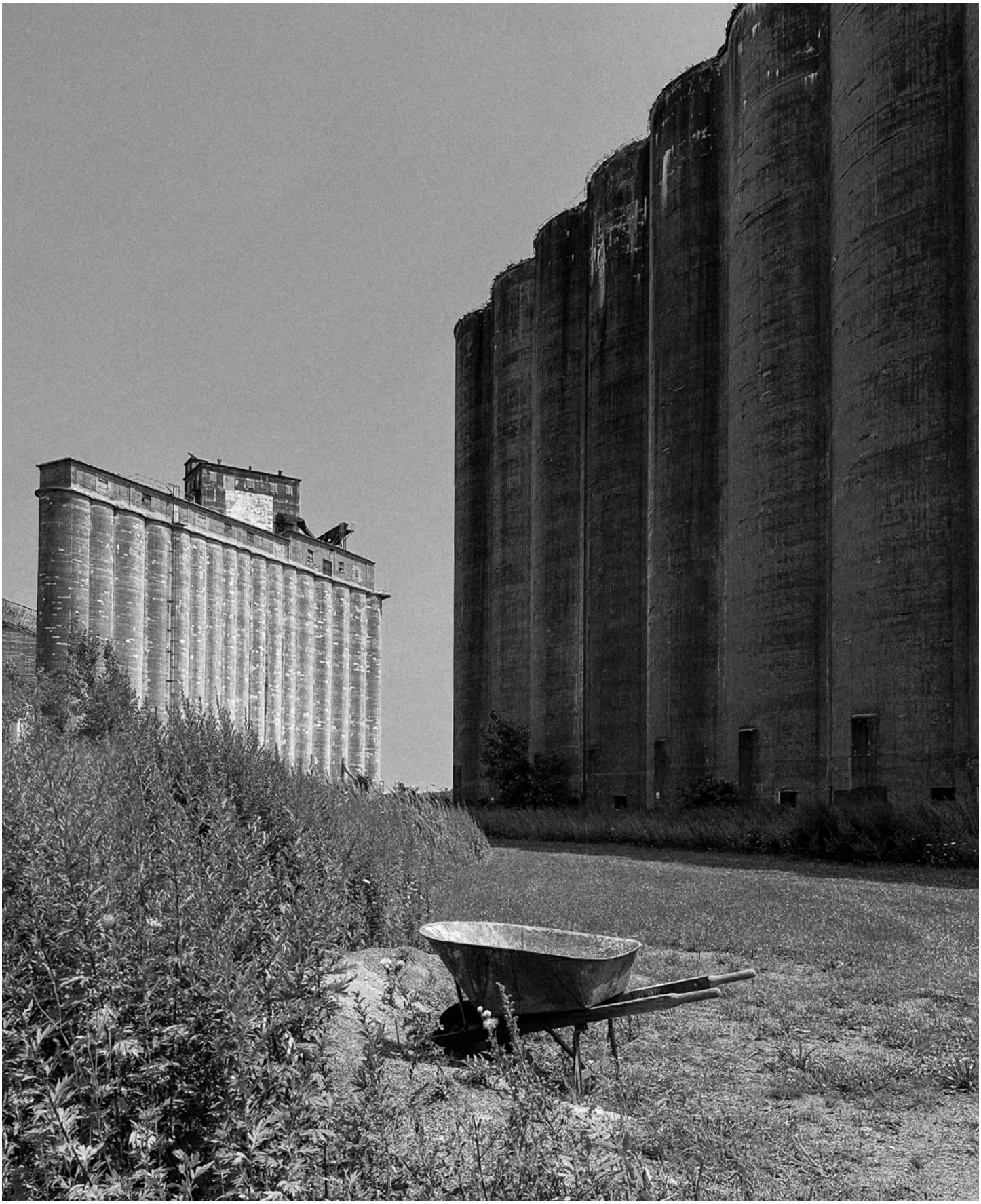


Fig. 2.18 : ***This photo illustrates how these mills can frame a view and guide you through the site, ultimately leading to the waterfront.***

Image by Author, 2024

2.6 Consequences of the Decline of Flour Mills on the Urban Fabric

Flour mills were not the only structure to be demolished and abandoned; many industrial buildings suffered the same fate. Cities considered industrial buildings to be a threat to the well-being of their citizens, creating "the division of urban function" (Schulitz 1992, 15). This phenomenon, which Helmut C. Schulitz describes as the "banishment of industry", became a "well-known problem" in cities as they started to divide land use depending on their function (Schulitz 1992, 15). In fact, the creation of this "mono-functionality" creates dead zones that leave areas suffering with little human interaction, public access, or maintenance (Schulitz 1992, 14). These buildings are left standing on vast, unplanned plots of land, and as cities expand, they gradually become part of them again. Cities, urban planners, and architects will then be forced to rethink the design of their industrial buildings to incorporate them into their total urban fabric.

Today, American cities and architects still see the potential of grain elevators as being unique infrastructure in shaping their cities. Reyner Banham insists that, although grain elevators are declining, we should not let them go unnoticed as they hold a unique and special niche in architecture:

> "I was moved by these buildings, and that was partly because I came upon them unprepared. They were as unknown to me as they must be to any student or lover of architecture because, outside the modernists' polemics of the twenties, they have practically no part in the records of architectural history and have yet to draw a critic worthy of their austere virtues. That is regrettable, for they deserve a better fate than to be left to the industrial archaeologists and prettifying rehabilitators who seem at present to be the only parties with any interest in them. They need to be brought back among "the canons of giant architecture," and they deserve far more



Fig. 2.19 : *Silo City in Buffalo attracts many tourists every year.*

Image by Author, 2024



Fig. 2.20 : ***A magic wall, surrounded by a new regenerative landscape.***

Image by Author, 2024

> respect and honor than they commonly receive in America, […] they represent the triumph of what is American in American building art" (Banham 1986, 20).

2.7 Remaining Mills Preservation

Over the past 40 years, towns and their citizens have been working hard to preserve the remaining mills and their grain elevators (Vervoort 2006, 195). The research presented in Figure 2.21 and 2.22 identifies some remaining mills in North America. The focus of this research was to understand how these mills were either repurposed or demolished and how cities have integrated them into their urban fabric. This was helpful in showing the role that flour mills still play in urban redevelopment today. The research has also attempted to locate flour mills that are still operating in city centers, but very few remain in operation under these conditions.

The conclusion of this study was that mills shared many similarities described in previous chapters and subchapters: they were all built between the 1800s and 1900s, strategically located near ports, and many of them were also partly demolished by fires. Most of these flour mills were starting to be abandoned after the "flour-milling revolution" in the 1920s (Nord 2020, 287). Moreover, the study shows that their architecture and historical significance are still valued today, as many of these flour mills have now been recognized and listed as national historic landmarks.

Ceresota Building

CONTEXT & history -

- Location: Mississippi River in Minneapolis
- Completed in 1908
- One of the largest brick elevator ever constructed (brick construction being relatively uncommon) and ran on electricity.
- The elevator was the source for the Crown Roller Mill and Standard Mill.
- 1966, National Historic Landmark
- 1950s, Mills closed but the elevator was still use for grain storage until mid 1980s.
- 1971, listed in the National Register of Historic Places.
- 1987, elevator was converted to 8,555 m2 of office space.
- 2015, the building was converted to Millers Landing Senior Living.









Globe Mills

CONTEXT & history -

- Location: Sacramento, Californie.
- Completed in Late 1800s
- Flour mill, barley mill, paste house, boiler and multiple silos.
- 1968 closed
- The next 40 years sat dormant, surviving multiple fires.
- Elements such as fire access, stairs, elevators and sewer service were added.
- Globe Mills was reborn as a mixed-use facility, providing market-rate loft apartments, affordable housing and retail.

SUSTAINABLE FEATURE -

- Two new buildings exceed energy requirements by 20 percent.
- The project was at the forefront of Sacramento's vision to sustainably revitalize one of its oldest but well-placed neighborhoods.




AWARDS & RECOGNITION

- 2010 Outstanding Historical renovation, ASCE Region 9
- 2009 Best renovation/restoration California construction.
- 2009 ASCE outstanding project of the year award for structural project
- 2009 Showcase Project for Sacramento Area Youth Sustainability Council, Local Government Commission







Silo City

CONTEXT & history -

- Location: Silo city row, Buffalo, New York.
- Completed in 1906
- Silo City was built as a grain port and flour milling hub of the American Malting Corporation, the city prospered to unparalleled wealth.
- The ongoing renovation of the iconic site includes ambitious residential and public projects.
- The geographically advantageous location by Niagara Falls and the Erie Canal helped Buffalo become the first American city with widespread electricity.
- 1963, Silo City was decommissioned following the decline of the grain industry.
- Have been left vacant for more than 50 years.
- - Students and volunteers work towards urban ecological regeneration on the 27 acres of land at Silo City including native wildflower gardens, waterway restoration, and stormwater treatment techniques.
  - Duende is a bar and event space located in Silo City housed in a 1940s office building
- Transform the historic buildings into a community-centered residential development featuring affordable rents, innovative programs and valuable resources.




SUSTAINABLE operations -

- New York State's first "Fitwel Community Pilot," by Fitwel, the world's leading certification system committed to building health for all.
- Energy-efficient appliances, low flow water fixtures, low VOC paint, solar lighting and eco-friendly landscaping and maintenance are all included in the rehabilitation plans, with the potential for additional renewable energy opportunities as the project progresses.
- Hydroponic garden.

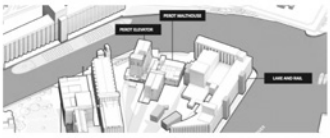





Fig. 2.21 : Study of Flour Mills in North America (1)

Layout by Author, Images and Information Sourced Online

Pillsbury A-Mill

CONTEXT & history -

- Location: Mississippi River in Minneapolis
- Completed in 1881
- World's largest flour mill for 40 years
- 1905, mill was fortified in 1905 (Due to vibrations of milling machines and poor design)
- 1966, National Historic Landmark
- 2003, production in the mill ceased and the mill lay empty
- 2013, Converted into the A-Mill Artist Lofts:
  - 251 affordable live/work artist lofts.
  - Exterior was conserved in order to preserve the historical architecture of the building.




SUSTAINABLE FEATURE -

- Project achieved LEED Gold Certification in 2017.
- Hydroelectric turbine was installed in a tunnel below the complex. The same tunnel was originally used to mechanically power milling equipment with diverted river water.
- Hydrothermal system providing 75% of the building's energy needs.






Washburn A Mill

CONTEXT & history -

- Location: Mississippi River in Minneapolis
- Completed in 1874
- Washburn A Mill has represented the heart and soul of Minneapolis for over 140 years.
- 1878, a spark ignited airborne flour dust, creating an explosion that claimed 18 lives, leveled the mill, and destroyed much of the riverfront business area. Minneapolis's milling capacity was cut in half.
- 1880, The new Washburn A Mill was completed in 1880. Design imported from eastern Europe, and machinery that made for both safer operations and higher quality flour.
- The new mill was the largest and most technologically advanced mill in the world.
- 1965, The Washburn A Mill closed.
- 1983, National Historic Landmark.
- 1991, Big fire and flames had engulfed the building. By then, all that was left of the old mill were the concrete of the interior and crumbling limestone walls.
- Mill City Museum
  - Reception Venue, Rooftop observation deck, Dining, Ruin courtyard, Shopping, Special exhibit, History of Minneapolis film.




AWARDS & RECOGNITION

- National AIA Honor Award for Architecture
- National Trust for Historic Preservation Honor Award
- AIA Minnesota Honor Award






ADAPTIVE REUSE OF NATIONAL HISTORIC LANDMARK

Into interpretive museum and offices



"A creative adaptive reuse of an extant shell of a mill building, with contrasting insertion of contemporary materials, weaving the old and the new into a seamless whole. It is museum as a verb."



Crown Roller Mill

CONTEXT & history -

- Location: Mississippi River in Minneapolis
- Completed in 1880
- Among the first mills to utilize rollers
- Waterpower supplied the energy for all machinery in the mill. Water shortages in the 1880s resulted in the installation of a steam engine.
- 1953, production was stopped at Crown Roller Mill. The building became a warehouse for Standard Milling until it was sold in the late 1950s.
- 1983, that the City of Minneapolis had approved a $250-million-dollar urban renewal plan for the 35-acre Mill District area, including Crown Roller Mill. The plan was to address urban renewal between downtown Minneapolis and the Mississippi River.
- October 1983, Eight months later, in fire gutted the interior of Crown Roller causing portions of the exterior walls to collapse.
- 1987, renovation began. Brick matching the original was used to rebuild the walls, and a new copper mansard roof was constructed.
- NOW - A nine-story steel structure was built inside the former mill around a central atrium, and the building was converted into office space.





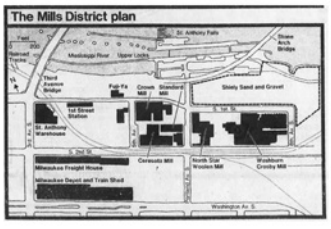




Fig. 2.22 : Study of Flour Mills in North America (2)

Finally, most of these mills have been converted with a new function that is likely to bring more life to the urban environment. They are now used as tourist attractions or residential housing. It is honourable that cities put effort and budget into preserving and rehabilitating these structures. Adaptive reuse is, indeed, a great solution to save and reduce carbon impact. However, in the process of rehabilitating flour mills, I have noticed that they are losing their authenticity; their facades, which are renowned for their large, uninterrupted forms, are now full of holes created by window openings. In addition to the changing aesthetics and heritage dimensions, we must recognize the potential loss of industrial functionality and economic opportunity. It is crucial to maintain industry and job opportunities that will support a city's local economies.

A famous quote by Carl Elefante says, "The greenest building is the one that already exists." Well, I believe that the greenest building is the one that remains untouched and whose function remains unchanged (Elefante 2012). Very few flour mills in North America's inner cities have remained true to their origins. In most cases, if the flour mill operates well, keeping the mill as it is might remain the most noble, the most sustainable and the most authentic option. Protecting mills according to their intended use while integrating them into our urban realm is a challenge that might be studied carefully. For this reason, in our next chapter, we will explore a specific case in Montreal, where a flour mill still in operation will soon be integrated into an urban area. Its history and the site on which it stands are rich and emblematic elements of the city of Montreal.



Fig. 2.23 : ***A view of several abandoned mills in Silo City, one of these buildings has been repurposed into a Bar, and soon an abandoned mill w***

Image by Author, 2024



will be transformed into residential Housing

Chapter 03

A Rich History of Flour Mills at Pointe-du-Moulin

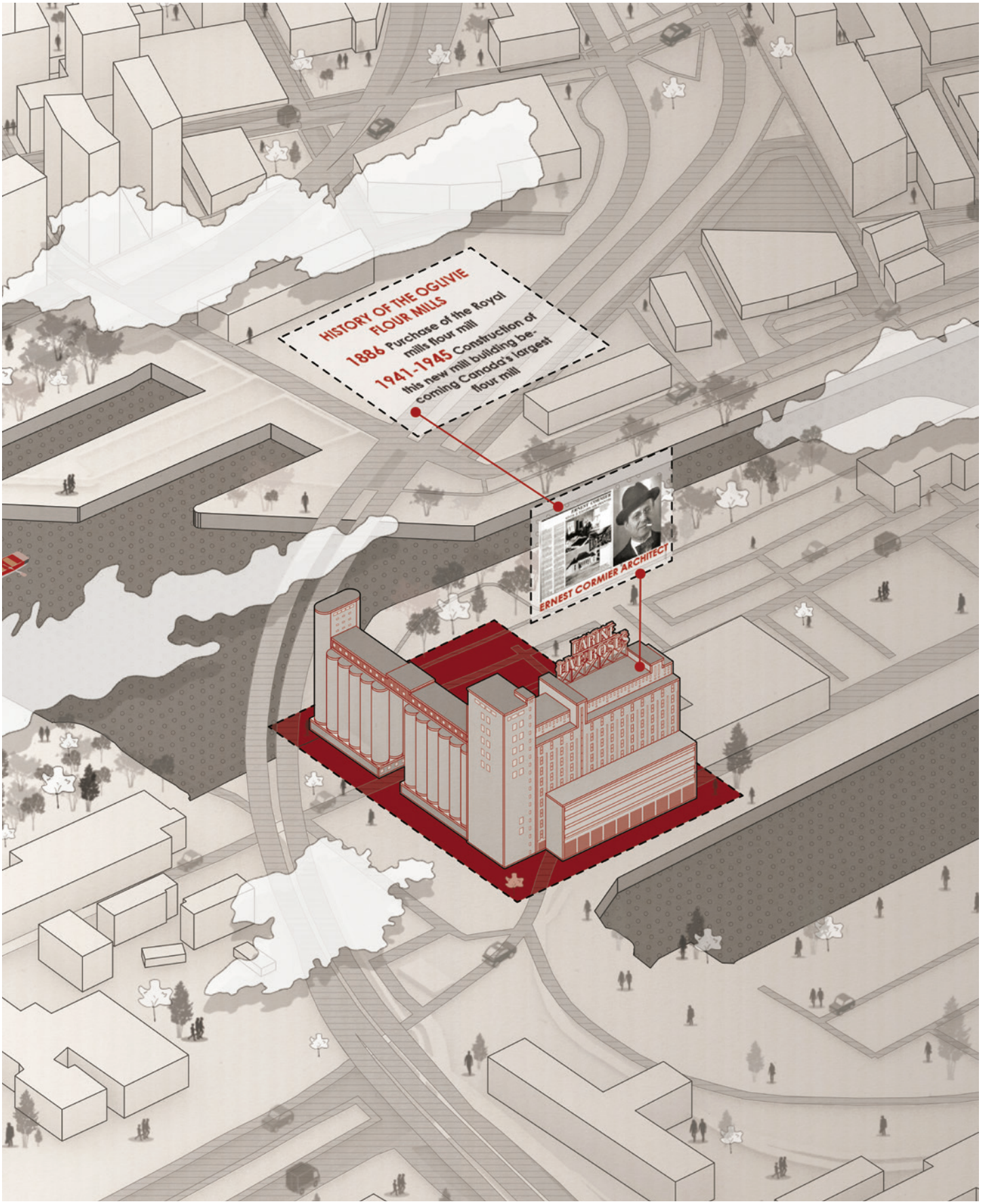


Fig. 3.1 : Drawing showing the History of the Farine Five Roses in its context

Drawing by Author

A Rich History of Flour Mills at Pointe-du-Moulin

Chapter 03

"

When people think of the biggest cities in Canada, they often think of the iconic features of their downtowns – the CN Tower in Toronto, the Farine Five Roses sign in Montréal, Stanley Park in Vancouver.

"

Jeremy Runnalls
(Runnalls 2018, 1)

3.1 Introduction

The rich history of Pointe du Moulin has played a major role in shaping Montreal's urban and industrial landscape. Established in 1825 along the Lachine Canal, this neighbourhood quickly became a hub of industrial activity, particularly in the milling industry (Brodeur 2017). Over the years, the development of numerous flour mills generated significant economic growth in the district, which became one of the world's largest grain ports in the 1920s (Dufour 2020). This chapter explores Pointe du Moulin's architectural and industrial evolution, focusing on the flour mills that shaped the area. Today, the site has undergone many changes as most of the buildings have been abandoned, except for one flour mill. The "Complexe du Ogilvie Flour Mills Company Limited," better known by the public as the "Farine Five Roses Flour Mill," still operates today. The story of Pointe du Moulin is a valuable case study that will help understand the evolution of the site's economic, historical and cultural landscape. This study also illustrates how a city like Montreal, which is expanding on its industrial land, plans to integrate its flour mills into this new urban fabric.



Fig. 3.2 : This thesis will focus on a small portion of the Bridge Bonnaventure Redevelopment

Drawing by Author



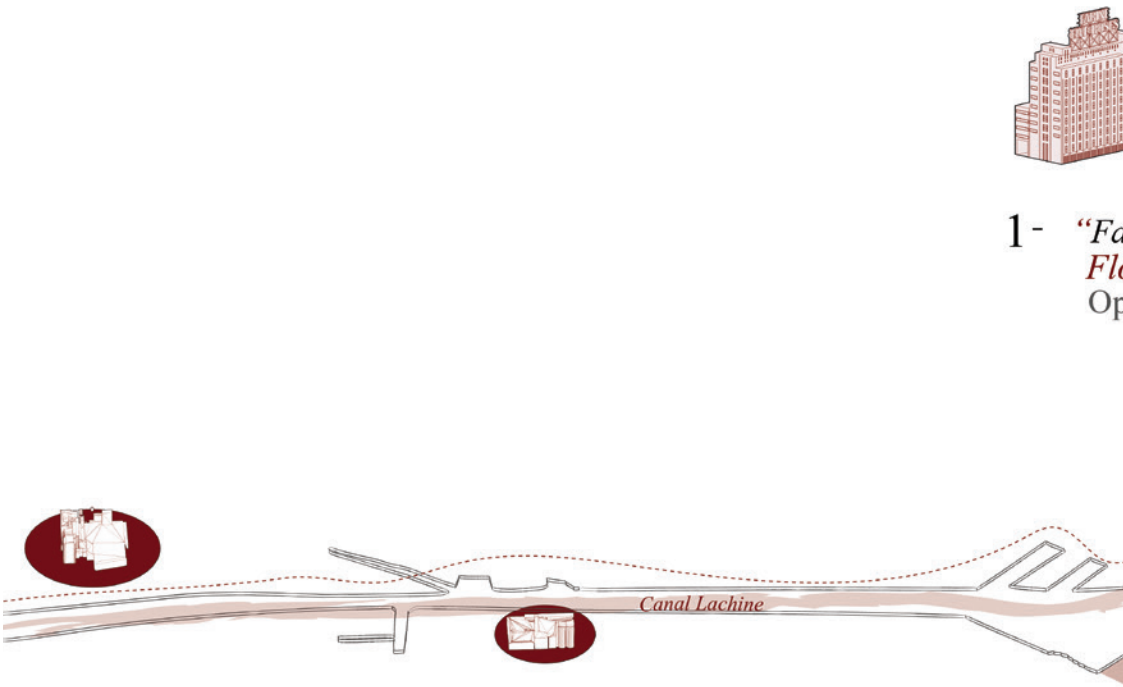
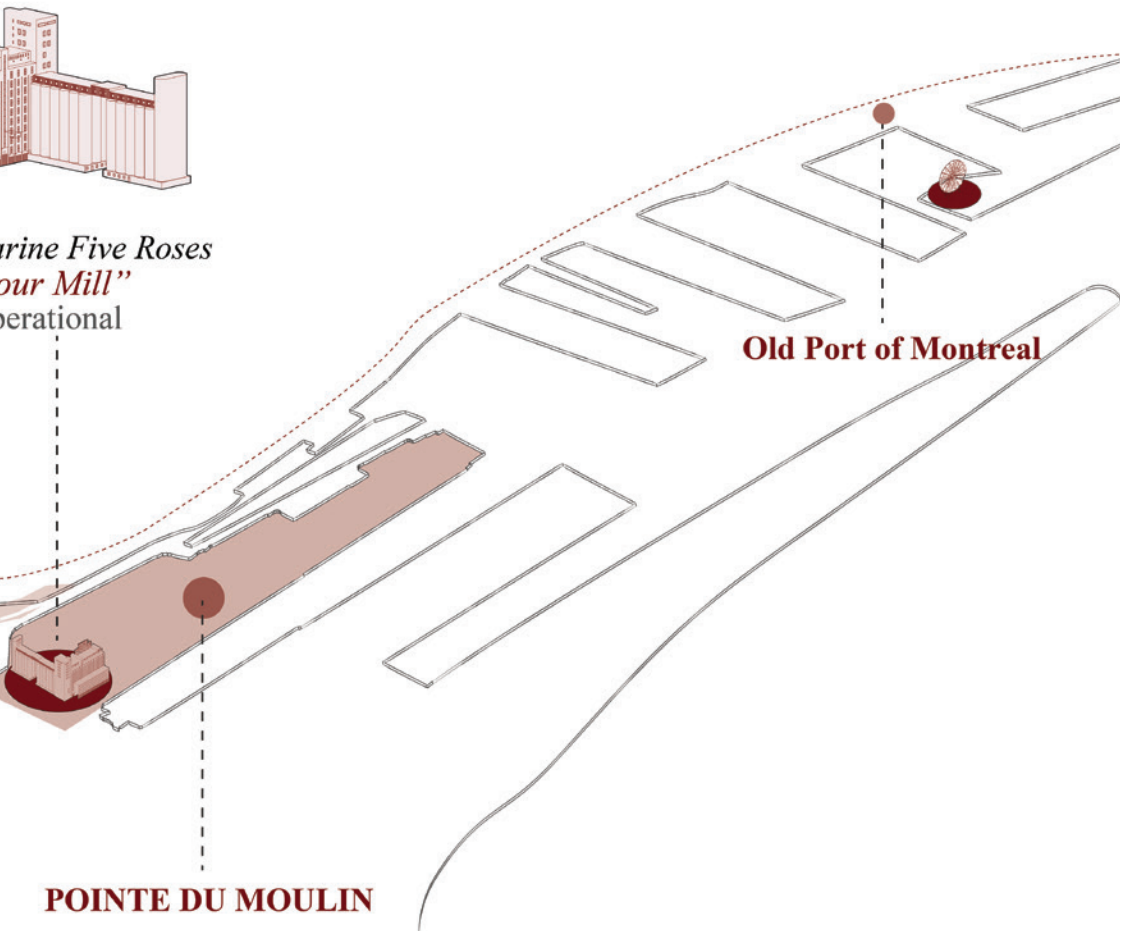


Fig. 3.3 : Drawing curated to show Pointe-du-Moulin in relation to the Canal Lachine and the Old Port

Drawing by Author


rine Five Roses
our Mill"
erational
Old Port of Montreal
POINTE DU MOULIN

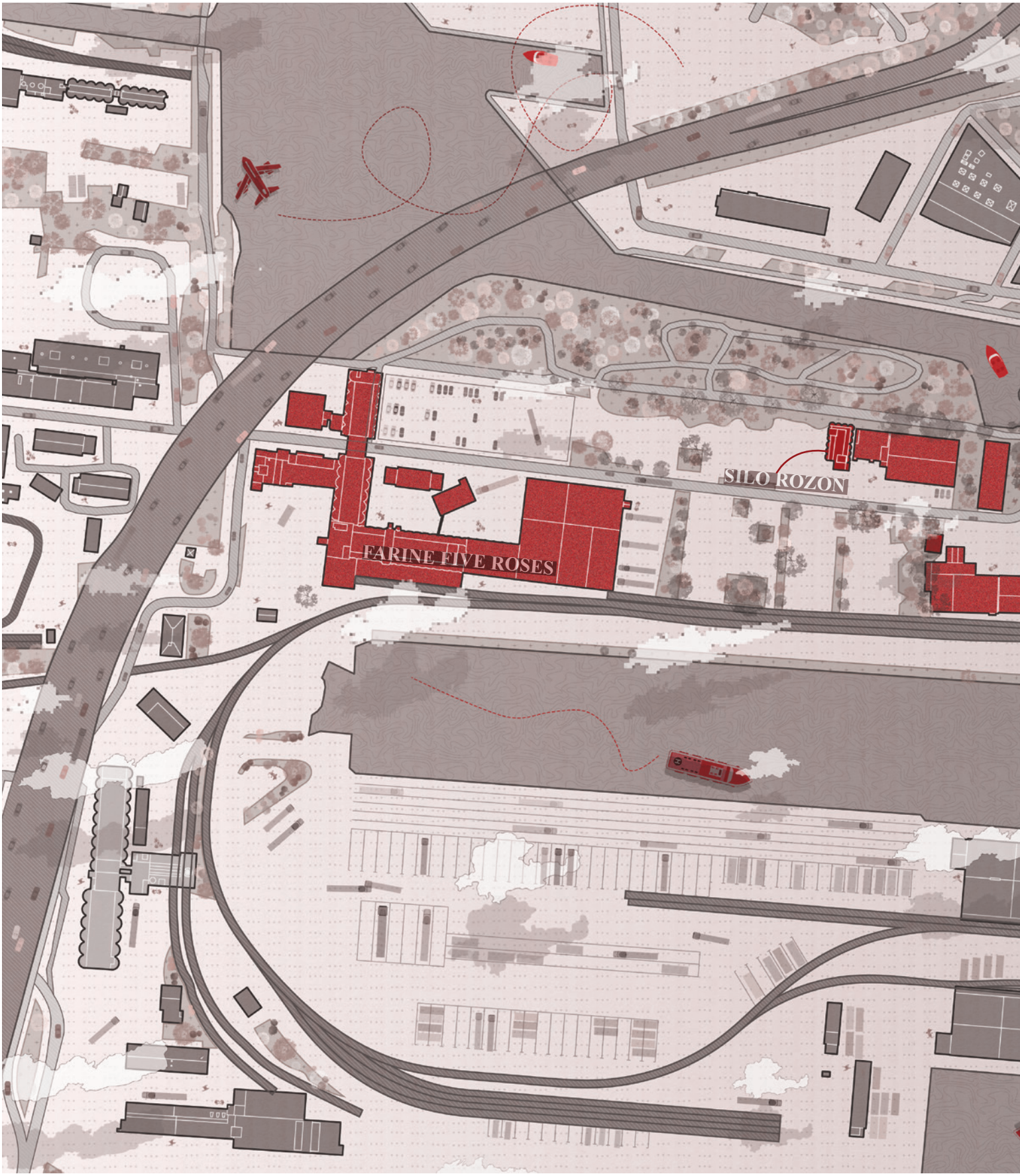
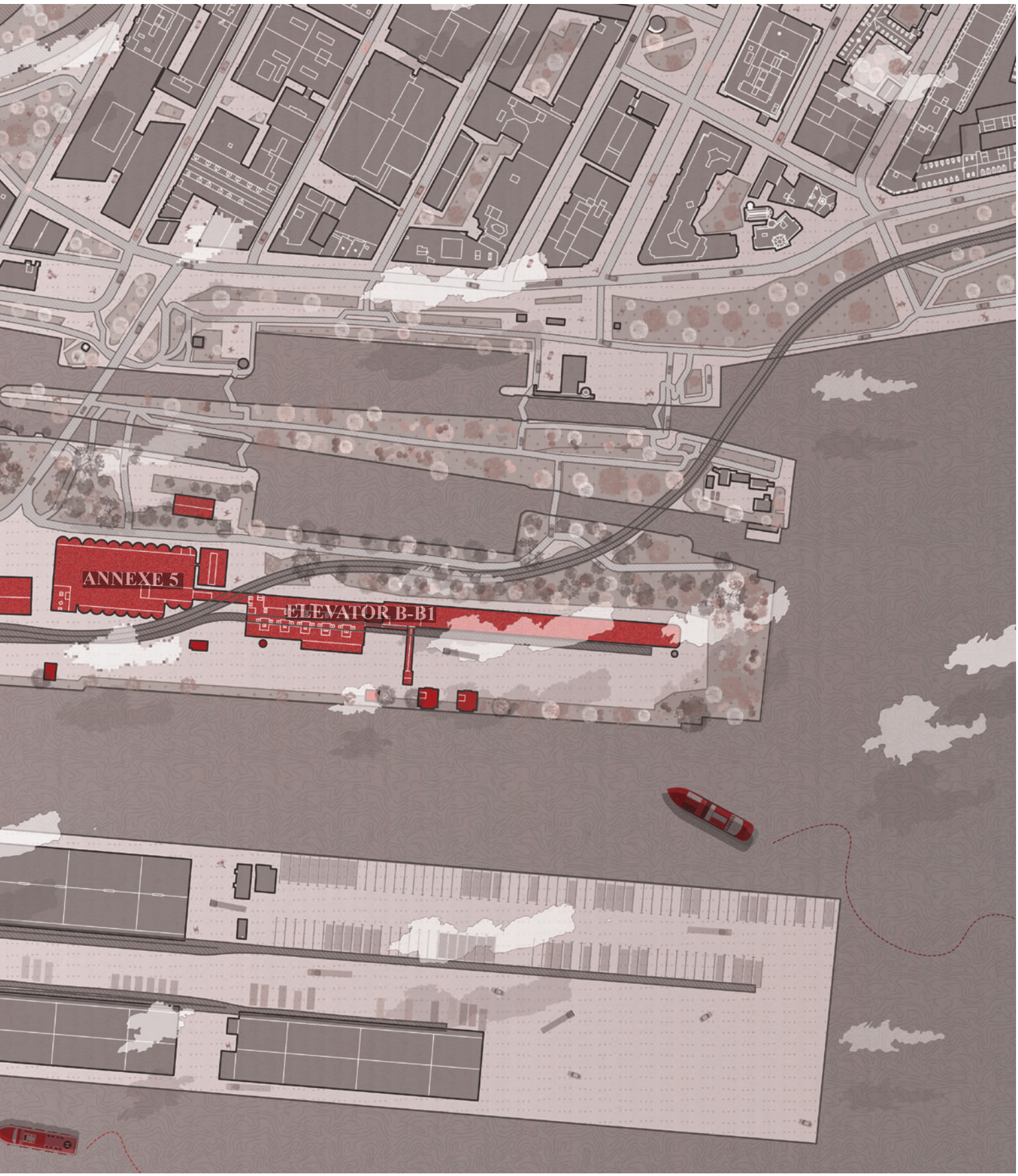


Fig. 3.4 : Current condition of Pointe du Moulin, all the red Buildings are abandonned except for Farine Five Roses

Drawing by Author


ANNEXE 5
ELEVATOR B-B1

3.2 Pointe du Moulin

The historic Pointe du Moulin district is located in the southwestern part of Montreal, a once-thriving industrial zone that played a key role in the city's economic growth. In 1825, the "Lachine Canal" was created to attract business and improve access to the city. During the construction of the canal, excavated soil was used to create the Pointe du Moulin district (Poulin 2005, 26). Between 1843 and 1848, a hydraulic power system installation was built in the area, which led to the arrival of several industrial companies, among them a number of flour mills (Office de consultation publique de Montréal 2023, 12). Over the years, the district has remained an important industrial zone that has been remodelled, expanded, and improved to meet the growing needs of businesses (Dufour 2020, 3).

While efforts were made to develop the site and maintain its economic importance, the pier faced several challenges. The downfall of the grain industry and changes in port activities contributed to the gradual decline of Pointe du Moulin, with larger ships no longer able to use the canal (Dufour 2020, 6). Many buildings fell into disrepair and were abandoned, except for one flour mill, "Farine Five Roses Flour Mill"[1] which is the only building on the pier still in use today. This remaining building complex has been a landmark and a symbol of the Montreal skyline since 1948 (Soar 2009). The district's transformations, from the creation of a canal to the establishment of flour mills and its subsequent decline, reflect the evolution of most flour mills across North America.

1 *The name registered for the building of this Flour Mill is "Complexe du Ogilvie Flour Mills Company Limited", but for ease of reading, I will refer to it as "Farine Five Roses Flour Mill" which is the name most commonly used for this structure.*



Fig. 3.5 : Archive Photo showing Farine Five Roses Flour Mill in Red

Montreal City Archives

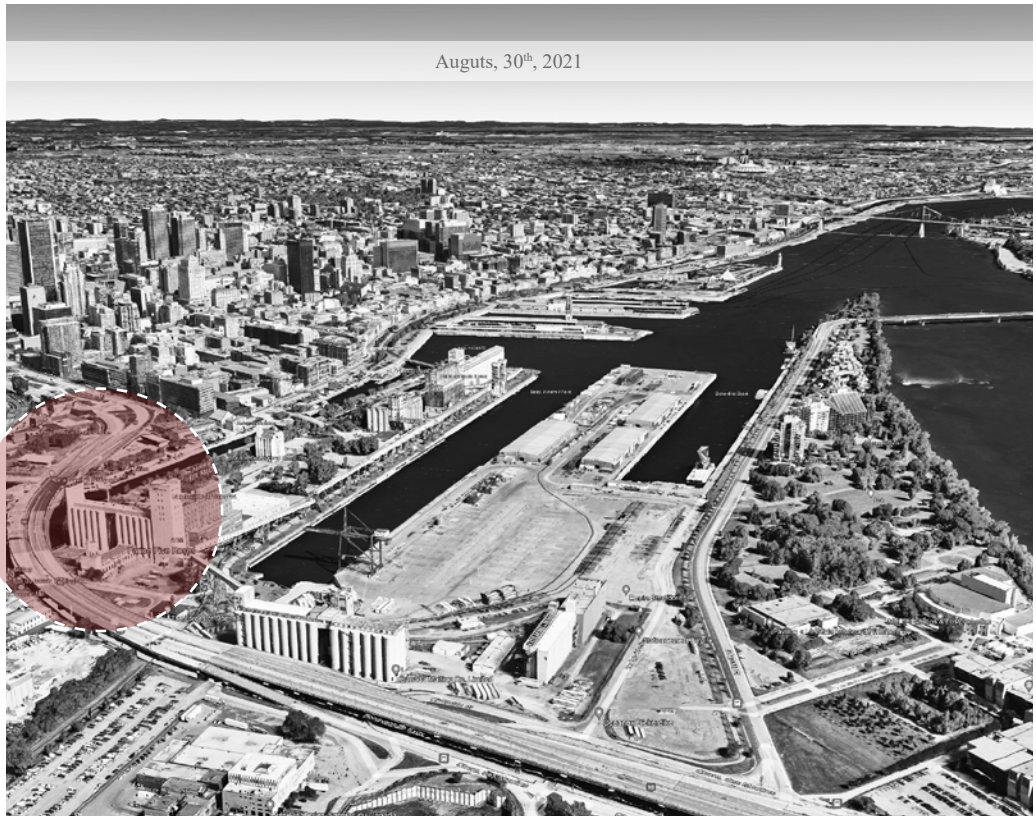


Fig. 3.6 : Image showing the city expension towards the Farine Five Roses flour mill that happen between 1966 and 2021

Google Earth Image, August 2021

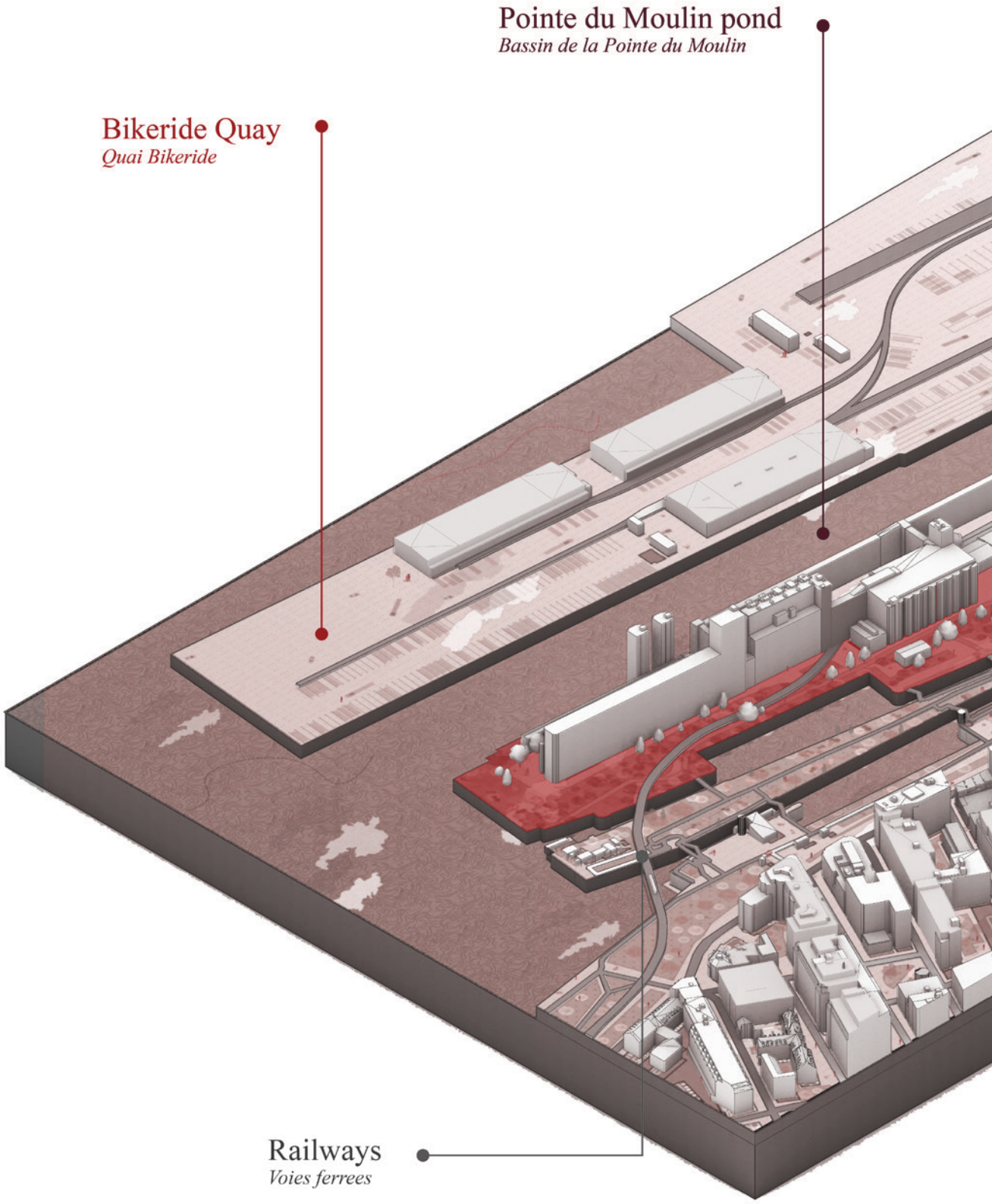
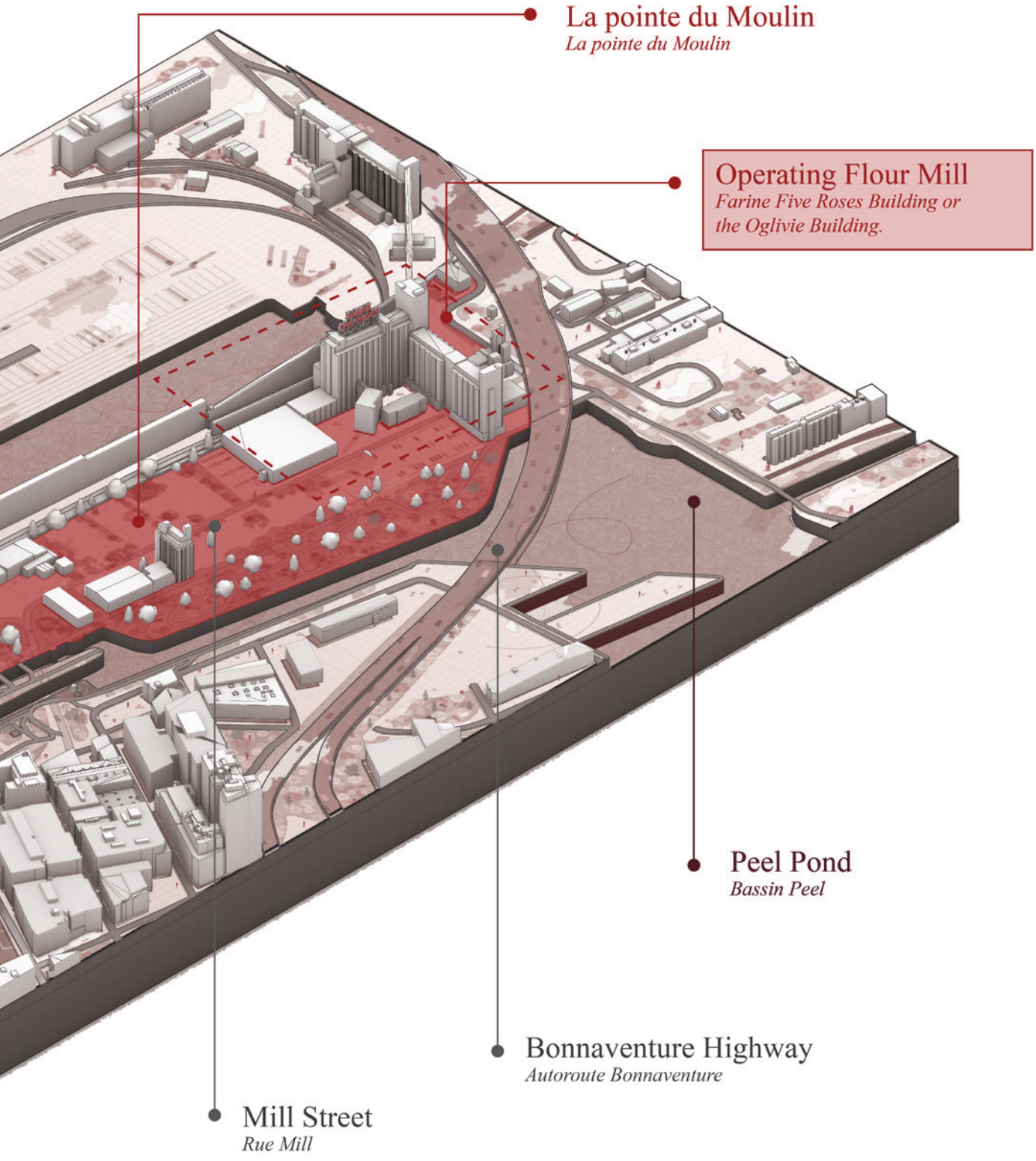


Fig. 3.7 : Current Site Context of Pointe-du-Moulin (highlighed in red)

Drawing by Author


La pointe du Moulin
La pointe du Moulin
Operating Flour Mill
Farine Five Roses Building or
the Oglivie Building.
Peel Pond
Bassin Peel
Bonnaventure Highway
Autoroute Bonnaventure
Mill Street
Rue Mill

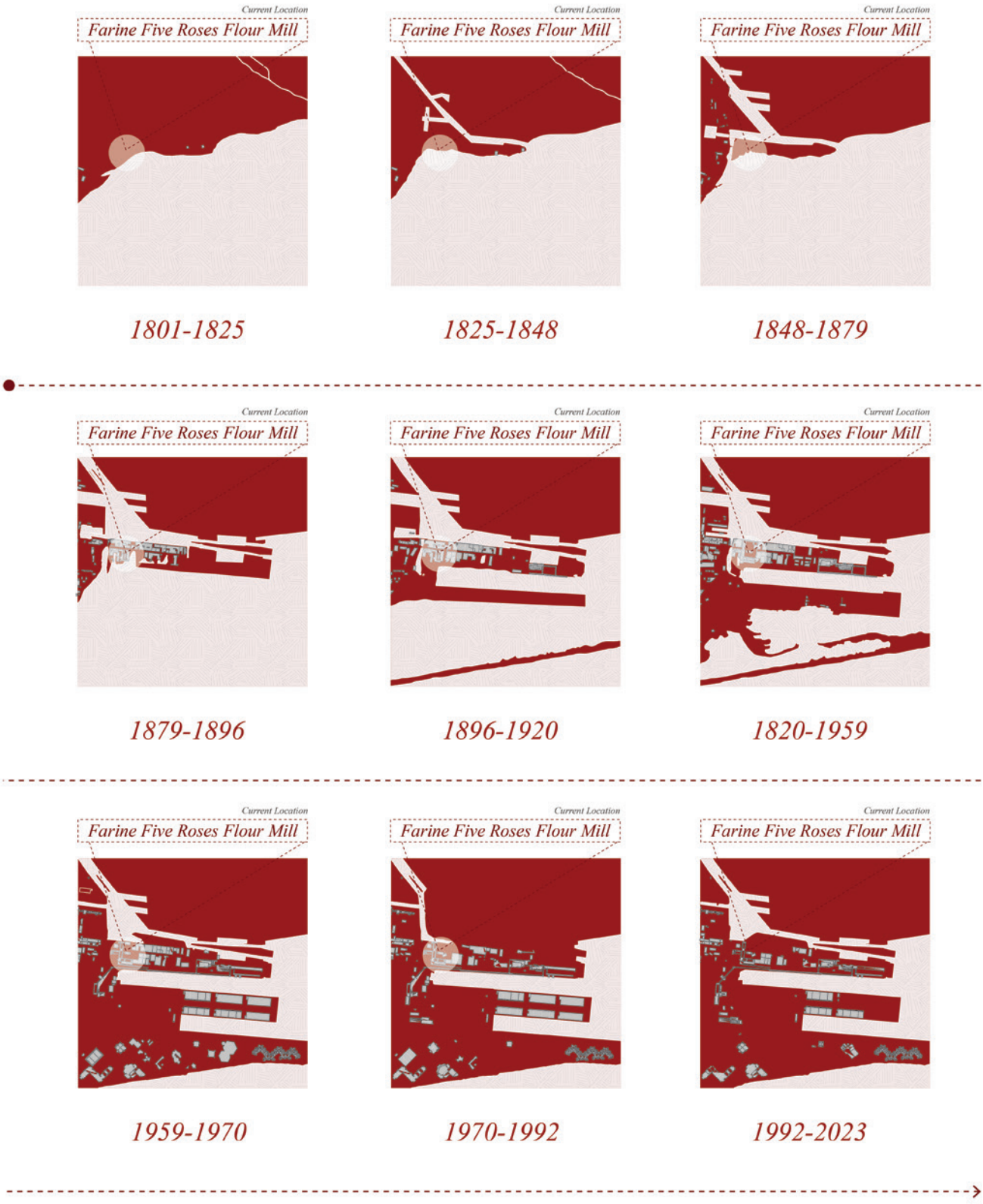


Fig. 3.8 : The Pointe du Moulin is a human-made pier built from successive backfills associated with the digging of the Lachine Canal.

Drawing by Author

3.3 Historical Timeline of Canal Lachine

The canal surrounding Pointe du Moulin is key to understanding how, in the past, it was practical to locate industrial industries on the site and why, today, the City of Montreal sees the site as an attractive location for residential units. The history of the canal creates the exceptional character of the site. According to Parks Canada Agency (2024), the Lachine Canal was first conceived around 1671 following Montreal's establishment. The main goal of the Canal was to bypass the Lachine Rapids and connect Montreal to the Great Lakes to facilitate trade. However, it took until the 19th century for the canal to be completed, which increased Montreal's commerce and trade (Agence Parcs Canada 2024). The canal was enlarged twice, first from 1843-1848 and then from 1873-1885 (Agence Parcs Canada 2024). This canal expansion contributed to the industrialization of southwest Montreal, which became a major industrial hub. However, in 1959, the opening of the St. Lawrence Seaway led to the decline of the Lachine Canal as industries moved to the new waterway (Dufour 2020, 6). In 1970, after being closed to commercial navigation and partially backfilled, the canal fell into disuse (Dufour 2020, 6). Surviving industries could only depend on land transport, such as trains, trucks and cars.

Between 1997 and 2002, Parks Canada and other partners undertook restoration efforts to introduce recreational boating, transforming the canal into a leisure and tourism destination (Parks Canada Agency 2024). This initiative attracted new users, from boaters to cyclists, and revitalized the surrounding neighbourhoods. The canal is now equipped to accommodate light craft such as kayaks, canoes and electric boats, offering a new way to explore the city (Parks Canada Agency 2024). These changes have made the canal a living reminder of Canada's industrial evolution, illustrating the historical importance of innovation and adaptation when facing economic and technological change. At the same time, the revival of activity in the region generated demand for housing, bringing further stimulus to the surrounding neighbourhoods.

3.4 Architectural Characteristics of Pointe du Moulin.

The site attracts many visitors for its key architectural and engineering features, which stand out from the city's urban landscape. The buildings of Pointe du Moulin share the special architectural characteristics discussed in Chapter 02. Most buildings on the pier are tall and massive structures visible from most angles of the city. Arriving on this pier brings the sensation of entering another world - the world of machines, marked by gigantic proportions and the use of heavy materials. This landscape leaves you both disturbed and amazed by the immensity of these structures. This impression is mainly due to the three grain elevators, the marine towers and the gigantic conveyors

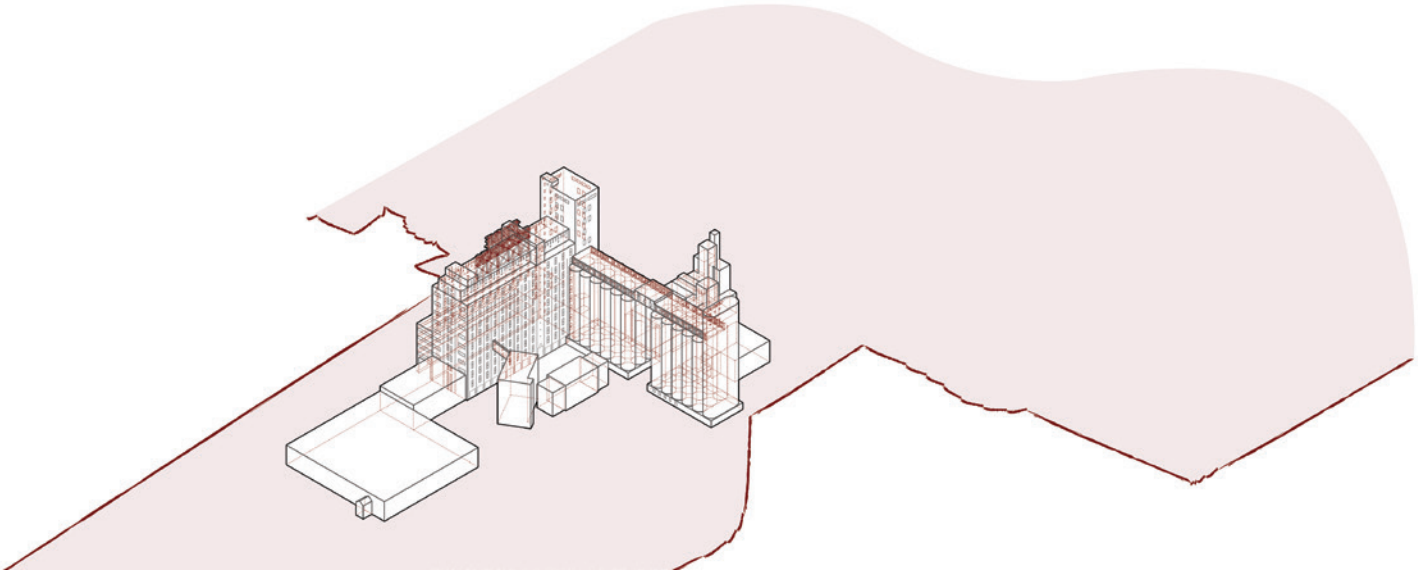


Fig. 3.9 : Farine Five Roses Line drawing

Drawing by Author



Fig. 3.10 : *Image showing the condition of the exiting site, facing Elevator B and the operational train track*

Image by Author



Fig. 3.11 : *Hydraulique Facility, Pointe-du-Moulin, Montreal*

Image by Author



Fig. 3.12 : ***Image og Annexe 5, Pointe-du-Moulin, Montreal***

Image by Author

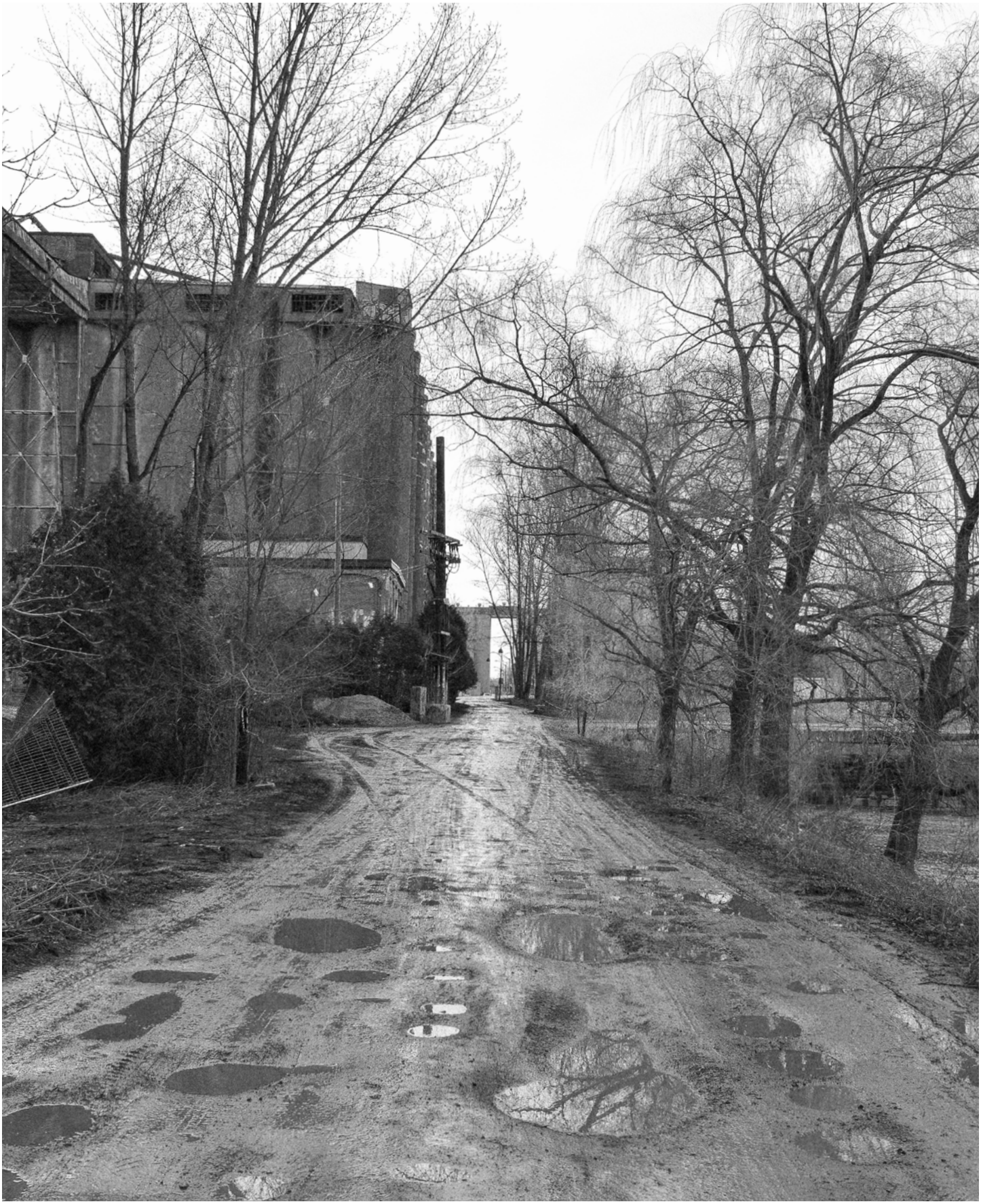


Fig. 3.13 : ***Pointe-du-Moulin view from the Annexe 5, Montreal***

Image by Author

The first one is a building complex named Silo #5, operational from 1906 to 1994. It was designed for sorting and storing grains and is home to three main buildings: Elevator B, Elevator B-1 and its Annex (Dufour 2020, 6). This monumental complex, including its network of conveyors and marine towers, also illustrates grain elevators' close links with land and water transportation. The statement of heritage interest for the Old Port of Montreal also recognizes the structure's importance, designating parts B, B-1, and the annex as federally recognized heritage buildings in 1996 (Brodeur 2017, 67). The second structures is named Silo Rozon, it was originally used as a linseed oil mill when it first opened in 1922, it was later used to manufacture cereals from 1970 until its closure in 1990 (Dufour 2020, 6). Finally, the third infrastructure is the Farine Five Roses flour mill, whose history will be discussed in a later sub-chapter.

These buildings are the masterpieces of two renowned Quebec engineers. Engineer John S. Metcalfe constructed numerous industrial buildings in Montreal's port area, including Elevator B and its annex (Dufour 2020, 8). Ernest Cormier, a member of the Royal Canadian Academy of Arts, engineer and architect, built the famous "Farine Five Roses" flour mill (Dufour 2020, 8). Preserving these buildings is essential to ensure that their engineering legacies are remembered, and their historic values are preserved. Today, as you walk through the site, you can discover numerous abandoned machinery elements and well-preserved hydraulic structures that were used to power the operating mills in 1848. The site and its structures testifying to an important industrial heritage (Office de consultation publique de Montréal 2023, 80).

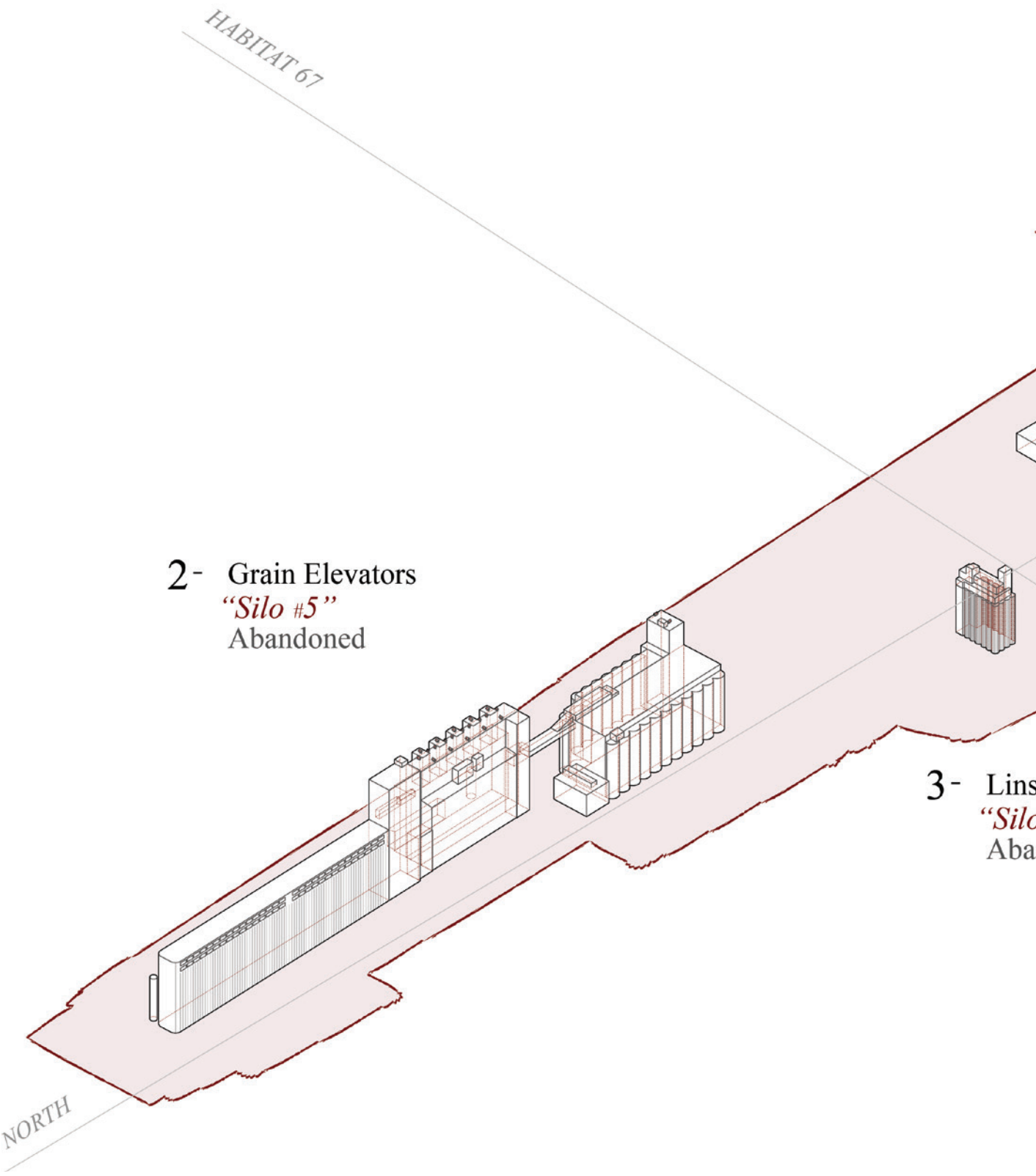
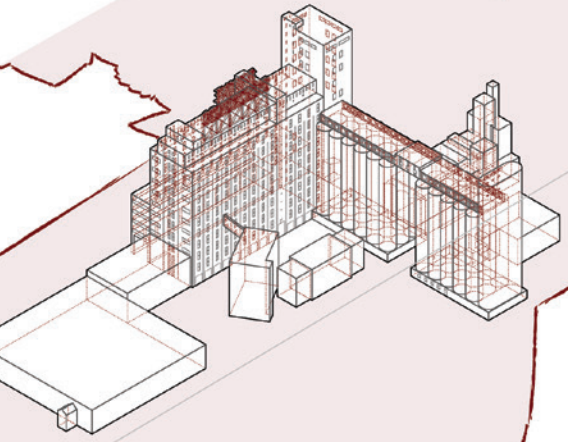


Fig. 3.14 : ***Drawing showing the Important Building of the site, Silo n5 includes Elevator B -B1 and Annexe 5***

Drawing by Author

SOUTH

1 - Flour Mill
"Farine Five Roses"
Operating



seed Oil Mill
o Rozon"
ndoned

CITY



Fig. 3.15 : Silo n5 (Elevators B and B1)



Fig. 3.16 : Farine

Image by





e Five Roses Flour Mill *Fig. 3.17 : Silo Rozon*

Author *Image by Author*

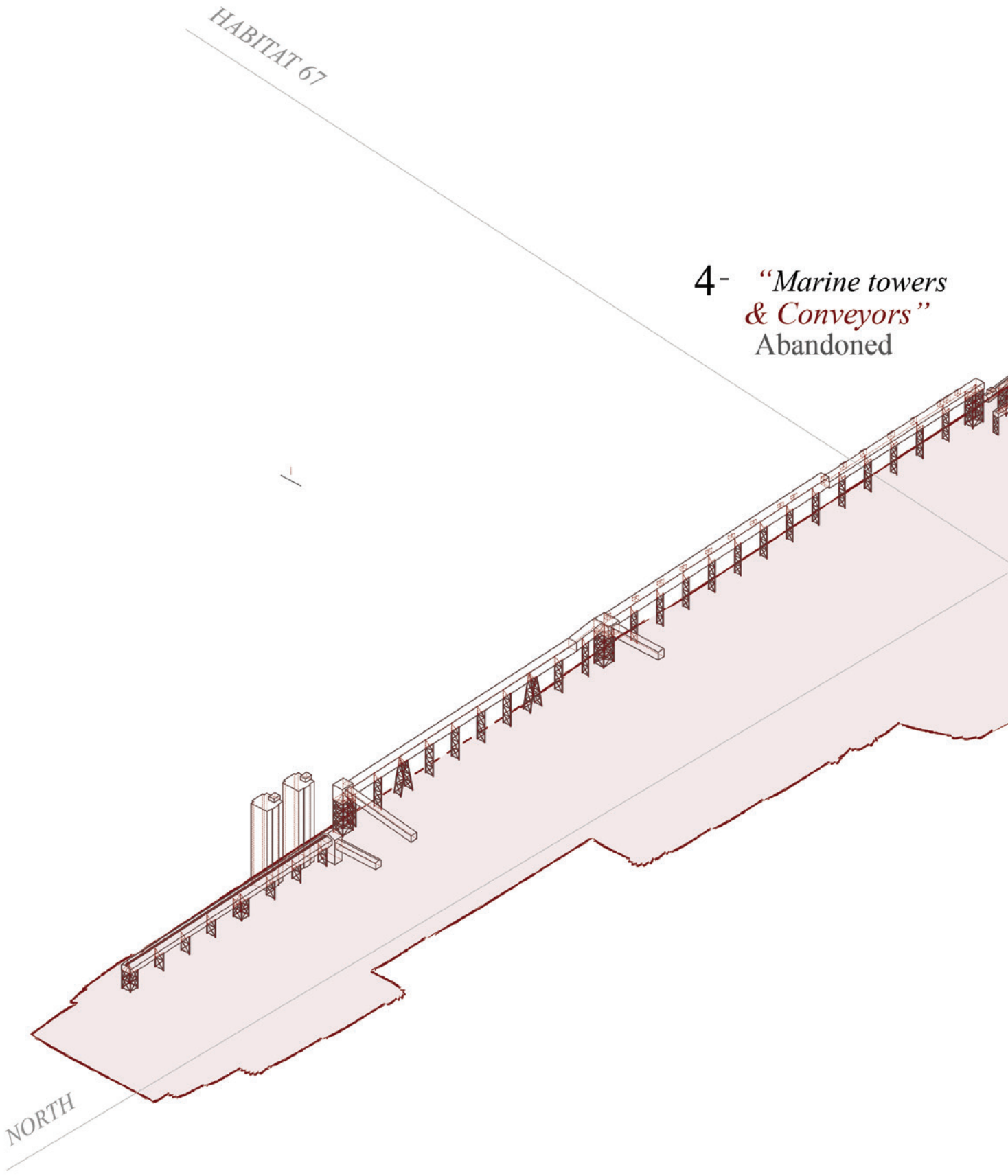


Fig. 3.18 : ***Marine Towers and Conveyors***

Drawing by Author

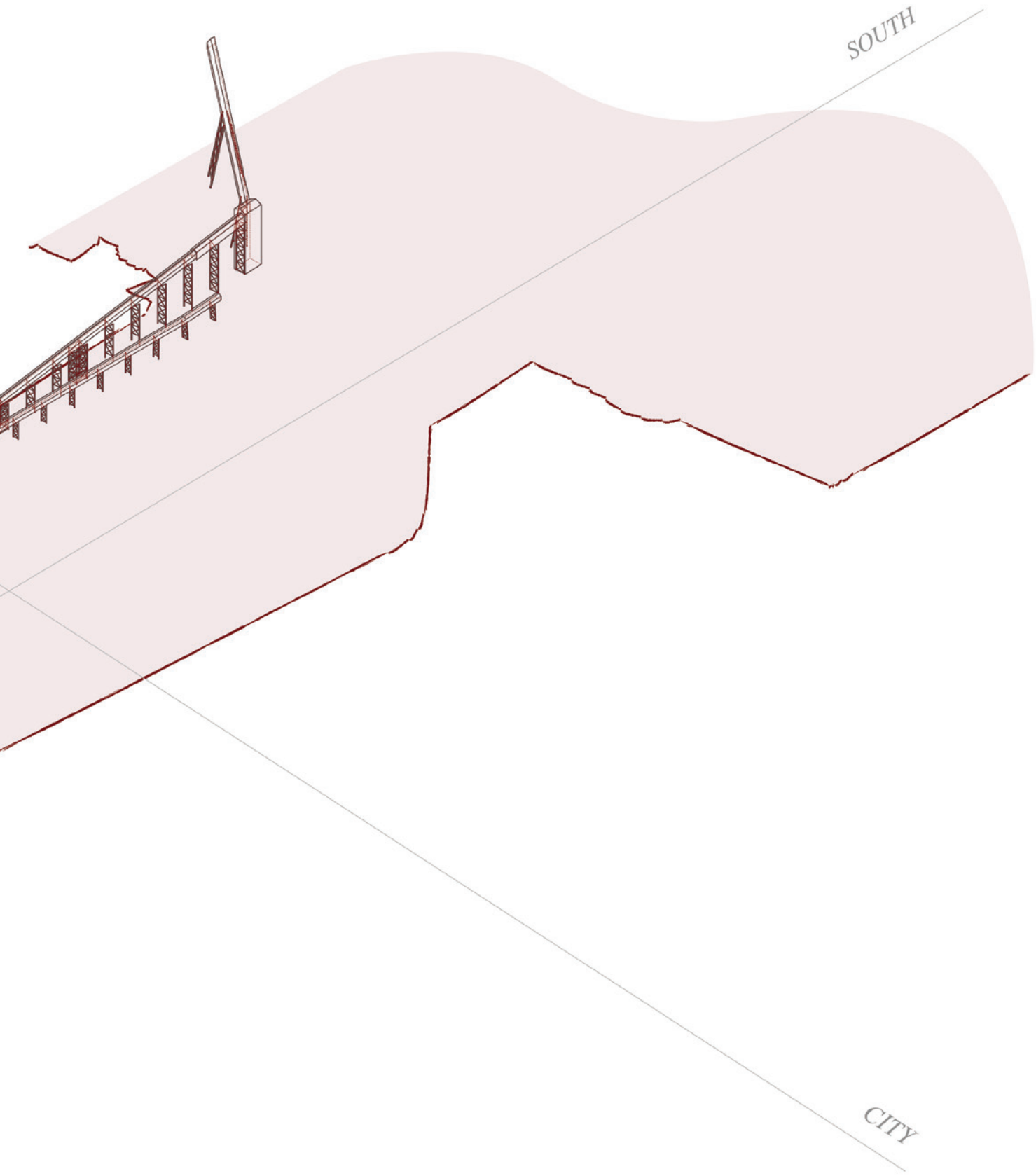

SOUTH
CITY



Fig. 3.19 : *The existing and abandonned Silo n5 the Marine Towers and Converyors in Pointe-du-Moulin*

Image by Author



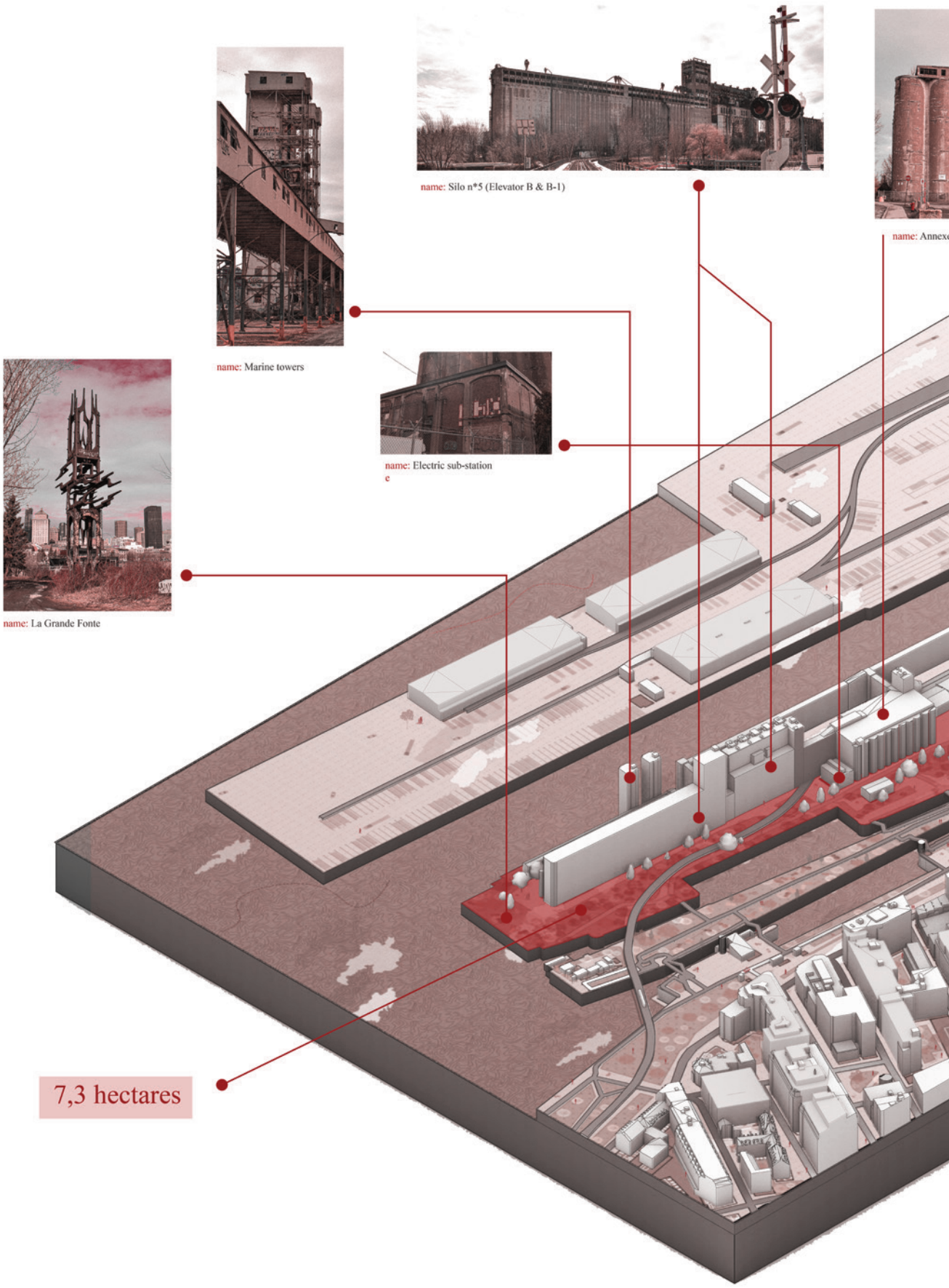


Fig. 3.20 : *Existing Condition of Pointe-du-Moulin and its Elements*

Image by Author



: 5



name: Galleries and Overhead Conveyors



name: ADM flour mill & the Farine Five Roses sign

name: Old wall of the Lachine Canal - Remains

3.5 Farine Five Roses Flour Mill and its Iconic Sign

Farine Five Roses has been part of Montreal's skyline and urban identity for over 80 years (Dufour 2020, 8). This flour mill is one of the oldest operating companies along the Lachine Canal and is designated as an industrial complex of interest (ADM et al. 2019, 84). The building complex was constructed between 1941 and 1945. The flour mill complex contains buildings on either side of Mill Street, beginning at Riverside Street. These buildings are still used for flour milling by Archer Daniels Midland (ADM) company. The complex features six buildings in total, the most imposing one being a series of very tall concrete silos linked by a footbridge, including windows at each end. Further south, a three-storey building extends to Riverside Street house the company's offices and laboratories (ADM et al. 2019, 14). Most buildings in the complex have flat roofs and brick walls with some concrete decorative elements (Dufour 2020, 8). Overall, the building's exterior façade has remained virtually unchanged, reflecting a carefully considered design that allows the building to be flexible and adapt to current market needs.

Not only is the building authentic in its form and recalls its place in the development of modern architecture, its large red sign makes the flour mill even more appealing to Montreal's residents. The sign is the first thing people see when they enter Montreal from the east side of the city, reinforcing the mill's notoriety. It is visible from many different directions in the city and is composed of 15-foot-high letters illuminated by red neon lights (Soar 2009, 286). Since its installation in 1948, the sign has undergone several transformations. Originally displaying "Farine Ogilvie Flour," it was renamed in the 1960s as "Farine Five Roses Flour" and later on in 1977 as "Farine Five Roses" (Soar, n.d). The adoption of Bill 101, which aimed at ensuring the pre-eminence of French in Quebec, led to the removal of the word "flour," giving the sign its current name (Doyon 2013).

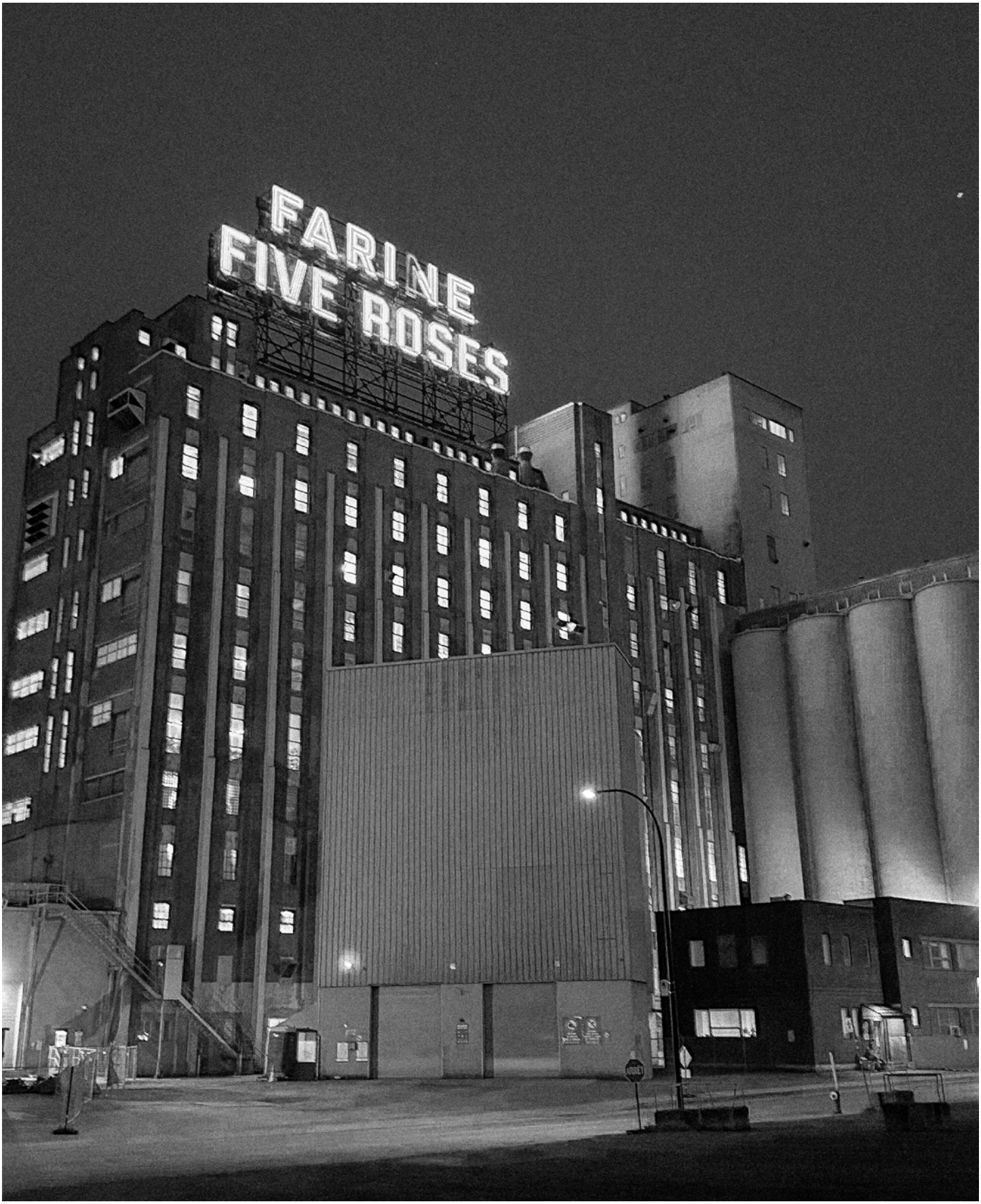


Fig. 3.21 : *Farine Five Roses building complex at night with illuminated sign, Pointe-du-Moulin*

Image by Author

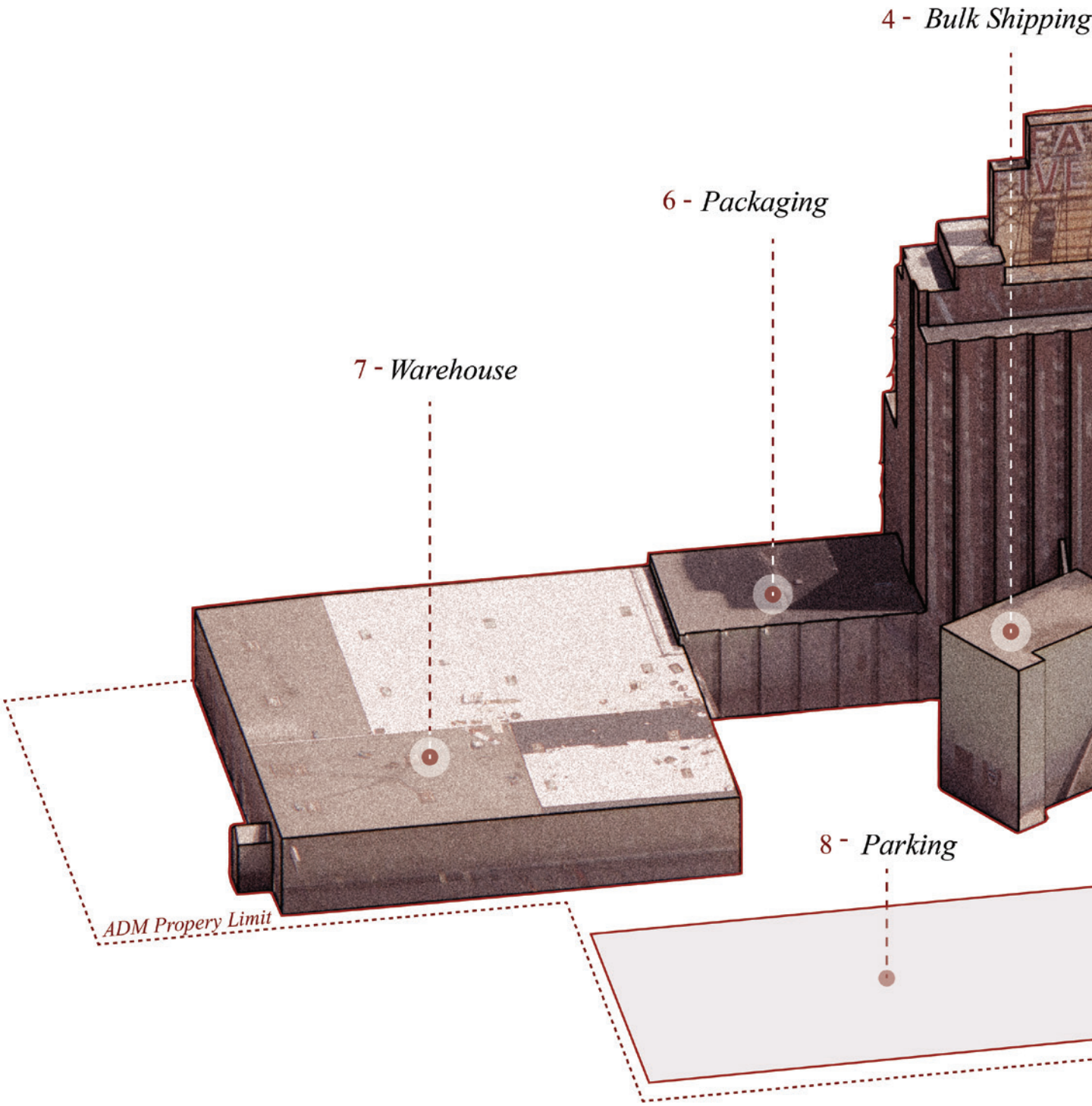


Fig. 3.22 : ***Existing Condition of Farine Five Roses building Complex***

Drawing by Author

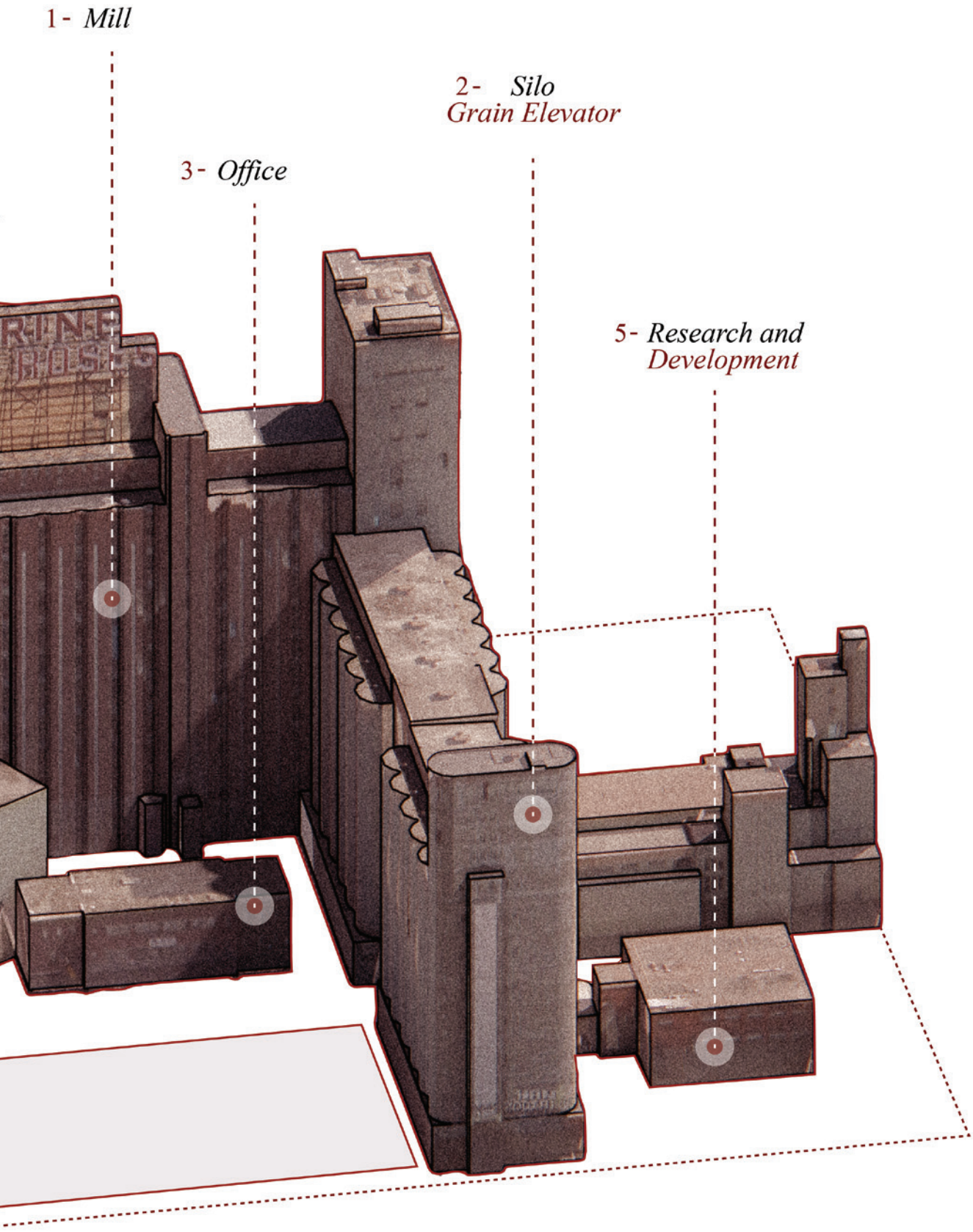

1- Mill
2- Silo
Grain Elevator
3- Office
5- Research and
Development



Fig. 3.23 : *The Gateway of Pointe du Moulin - Farine Five Roses Flour Mill and Mill Street*

Image by Author

In 2006, the Farine Five Roses flour mill, owned at that time by the J.M. Smucker Company, was on sale. This sale almost led to the sign's disappearance as the new owner, ADM, was unwilling to promote a brand it no longer owned (Doyon 2013; Soar, n.d.). This triggered a lively public debate on the importance of the sign, creating a strong citizen movement. Montreal Heritage also mobilized for its preservation, eventually making ADM and Smucker agree to preserve the sign. The rescue of the Farine Five Roses sign is now celebrated as a victory for the city's heritage and citizens. This story highlights what was discussed in Chapter 01: the importance that flour mills can have on our community. This strong movement brought a thriving community to fight for what they saw as being part of their identity. The mill can symbolize the community's past: people came here to work, start families, and develop businesses to build a life around the mill. In brief, the mill has brought people together with a sense of civic responsibility to community.

3.6 Mill's Impact on Canadian wheat and flour Industry

The company now occupying the mill is ADM Agri-Industries Company, a pillar of the Montreal and Quebec agri-food economy. ADM processes more than 500,000 metric tons of wheat annually into flour and semolina (ADM et al. 2019, 11). The flour mill relies solely on land transportation. Its wheat arrives from Western Canada by railcar, and over 480 railcars are unloaded monthly (ADM et al. 2019, 32). The mill also estimates that there are 100 trucks a day continuously, 7 days a week, which come to the site to deliver the wheat or pick up the flour (ADM et al. 2019, 37). This heavy truck traffic reflects the mill's importance in the food industry's supply chain, particularly in the regional and national context. Most of the wheat processed by ADM comes from Western Canada and Quebec (ADM et al. 2019, 66).

This company operates unusually. ADM does not deliver its own flour but lets its customers collect it. This is made possible by its ideal location, where 90% of its customers, located less than 100 km from the mill, are in the greater Montreal area (ADM et al. 2019, 5). This situation reveals the strategic importance of the mill's location optimizing logistics due to its proximity to the highway and rail networks. This proximity favours the use of transportation systems that are compatible with each other while reducing the environmental impact of long-distance transport. ADM strongly emphasizes the importance of maintaining its activities in this area, not only to preserve the region's industrial and economic heritage but also to continue supplying a vital agri-food chain (ADM et al. 2019). This flour mill is a thriving example of industrial heritage, contributing to the local economy by creating jobs and supporting the food industry.

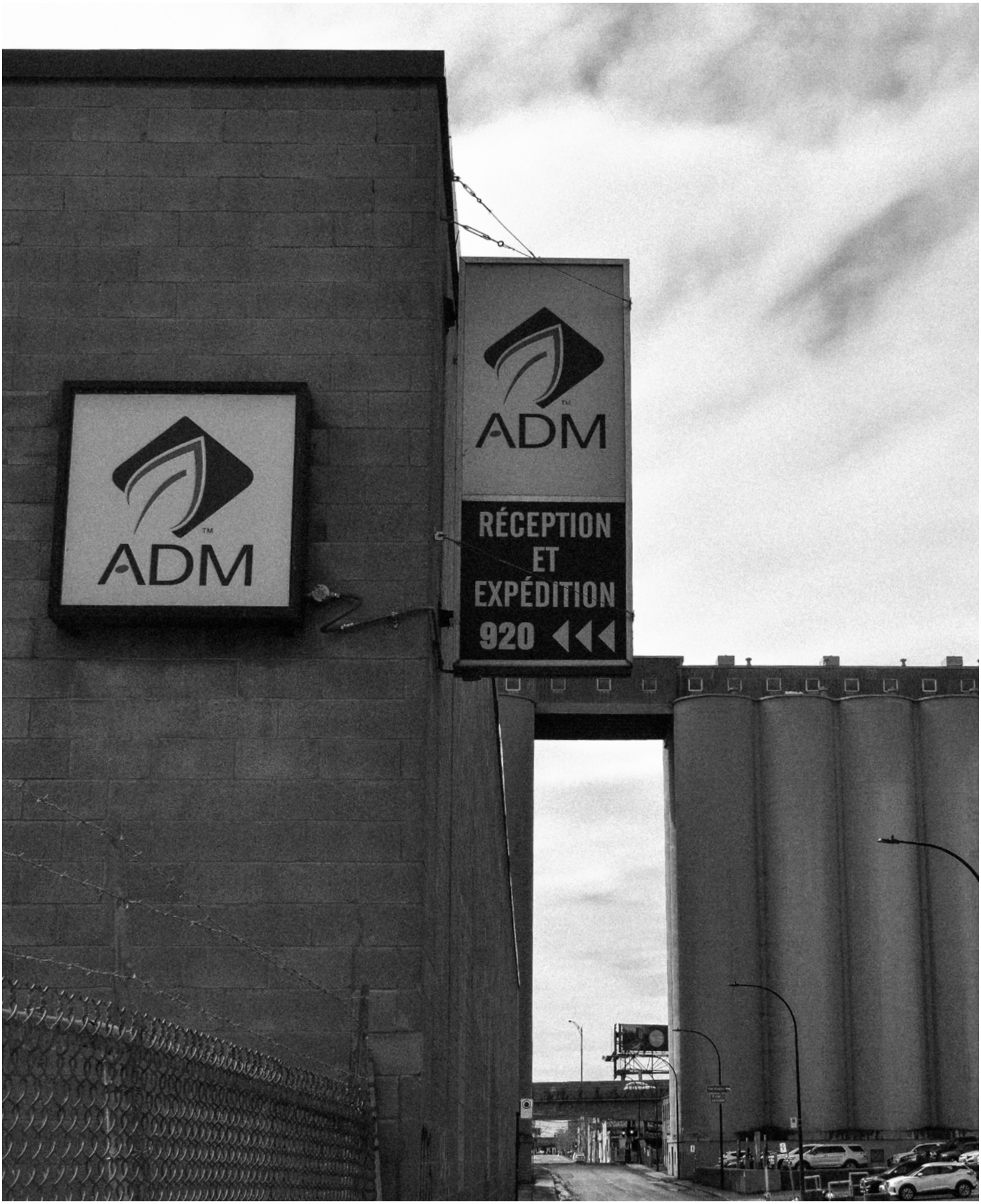


Fig. 3.24 : *ADM, owner of the Farine Five Roses Flour Mill business sign*

Image by Author

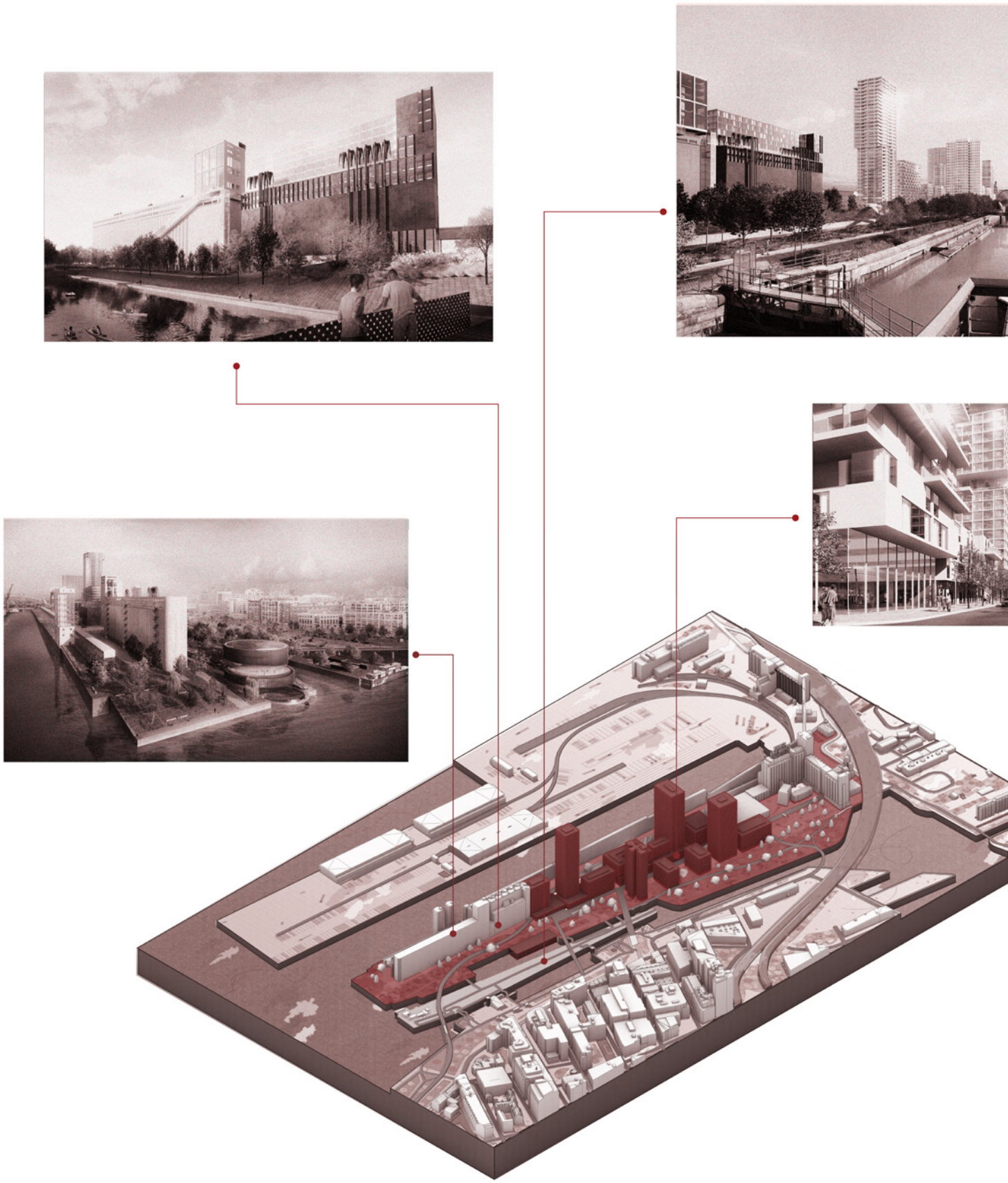
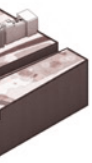


Fig. 3.25 : ***Bridge Bonaventure proposed 3d site with Proposed renders***

3d Model by Author, Images Sourced Online







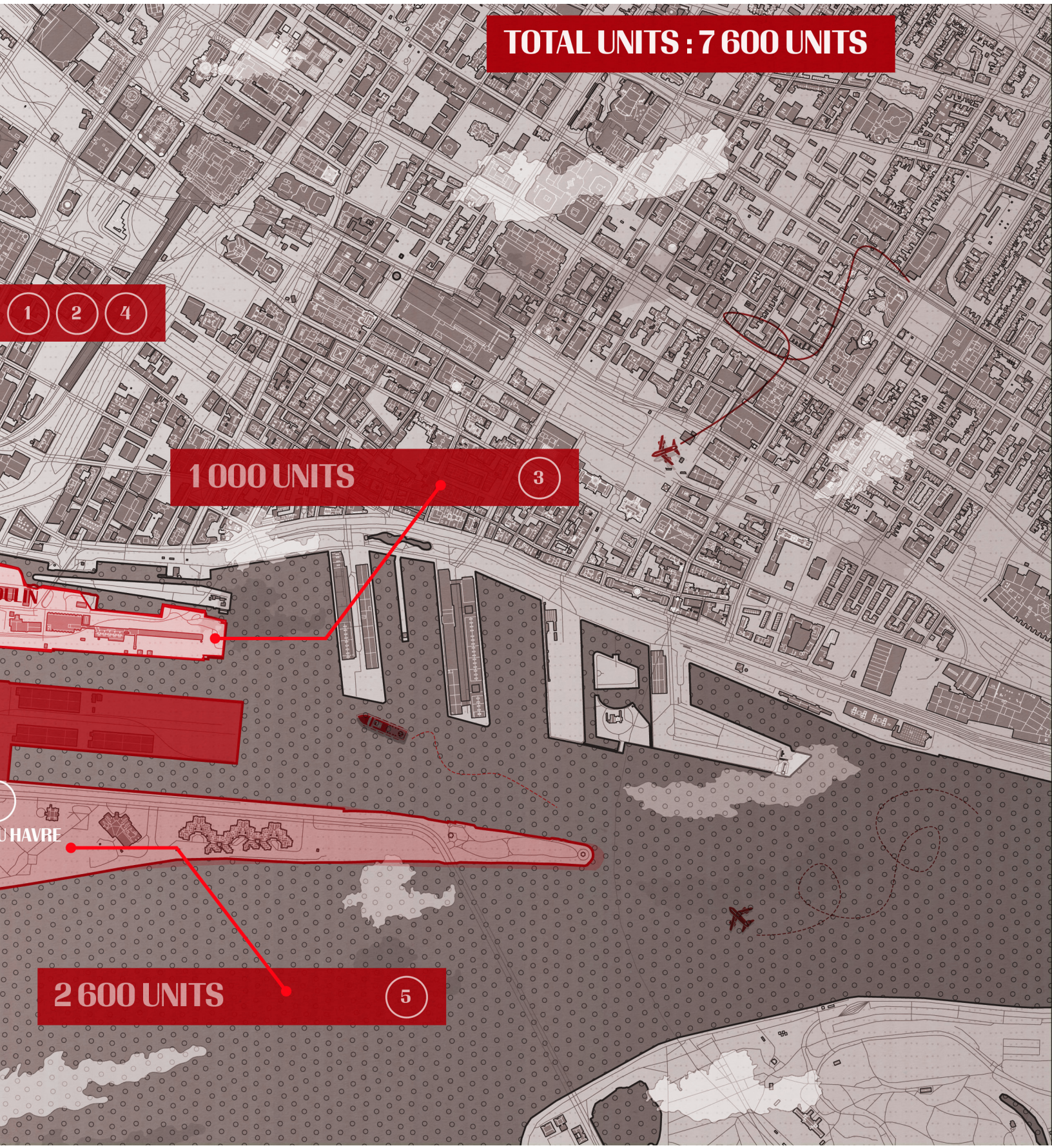
3.7 The Future of the Site – Bridge Bonaventure

The flour mill is economically and technologically up to date, demonstrating that the industry can continue to operate successfully for the long run. Since its acquisition in 1993, ADM has made several modernization investments in the flour mill, the most recent being around $20 million (ADM Agris-Industries Company, Paradis, and Luce Lafontaine Architectes 2019, 64).This is particularly significant since Montreal announced the creation of "Bridge Bonaventure," a major urban development project aiming to construct around the site over 7,600 new residential units by 2050 (Office de consultation publique de Montréal 2023, 28-36). Bridge Bonaventure will be divided into 6 different sub-sectors: Pointe Saint Charles North Triangle, Wellington Basin and surrounding area, the industrial harbour area, the Cité du Havre, the Pointe Saint Charles Business Park and Pointe du Moulin.



Fig. 3.26 : ***Bridge Bonaventure urban plan comprises 6 distinctive sub-sectors, the drawing shows each sub-sectors respective unit counts.***

Drawing by Author, Information from "Bridge-Bonaventure," Guardian


TOTAL UNITS : 7 600 UNITS
1 2 4
1 000 UNITS
3
2 600 UNITS
5

The urban proposal plans to demolish many buildings shown in light red on the map (figure 3). Silo Rozon is also part of these future demolished buildings. Silo Rozon is an important building that accentuates the site's industrial heritage with its large reinforced concrete silos, creating a feeling of entering a machine world. As part of the redevelopment plan, the Pointe du Moulin sub-sector is set to host around 1,000 new units. The residential buildings will be built around the iconic Farine Five Roses flour mill, which might impact the flour mill that is currently operating in an industrial setting.

The proposed project not only threatens the mill's viability but also adds insurmountable traffic in the neighbourhood, harming its operations (Triollet 2023, 30). The main areas of concern that will be further discussed in Chapter 5 are the potential loss of industrial heritage and community values associated with the mill. The Farine Five Roses mill represents a key industrial landmark in the community's history and collective memory. However, the flour mills are not valued in the proposed urban plan, and the renderings provided by the city are similar to condo towers that we could find in any city in the world.

This site is unique and precious and should be planned as such. The proposed plan is underestimating the site's potential as an asset for celebrating Canada's industrial heritage and its strong and thriving community.



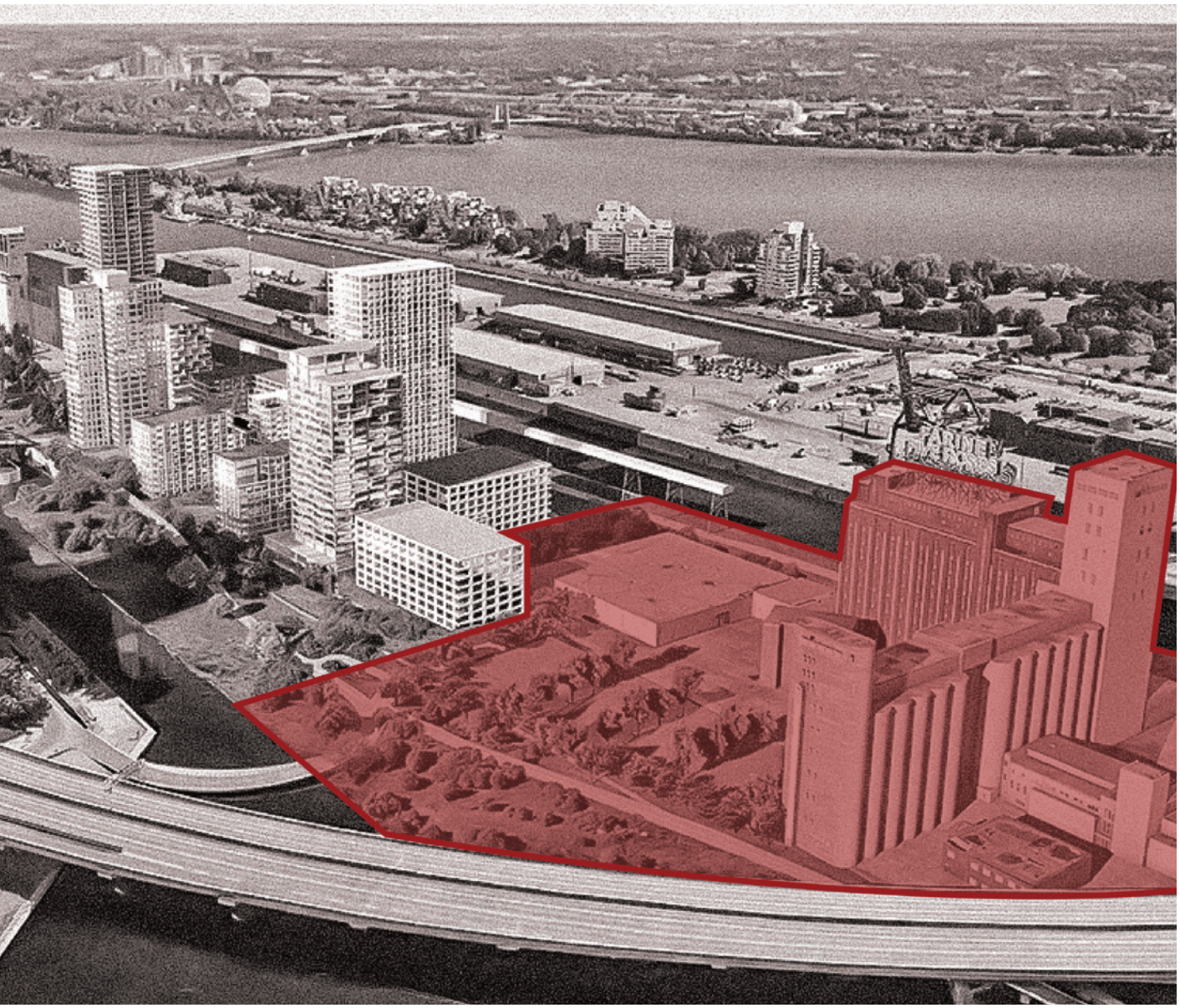


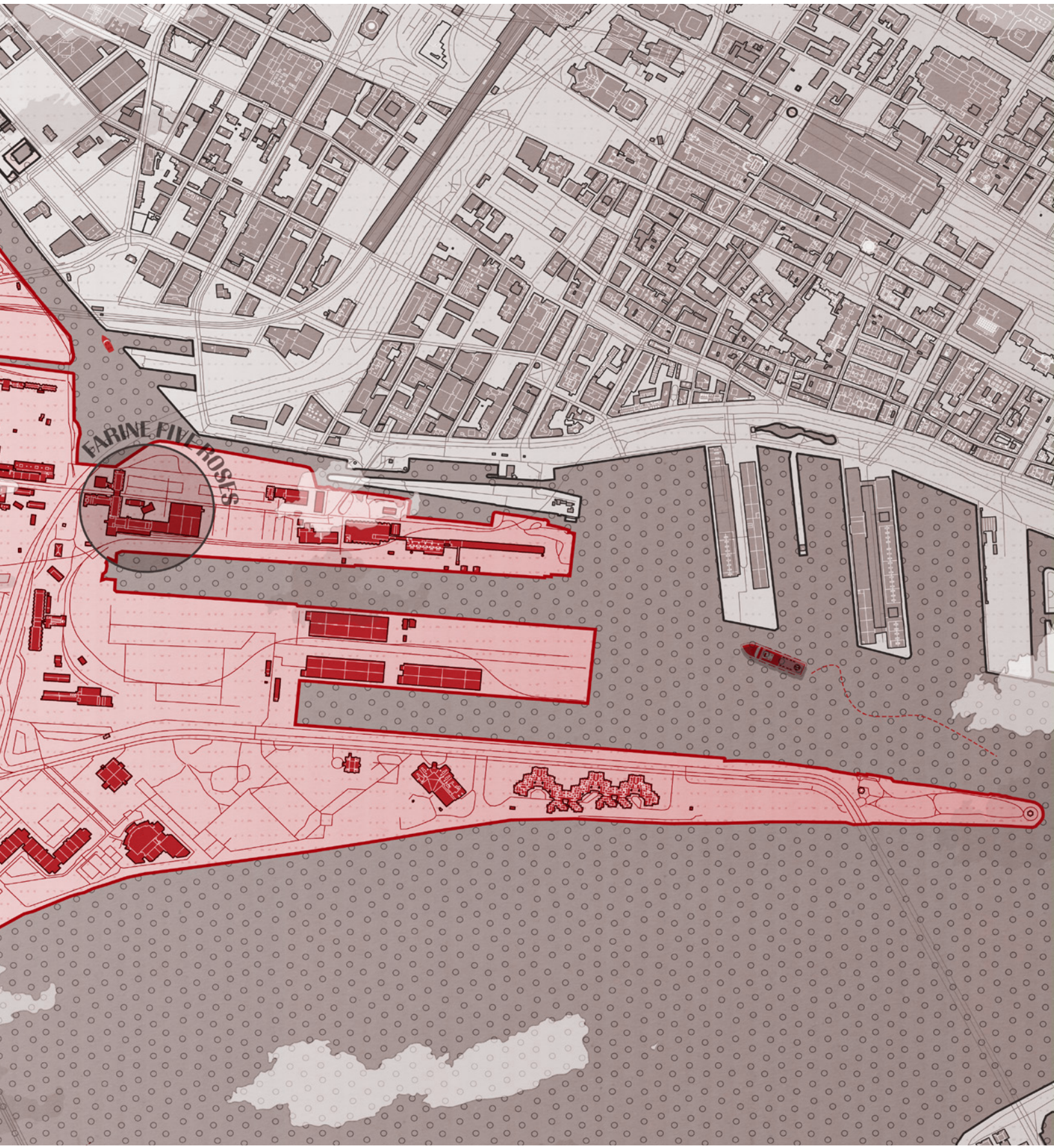
Fig. 3.27 : ***Bridge Bonaventure Proposal aroundFarine Five Roses showing in red the property boundary of the Flour Mill***

Illustration by Autor, Image sourced online



Fig. 3.28 : *Current existing condition of these areas, highliting in red the area of Bridge Bonaventure urban redevelopment.*

Drawing by Author


FARINE FIVE ROSES

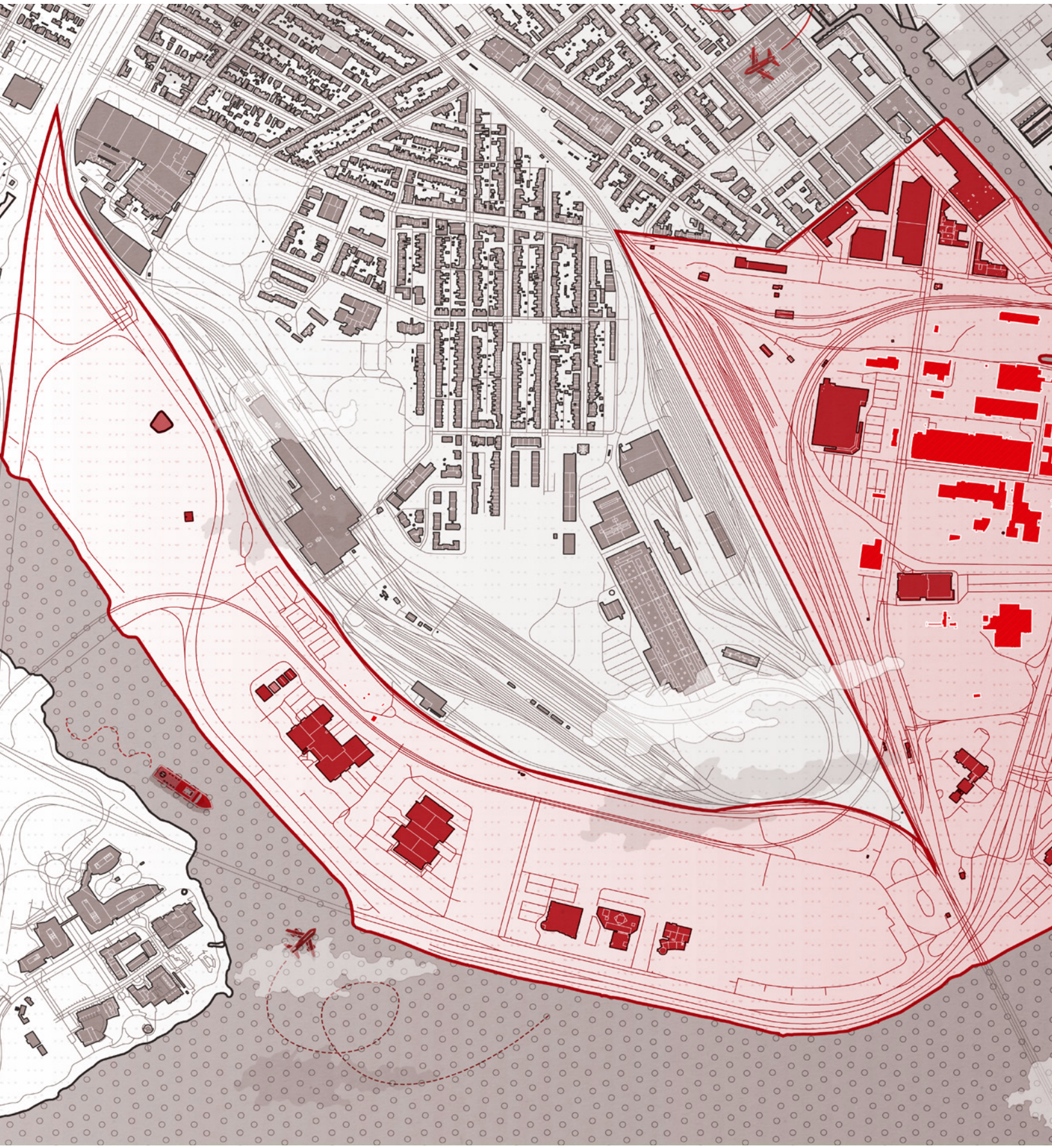


Fig. 3.29 : ***Bridge Bonaventure urban plan highlighting in a light red buildings demolition***

Drawing by Author, Information from "Bridge-Bonaventure," Guardian


FARINE FIVE ROSES



Fig. 3.30 : ***Bridge Bonaventure Proposed Urban Plan showing the densification of each sub-sectors.***

Drawing by Author, Information from "Bridge-Bonaventure," Guardian

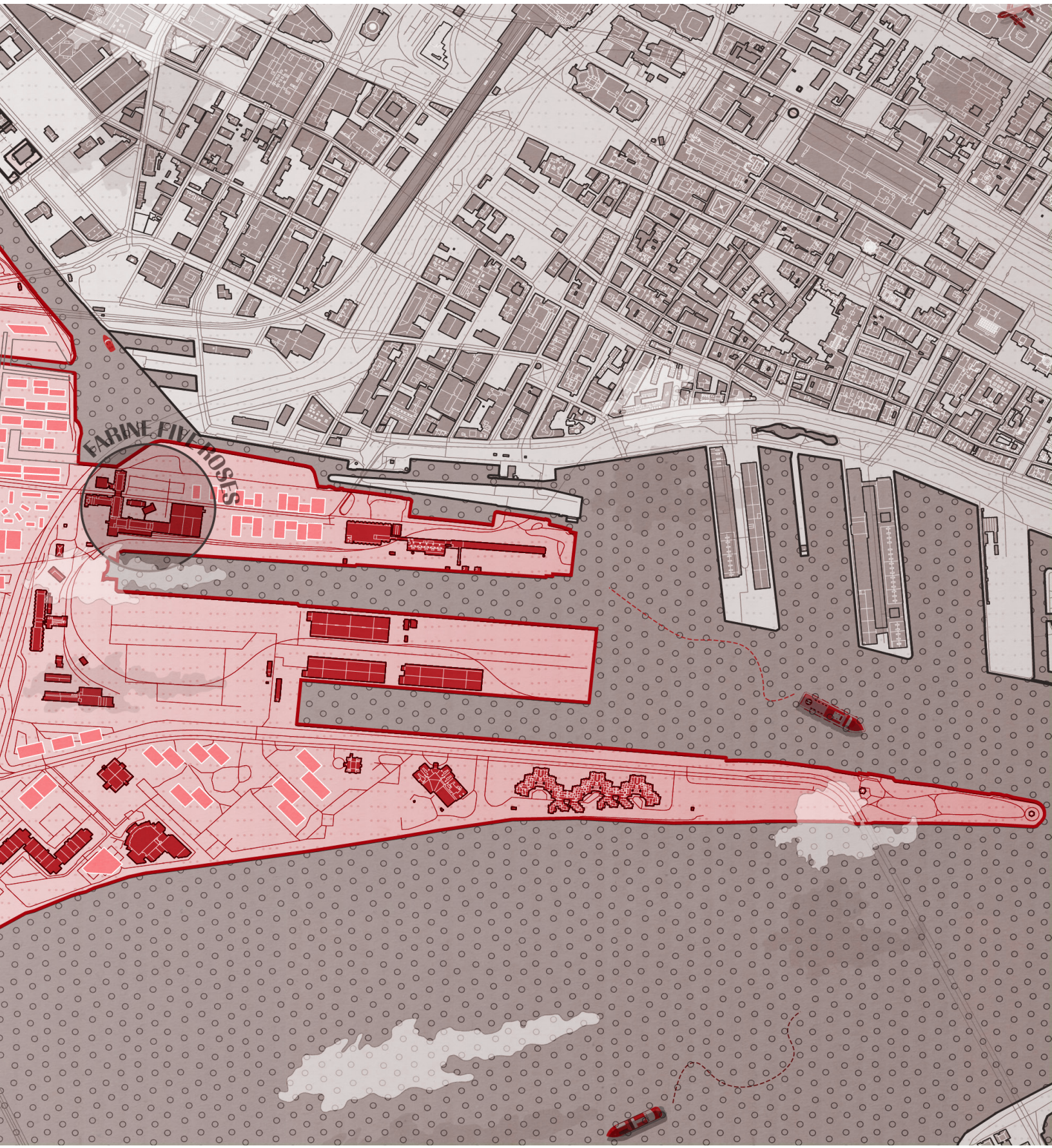

FARINE FIVE-ROSES



Fig. 3.31 : *On a rainy day, these abandoned structures create an apocalyptic scenery, highlighting the site's uniqueness.*

Image by Author



Chapter 3 will conclude with a drawing of the Farine Five Roses' history.

To conclude this chapter, the following drawing highlight the building's history and emphasize its significance within its urban context. I wanted to show what animated the building to remain in the Montreal skyline for so long. This drawing is an opportunity to delve deep and incorporate the strengths, influences, and physicality of the place. The building's complexity is evident through its history in relation to the several fields of civil engineering, structure, geotechnics, hydraulics, and transportation. Additionally, its importance is depicted through the history of flour milling, as it is one of the largest flour mills in Canada. It was therefore crucial for the illustration to relate not only to the grain and milling industry, but also to the architectural and urban history of the building.

Creating this entangled story around the building, discovering why it was built, by whom and for what purpose really engaged my thoughts about the potential challenges that may arise when designing around the site. This story highlights the significance of the building and what could be envisioned in the future to maintain the success that this site has achieved in terms of research, development, innovative processes, and new industrial equipment.

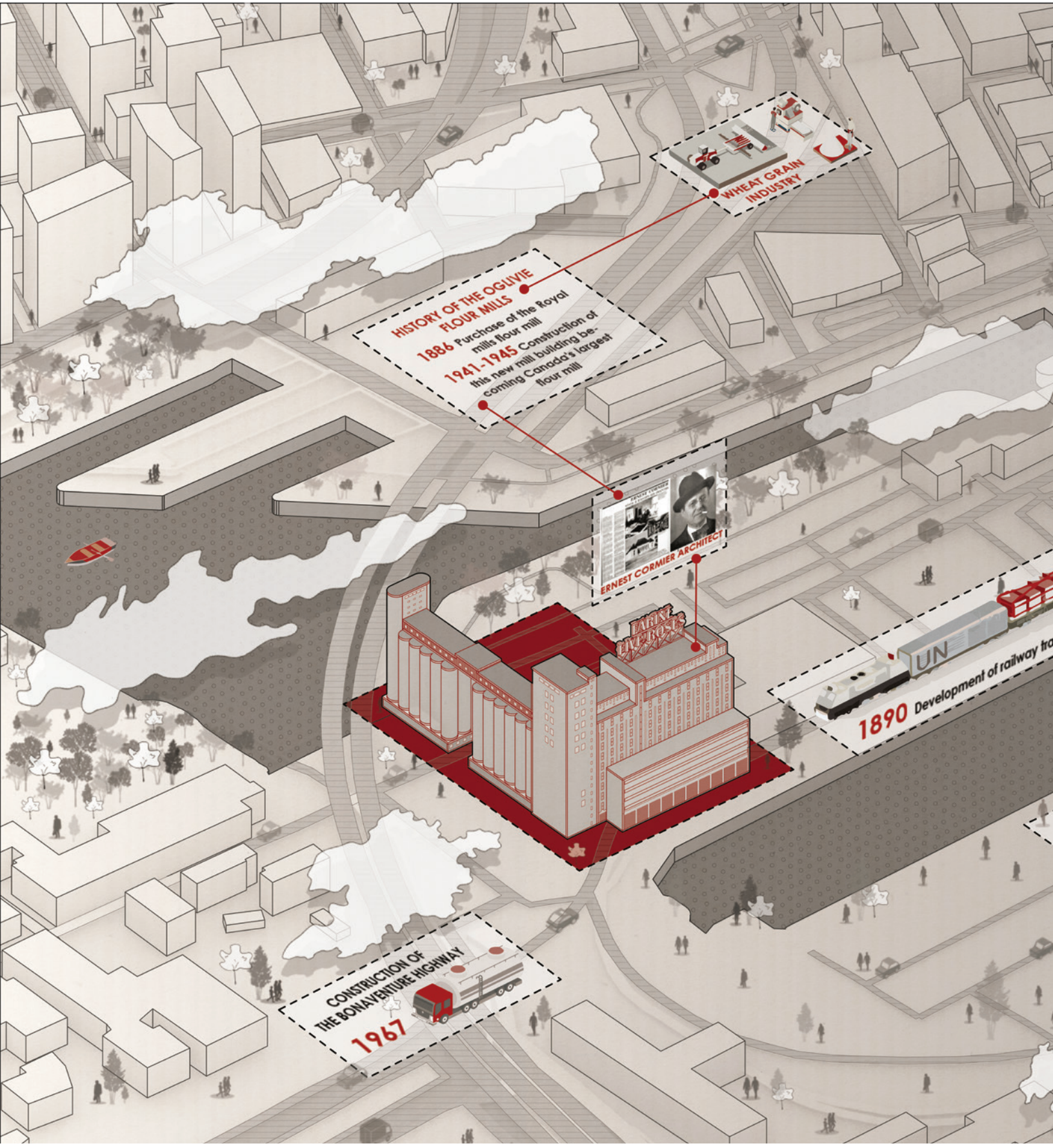


Fig. 3.32 : ***Entangled Story of Farine Five Roses***

Drawing by Author, Information from "Bridge-Bonaventure," Guardian


1704
BUILDING THE FIRST WINDMILL
1860
First port facilities enabling the transit of wheat to Western Canada
Wheat Storage
1848
HYDROPOWER AT POINTE DU MOULIN
MAÎTRES CHEZ NOUS
1992
CULTURAL AND RECREATIONAL PUBLIC SPACE

Chapter 04

Study of Pointe-du-Moulin, Bridge Bonaventure redevelopment plan & Design Proposal: The Vertical City Mills

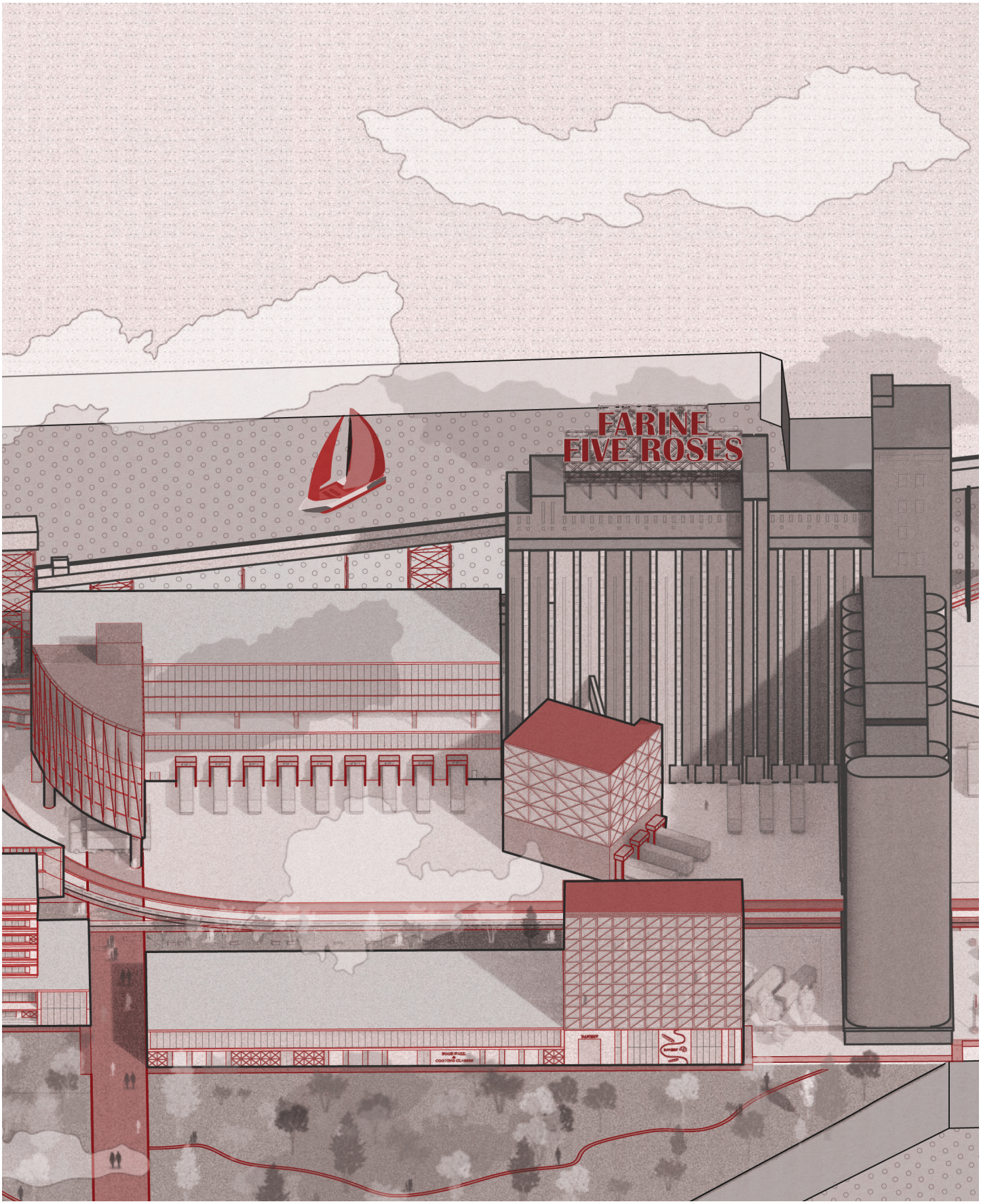


Fig. 4.1 : Design Proposal of Farine Five Roses Building Complexes

Drawing by Author

Design Proposal

Chapter 04

"

The problems that industry causes urban design can only be solved if industry is once again understood as an inherent part of the city. The allocation of each industry should be planned with regard to its potential to enrich or disturb life in the city.

"

Helmut C. Schulitz
(Schulitz 1992, 17)

4.1 Introduction

This chapter explores the challenges and potential of Pointe-du-Moulin and suggests an urban renewal plan for the area. As discussed in chapter 03, this site and its operating flour mill possess a unique character that must be preserved as the area densifies. Montreal must respond to its housing crisis, but not at the expense of its historical heritage. The first part of this chapter focuses on the challenges posed by the current site, explaining its overall condition. We then look at how the city plans to redevelop the site, examining the advantages and disadvantages of this master plan. We will then study an alternative urban redevelopment proposal for the site, which would highlight the pier and its history through structures intended to provide both public access and residential housing. This new proposal aims to better integrate the operational flour mill into its future urban fabric while preserving the site's character.



Fig. 4.2 : Image showing the existing condition of Farine Five Roses Building in the winter season

Image by Nigel MacNeil, 2022



4.2 Challenges Posed by the Existing Site

The site itself poses several challenges. It is very narrow, making it difficult to create housing units while retaining an industrial character. Five main elements are at the core of the challenges or potential opportunities for re-developing the space.

1- The Bonaventure Highway, which goes above the flour mill, can be a nuisance and block the view towards the site. However, this road also provides better truck access to the flour mill.

2- The train track that transports wheat to the flour mill also blocks access to the site's east side, preventing access to the waterfront. While good transportation access benefits the flour mill, this train track can be seen as a dangerous element when mixed with public activity.

3- Mill Street is a two-way road that runs through the pier, dividing the site into two "formal" sides. The road could raise concerns for future residential development, as over 100 trucks travel daily to the flour mill and regular commuter traffic. The road's busyness may also detract from the pleasantness of walking and biking in the area, potentially impacting the character of Montreal.

4- The massive existing structures, such as Silo 5 and Silo Rozon, are abandoned and can add challenges for architects and urban planners to integrate and repurpose them. However, these structures are vital in emphasizing and preserving the site's distinctive industrial character. Additionally, the presence of these silos has prevented soil contamination at Pointe-du-Moulin, making this industrial site easier to redevelop. (Ville de Montréal, Service de l'environnement, n.d.)



Fig. 4.3 : Depiction of Existing Site Conditions through Photographs.

Images by Author



Fig. 4.4 : Image showing the existing Bonaventure Expressway that comes a little before Pointe-du-Moulin starts

Image by Jean-Louis Plamondon, 2015





Fig. 4.5 : Depiction of Existing Site Mobility Conditions through Photographs.

Images by Author

5- The overall urban decay* of the Pointe-du-Moulin, almost entirely devoid of public visibility, ultimately acts as a dead zone for the famous 14.5 km pedestrian and cycling path that runs along the Lachine Canal since its inauguration in 1977 (Tourisme Montréal, 2024). (* *Urban Decay refers to the process where parts of a city or town become neglected*)

This trail, named the "Canal Lachine Multipurpose Path," is not accessible by car and is one of Montreal's oldest circuits. It is also ranked as one of the "most beautiful urban circuits in the world" (Tourisme Montréal, 2024). The trail is a popular choice for those who enjoy the unique green spaces it surrounds. However, when the trail reaches Pointe-du-Moulin, it becomes evident that there is a need to revitalize the existing green spaces as they are not well-maintained.

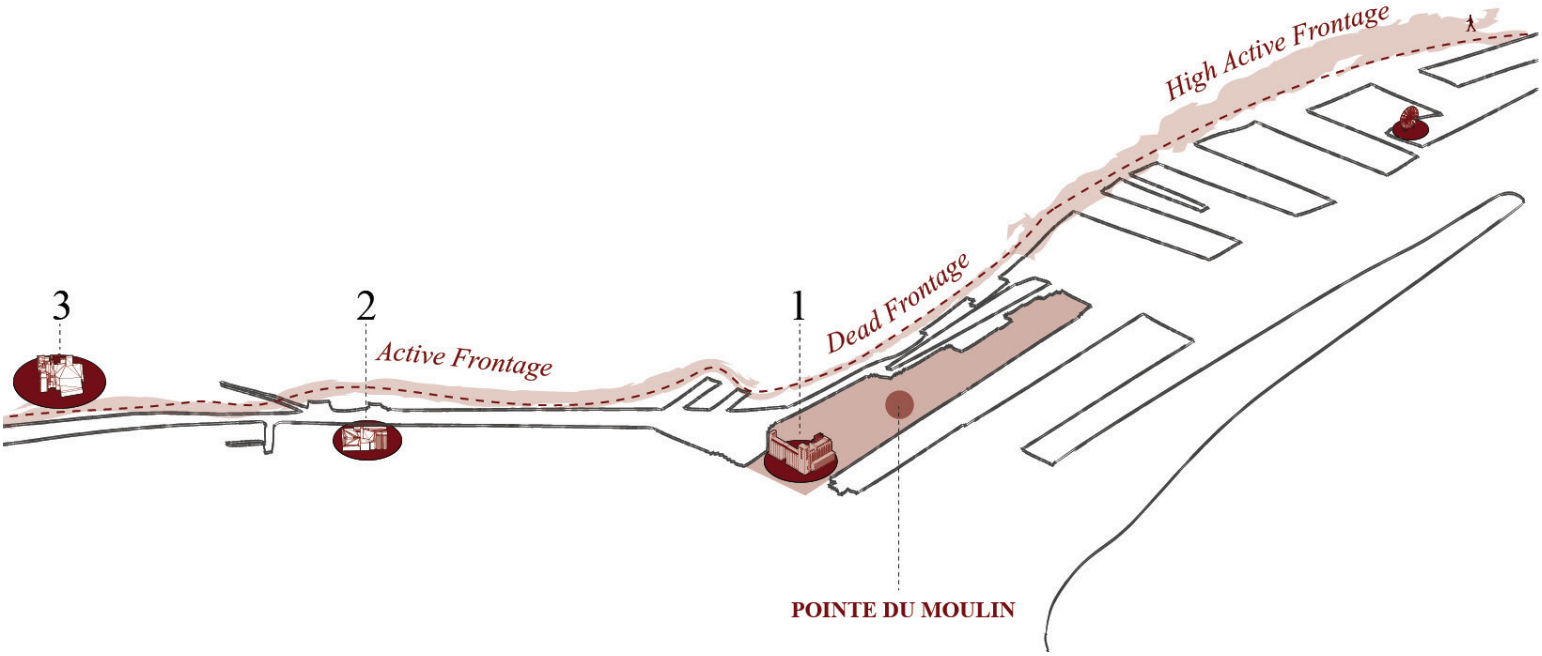


Fig. 4.6 : Canal Lachine Multipurpose Path

Drawing by Author

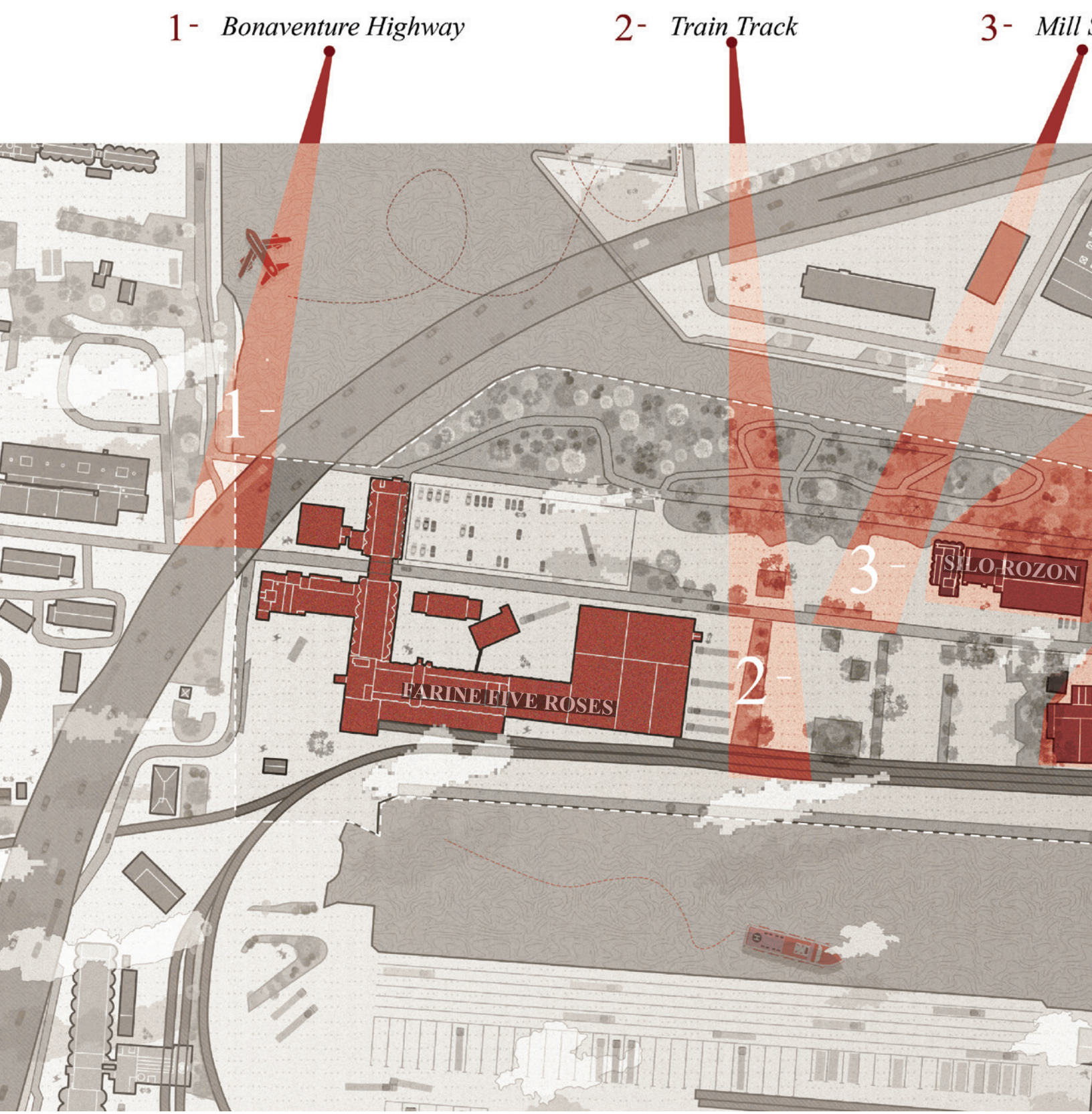
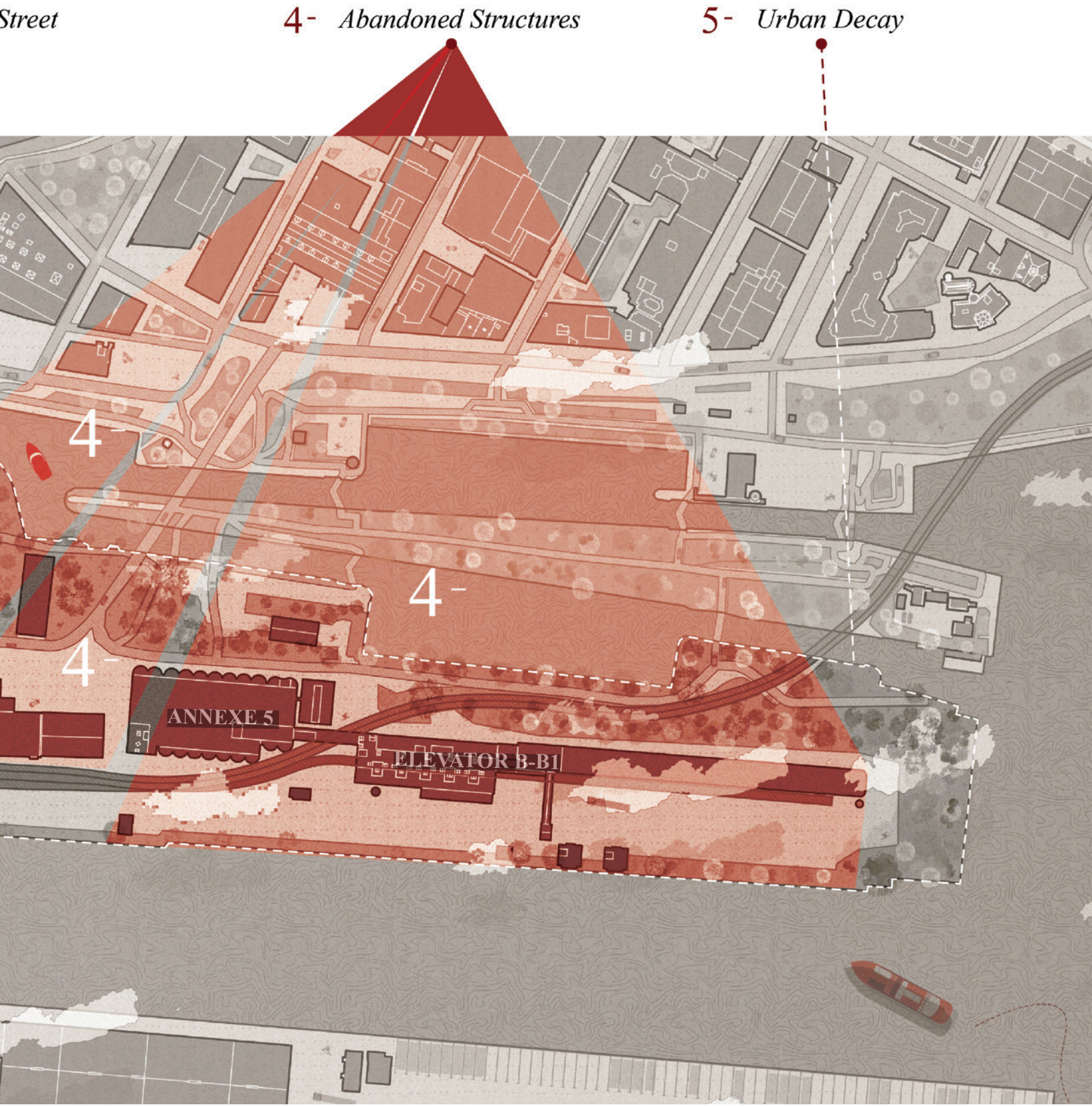


Fig. 4.7 : Five key elements central to the challenges and potential opportunities for redeveloping the space.

Drawing by Author


Street
4- Abandoned Structures
5- Urban Decay
4-
4-
4-
ANNEXE 5
ELEVATOR B-B1

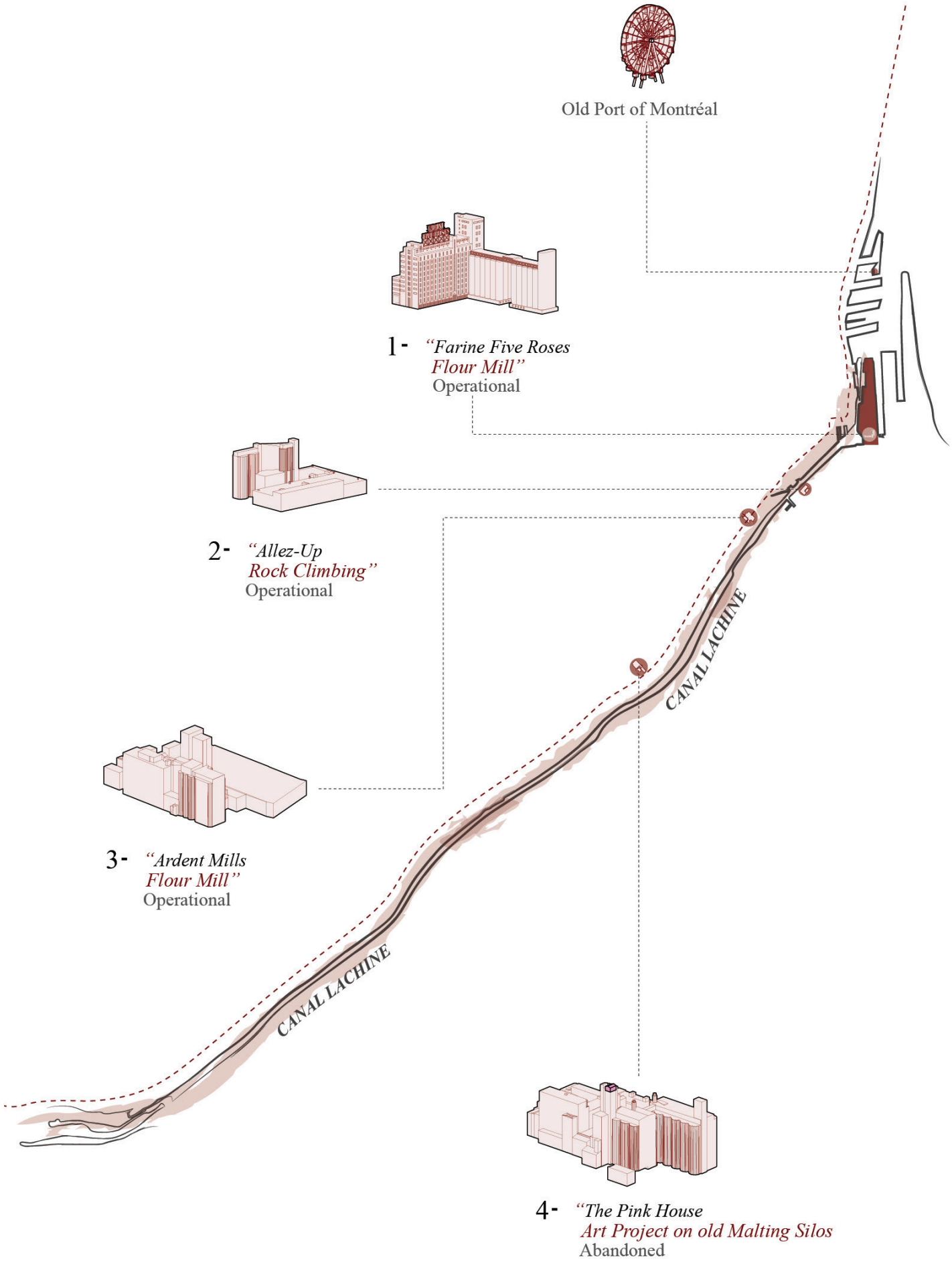


Fig. 4.8 : Canal Lachine & its Grain Elevators Landmarks

Drawing by Author

The Figure on the left illustrates how the path along the Canal Lachine preserves the heritage of the grain silos and their associated mills. This multifunctional trail features several silo structures along its route:

- Arden Mills is a flour mill operating in a residential area along the canal.

- “Allez-Up” is a repurposed grain elevator now used for climbing.

- The iconic “pink house,” created by an anonymous artist who climbed an abandoned grain silo to paint the top pink, became a famous landmark in 2019.

All these elements demonstrate the city’s commitment to maintaining its industrial heritage.

The city of Montreal also offers a handbook named Taking Action! Montréal’s Industrial Areas in Transition. This handbook discusses the four main types of industrial sites. It describes the Bridge Bonaventure project as a central, monofunctional use, a type that needs to be close to the city, and an industrial site that is a marker of Montreal’s identity. Figure 4.9 shows the common observations made from this type of central, monofunctional use, reflecting on elements specifically present at the Pointe-du-Moulin site.

1 Extensive hardscaped surfaces used for outdoor parking

2 Energy-intensive manufacturing operations

3 Predominance of manufacturing buildings with imposing volumes and sizes that make their req

4 Proximity of residential uses

5 Urban environment presenting challenges in terms of safety and co-existence with users

6 Obsolete or vacant remnants of the industrial past with untapped heritage presentation potential

7 Blind or low-permeability façades (materiality, rhythm, openings)

8 Large buildings with substantial footprints and generic architecture (low-rise, monolithic)

9 Use of toxic or polluting materials

10 Physical barriers and enclosure of the area

11 Inaccessible shorelines and unexploited water views

12 Underutilized and vacant lots

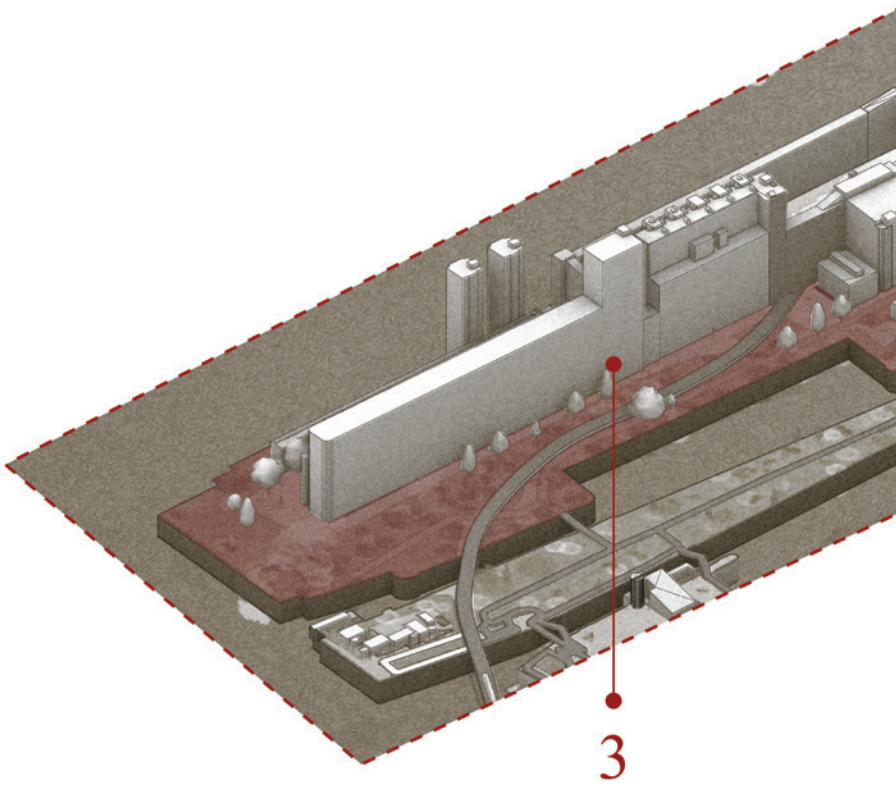
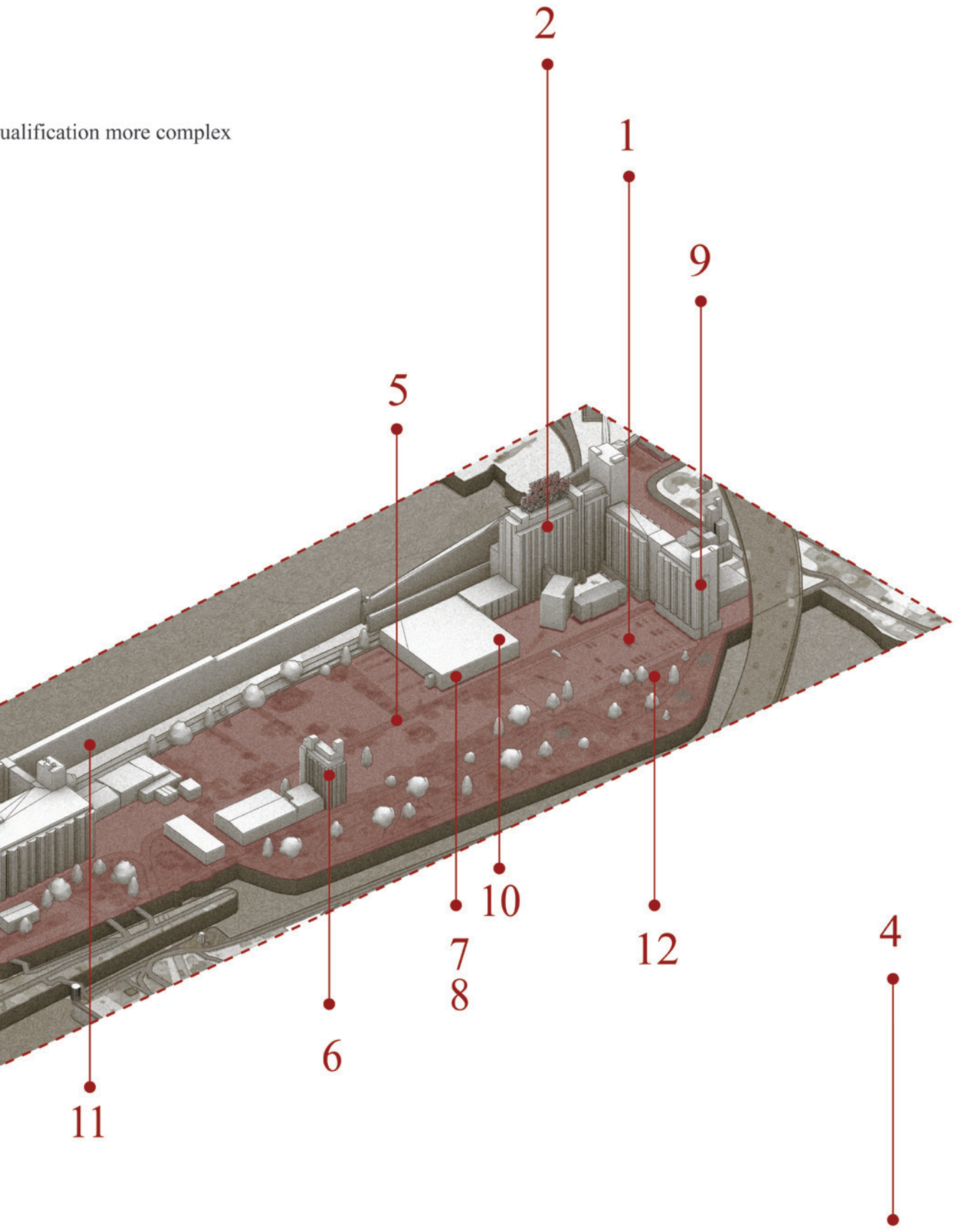


Fig. 4.9 : Observation of the Central Monofunctional Use on Pointe-du-Moulin.

Drawing by Author

ualification more complex



4.3 Challenges posed by Bridge Bonaventure

Now that we have a good overview of the current site, we can look at the city's proposed massing plan in more detail. The figure on the right immediately shows that Pointe-du-Moulin will be a high-density area.

Proposed Density

In 2014, the floor area ratio was limited to 3.0 F.A.R. on Pointe-du-Moulin. Bridge Bonaventure is now looking to go up to 9.0 F.A.R. The densification used in the proposal must fit the context of Pointe-du-Moulin, a relatively small site surrounded by water. Smarter densification should be planned more carefully to free up an entire section of the site for public use by extending the Lachine Canal multifunctional trail and revitalizing the frontage of Pointe-du-Moulin. This density must also be adapted to the site to ensure that the outstanding industrial structures remain in evidence.

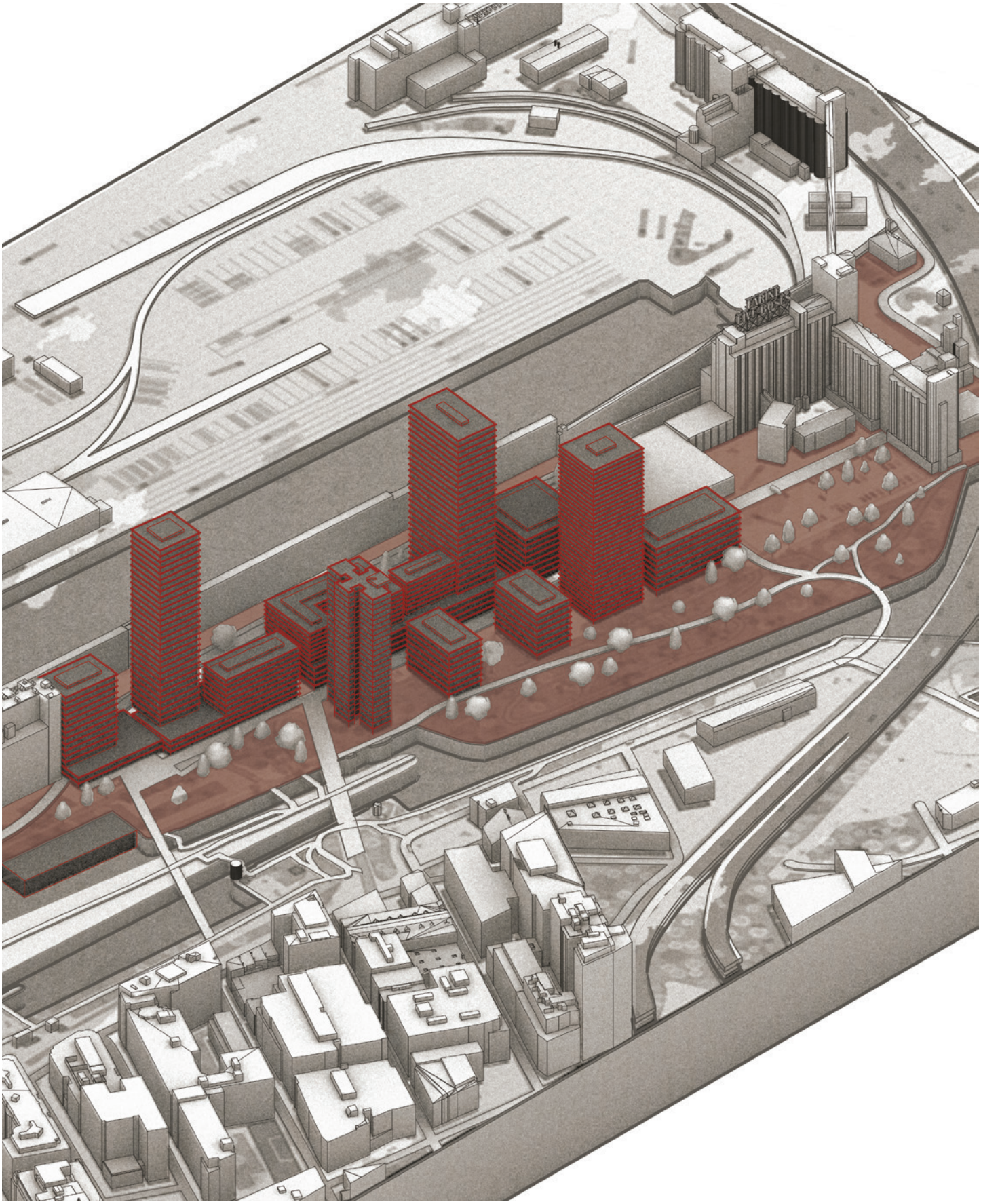


Fig. 4.10 : *3d Model of the proposed Birdge Bonaventure planning for Pointe-du-Moulin*

Drawing by Author



Fig. 4.11 : ***Renders of Bridge Bonaventure Proposal showing the new height of 120m hiding the heritage sign.***

Image Sourced Online

Proposed Buildings Height

The renders and 3D model shown on the previous page show that the new height proposed by Bridge Bonaventure will hide the heritage sign of the flour mill and the view of many walking points of the city. The building height for Pointe-du-Moulin was set at 80 meters in 2015, but the city's proposal suggests raising it to 120 meters. While the plan aims to introduce variation in building heights and styles, the renders provided by the city lack distinctive character. These renders represent an urban redevelopment that could take place in any city around the world.

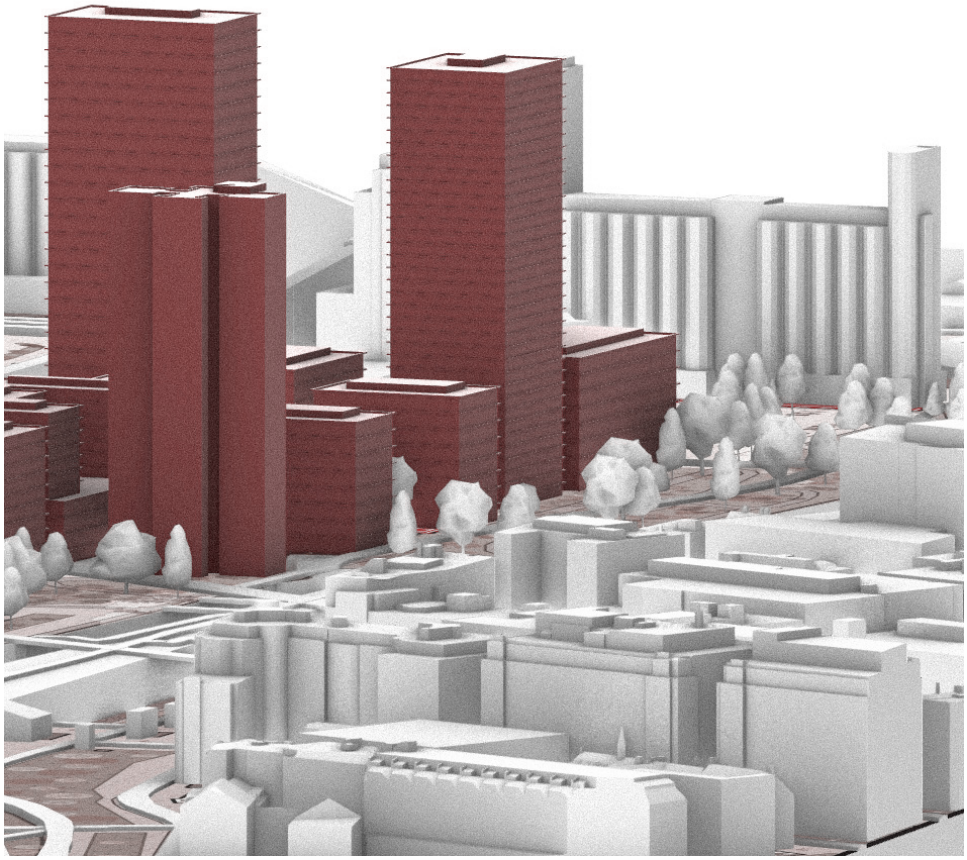


Fig. 4.12 : ***3d Model of the blocks proposed which hiding the heritage sign.***

Drawing by Author,

Proposed Circulation

Mill Street is kept as it is, still operating as a two-way road, which will inevitably attract more cars and block the traffic for the mill to operate efficiently. Rethinking circulation to support the development of public transportation and active mobility is a crucial objective for Montreal's 2050 goals, and this proposal must address it more effectively. There are better solutions than keeping the main road accessible by cars and trucks. Creating and continuing the Canal Lachine Multipurpose path for humans to walk and bike comfortably remains a better solution for human health and the planet.

The ground floor plan, recreated from a photo in the Bridge Bonaventure Report, shows that a pedestrian bridge has been added to the southern part of the pier. This bridge will allow better access to the southern part of the site, which is not as accessible at the moment as the main pedestrian bridges only exist on the northern part of the site.



Fig. 4.13 : ***Renders of Bridge Bonaventure Proposal highlighting Mill Street's prioritization of car use over soft mobility.***

Image Sourced Online

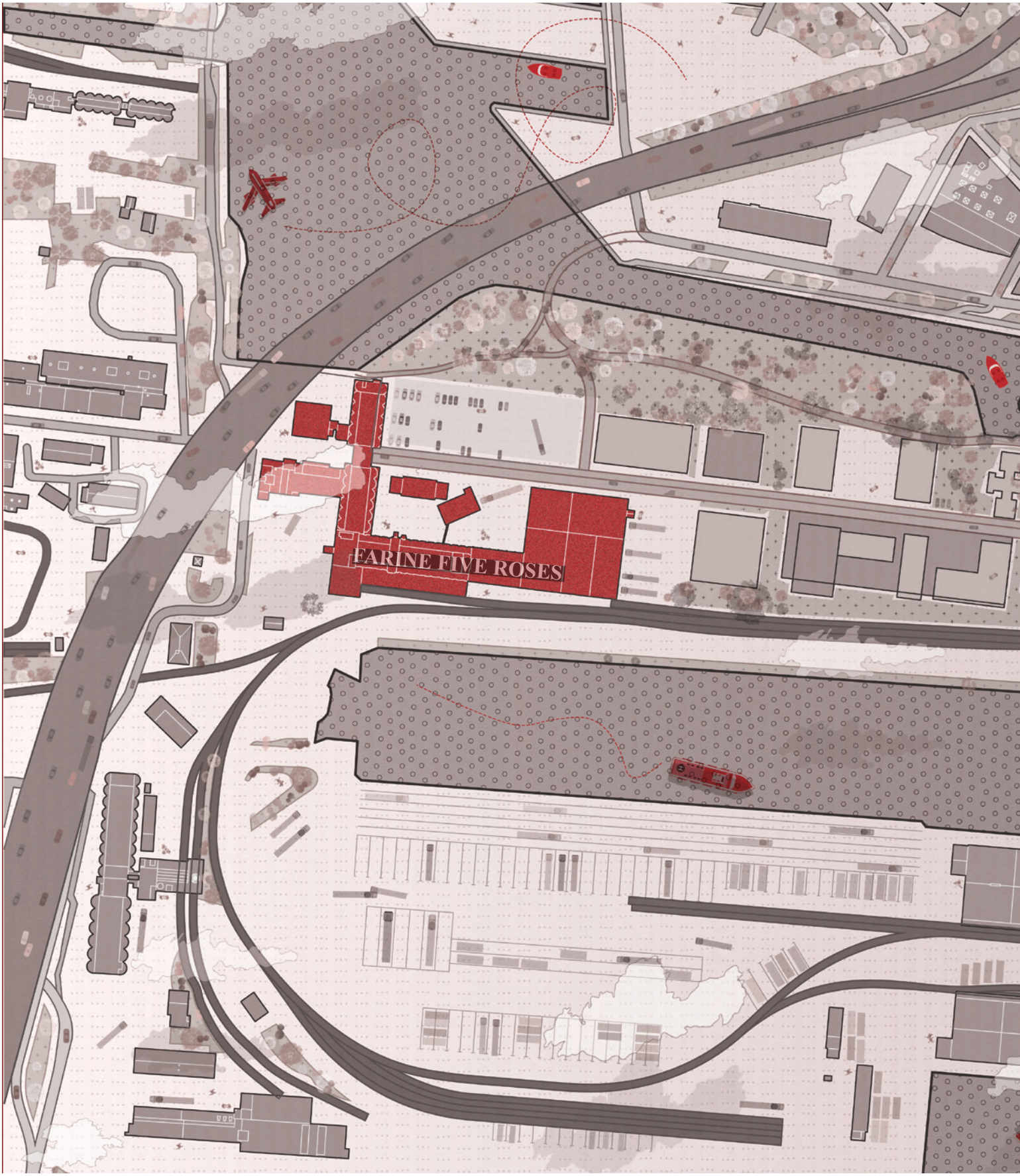


Fig. 4.14 : *Birdge Bonaventure Proposed plan for Pointe-du-Moulin Redevelopment.*

Image by Author



** The red buildings are the existing buildings - Silo Rozon and Annexe 5 are to be demolished*



Fig. 4.15 : ***Birdge Bonaventure Proposed Render for Silo N5 (Elevators B & B-1)***

Image Sourced Online



** In Bridge Bonaventure Proposal Annexe 5 is to be demolished.*

Proposed Heritage Preservation

The proposed plan aims to activate and repurpose the northern part of the site, giving Silo 5 a new function (see Figure 4.17). This approach will successfully attract people while preserving Grain Elevator B & B1 to meet future residential and citizen needs. This part of the project blends harmoniously with the site's character, reflecting the spirit of the Lachine Canal and the old ports of Montreal.

However, the ground floor plan shows that Silo Rozon and Annexe 5 are planned to be demolished and replaced with residential condos. Demolishing such industrial structures should not be permitted and should be repurposed at all costs.



Fig. 4.16 : ***Front View of the Elevator B with a new proposed circular building (the function has not been determined)***

Image Sourced Online

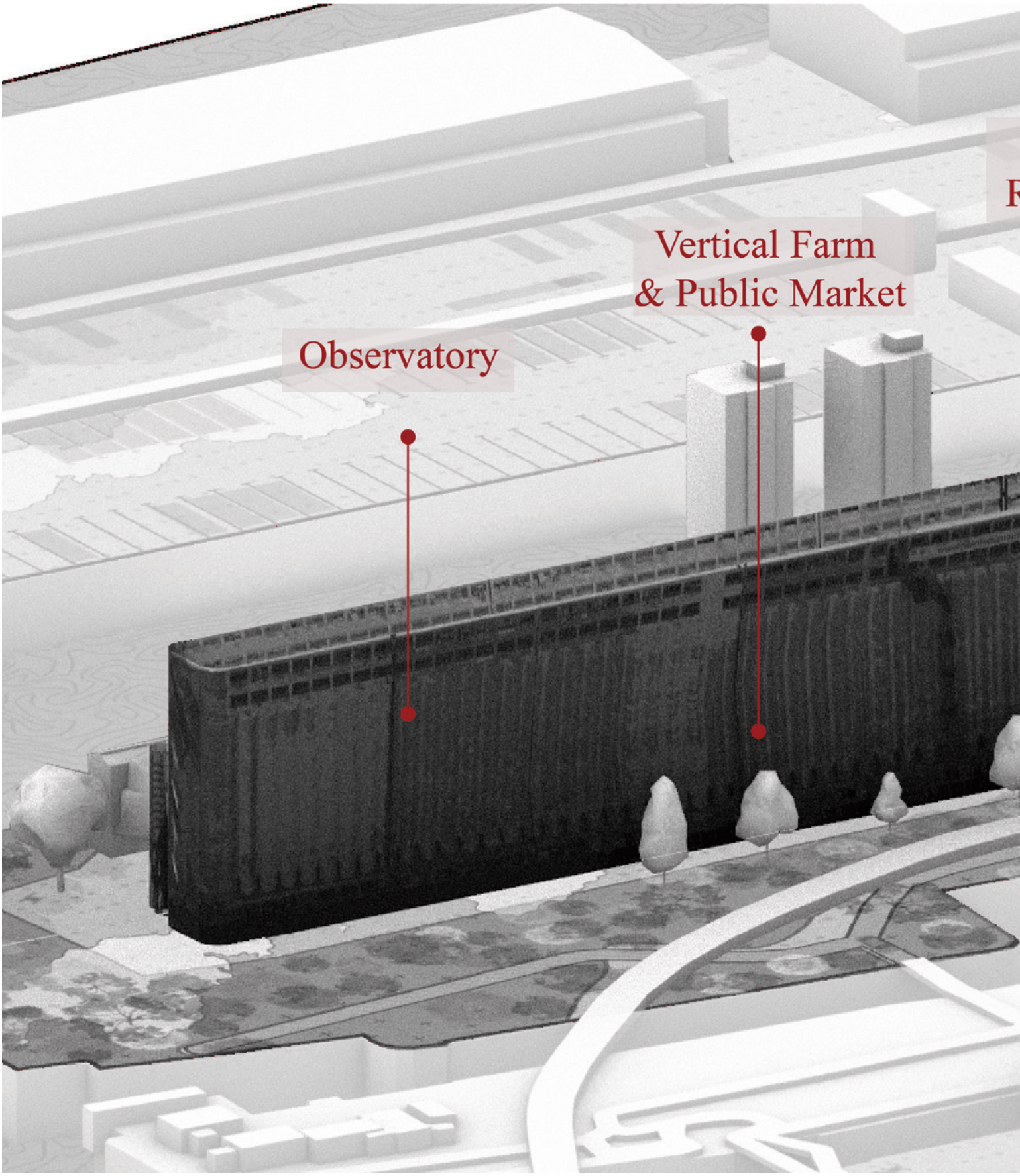
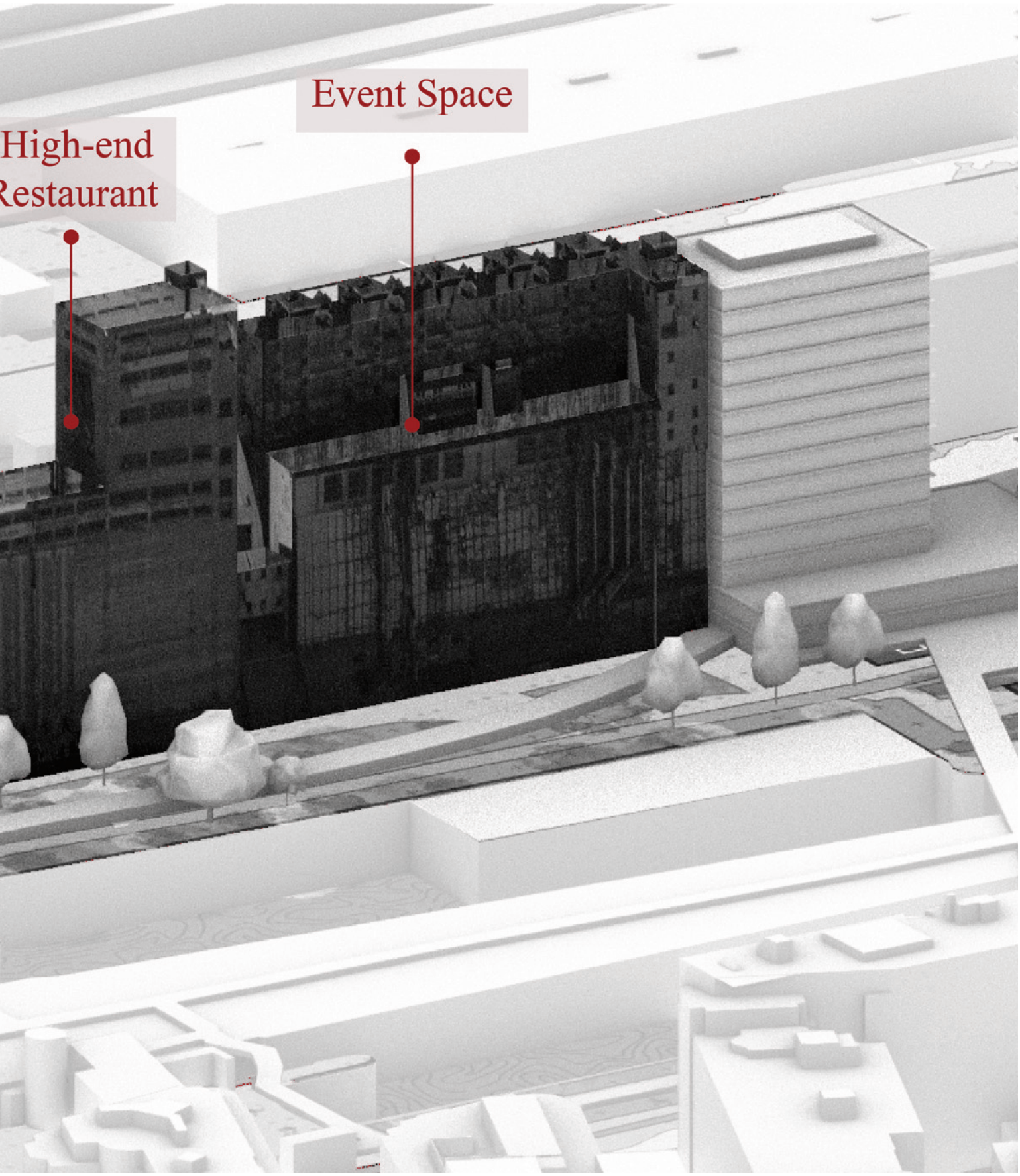


Fig. 4.17 : ***Bridge Bonaventure Programs Plan of Silo 5 (Elevators B-B1).***

Image by Author


Event Space
High-end
Restaurant

1- *Towards the river from the Kondiaronk lookout*

2- *Towards Silo No. 5 from Commune Street West*

3- *Towards ADM from Commune Street West*

4- *Towards ADM from the Peel Basin*

5- *Towards Silo No. 5 from the Peel Basin*

6- *Towards Silo No. 5 from the Old Port of Montreal*

7- *Towards Silo No. 5 from the axis of the Faubourg des Récollets*

8- *Towards ADM from the Bonaventure Expressway*

9- *Towards ADM and Rozon silos from Robert-Bourassa*

10- *Towards ADM (portico) from Mill Street*

11- *Towards Old Montreal and the river from Pointe-du-Moulin*

12- *Panoramic view from the roof of Silo No. 5*

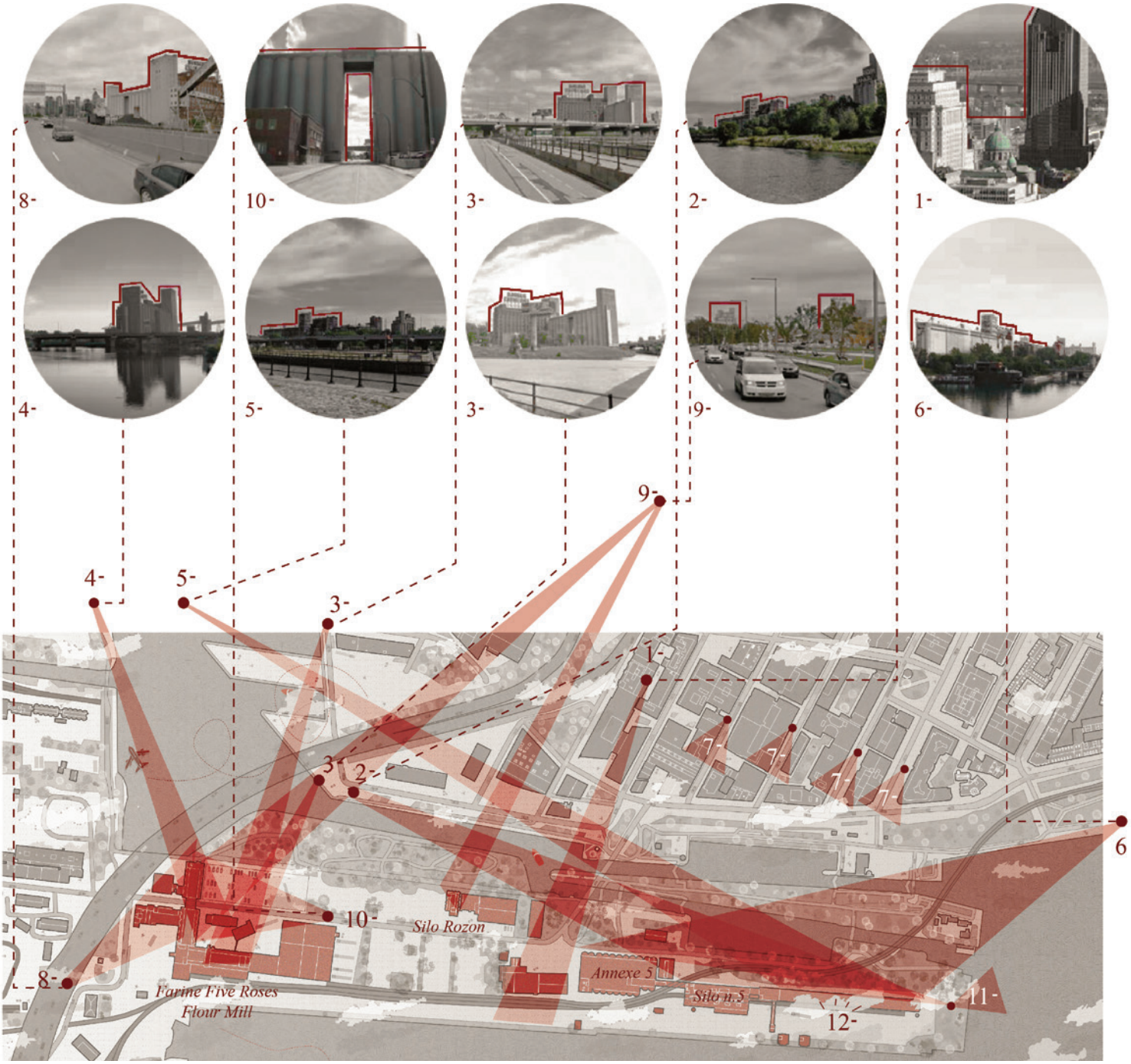


Fig. 4.18 : ***View of Interest, Pointe-du-Moulin***

Drawing by Author, Images and Exact Information sourced Online

Concluding Remarks on the Proposed Plan

In conclusion, the proposed massing plan for Pointe-du-Moulin raises important considerations and concerns regarding density, building height, circulation, and heritage preservation. While densification and redevelopment are essential to urban growth, the plan must ensure that the site's context and existing structures are respected and highlighted. Balancing the need for development with the preservation of historical and industrial landmarks is crucial.

The proposed plan successfully redesigned the northern part of the site but failed to address and activate the southern part: new buildings are built along the mill's property line, leaving the space around the mill unresolved. In this plan, the flour mill must be highlighted and not treated as an unwanted structure failing to celebrate its significance. Additionally, the plan needs to rethink the flow of traffic to prioritize the mill's viability and encourage public transport and active mobility. This reconfiguration will help create a more people-centred development.

Finally, the proposed plan must reflect the site's uniqueness, as it lacks identity and character. The site's history and existing structures, abandoned or operational, should be the driving force behind this future urban plan.

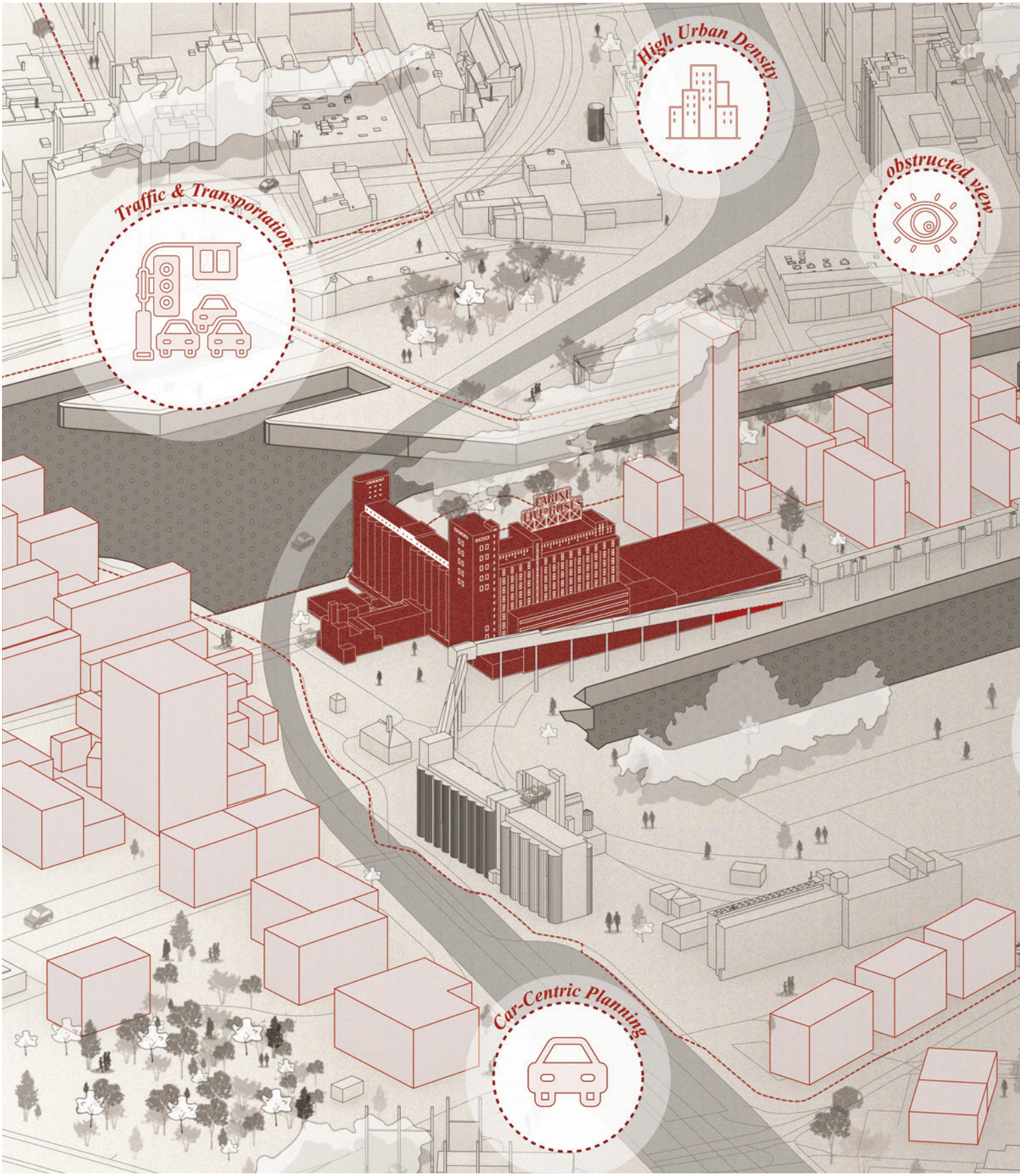
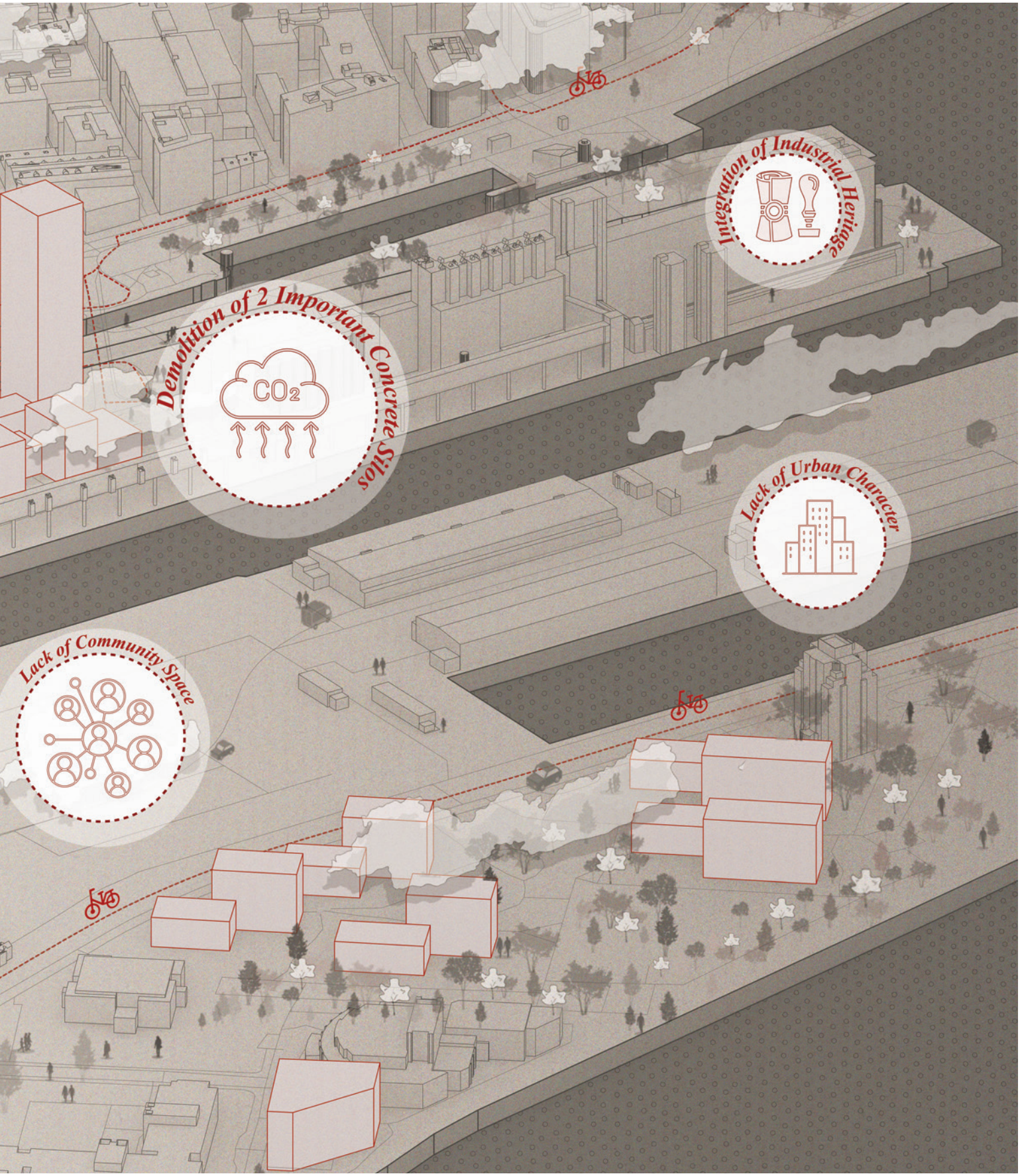


Fig. 4.19 : *The Challenges of a future dense populated area in Pointe-du-Moulin*

Drawing by Author


Integration of Industrial Heritage
Demolition of 2 Important Concrete Silos
CO_2
Lack of Urban Character
Lack of Community Space

Reviving the Roses:

Design Proposal - The Vertical City Mills

4.4 Design Brief: The Vertical City Mills

The Vertical City Mills proposal aims to revitalize Pointe-du-Moulin, an industrial area in Montreal, by balancing the preservation of its historical flour mill and industrial structures with the city's need for new housing and soft mobility. This plan addresses the site's challenges, including the integration of abandoned structures, improving access to the waterfront, the ground circulation and enhancing public spaces. This proposal aim to create a space where people see value in obsolete buildings by creating different activities around them.

As mentioned previously, the Vertical City Mills proposal assumes that key elements of the Bridge Bonaventure project—such as the overall increase in density, the development of residential and commercial spaces, the adaptive reuse of the B and B1 grain elevators on the northern part of the site, and the continued operation of the Farine Five Roses flour mill—are already established. My research does not question the broader development plan. Instead, it concentrates on how the residential buildings at Pointe-du-Moulin and the existing operating flour mill can be more effectively integrated into the new urban landscape while maintaining its industrial character.

01 Architectural & Urban Approach :

- *Ensure long-term operation of the mill*
- *Establish a public and common identity for the site*
- *Emphasize the monumentality and industrial character of the site*
- *Revitalisation of the old existing conveyors*
- *Ensure the preservation of Annexe 5 & Silo Rozon, preventing their demolition*
- *Activate vertical circulation*
- *Create a unified architectural language for ease of navigation*
- *Achieve a high and smart density to solve housing crisis*
- *Introduce a diverse range of public activities*
- *Create more space for Soft Mobility*
- *Reduce the traffic congestion of Mill Street*
- *Design buildings that preserve the visibility of the Flour Mill's heritage sign.*
- *Create a common architectural langaguage around the site which is inspired by the steel structure of the Marine Tower*

02 Diversity and Functionality:

- *Each building has a different function to bring variety*
- *Circulation design promotes community-oriented living*
- *Circulation points lead to common spaces*
- *Encourage physical activity with stair placement*

03 Units Design:

- *No studios and only a few one-bedroom units*
  (Avoid short-term tenants with high vacancy rates)
- *Create unit's layout with generous space to suit family and long term adaptability*
- *Design for long-term residents*
- *Create a fun vertical circulation that encourages interaction with neighbors*

4.5 Vertical City Mills: Restoring Montreal's Industrial Heritage

The Vertical City Mills is an alternative plan for the urban redevelopment of Pointe-du-Moulin. This plan addresses the lack of identity in the city's urban redevelopment and aims to create a "smarter" density plan. This proposal is designed around the operating flour mill, its abandoned silos and its willingness to preserve its "machine" character. The plan will include paths that activate the east and west waterfronts with multipurpose pedestrian routes, promoting soft mobility and enhancing green spaces. Moreover, the spectacular conveyors will be repurposed into a walkable library and art exhibition open to everyone.

The design of the northern part of the site, where Elevator B and B1 stands, will remain unchanged from the Bridge Bonaventure proposal. However, Annexe 5 which is part of Silo 5 will be preserved in the Vertical City Mills Proposal The southern part of the site, where the flour mill is located, will be redeveloped to create a public identity centred around the mill. At the same time, the space required for the mill's continued operation will be respected. The overall design of this urban plan and its buildings has been strongly influenced by the history of the site and its industrial elements.

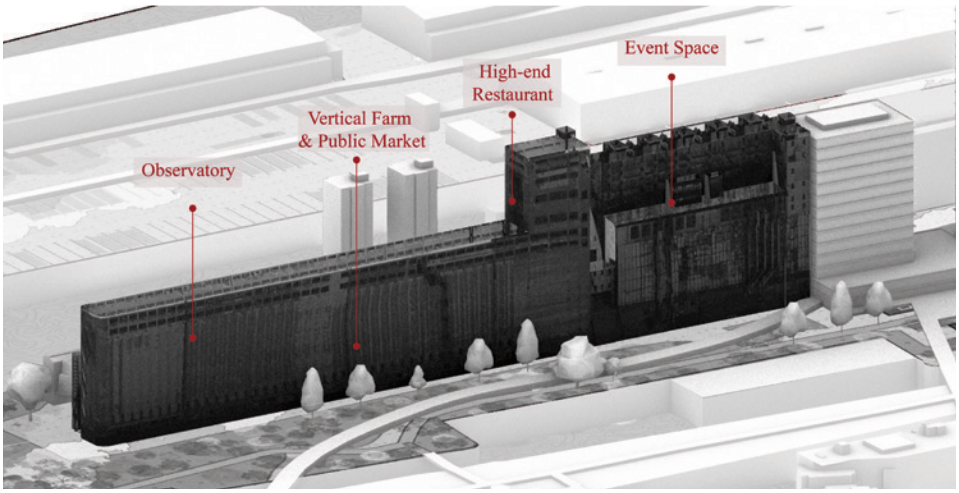


Fig. 4.20 : Vertical City Mill Programs Plan of Elevators B & B1 to remain unchanged from Bridge Bonaventure Proposal

Drawing by Author



Fig. 4.21 : *The Vertical City Mills Visitor Centers & Annexe 5, the red elements represents the steel used in the conveyors.*

Render by Author

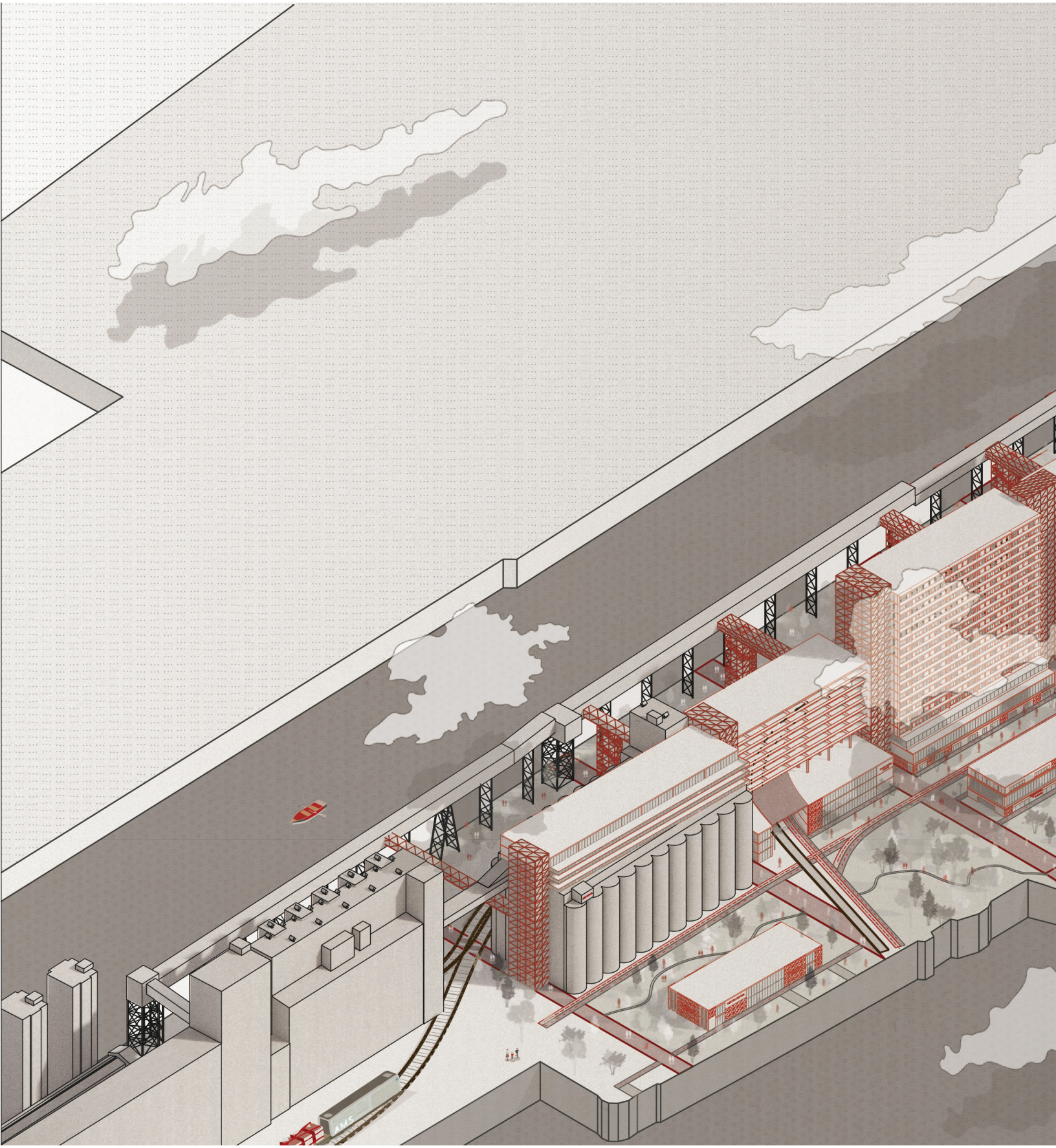


Fig. 4.22 : *North West Isometric of the Vertical City Mills Urbam Proposal*

Drawing by Author

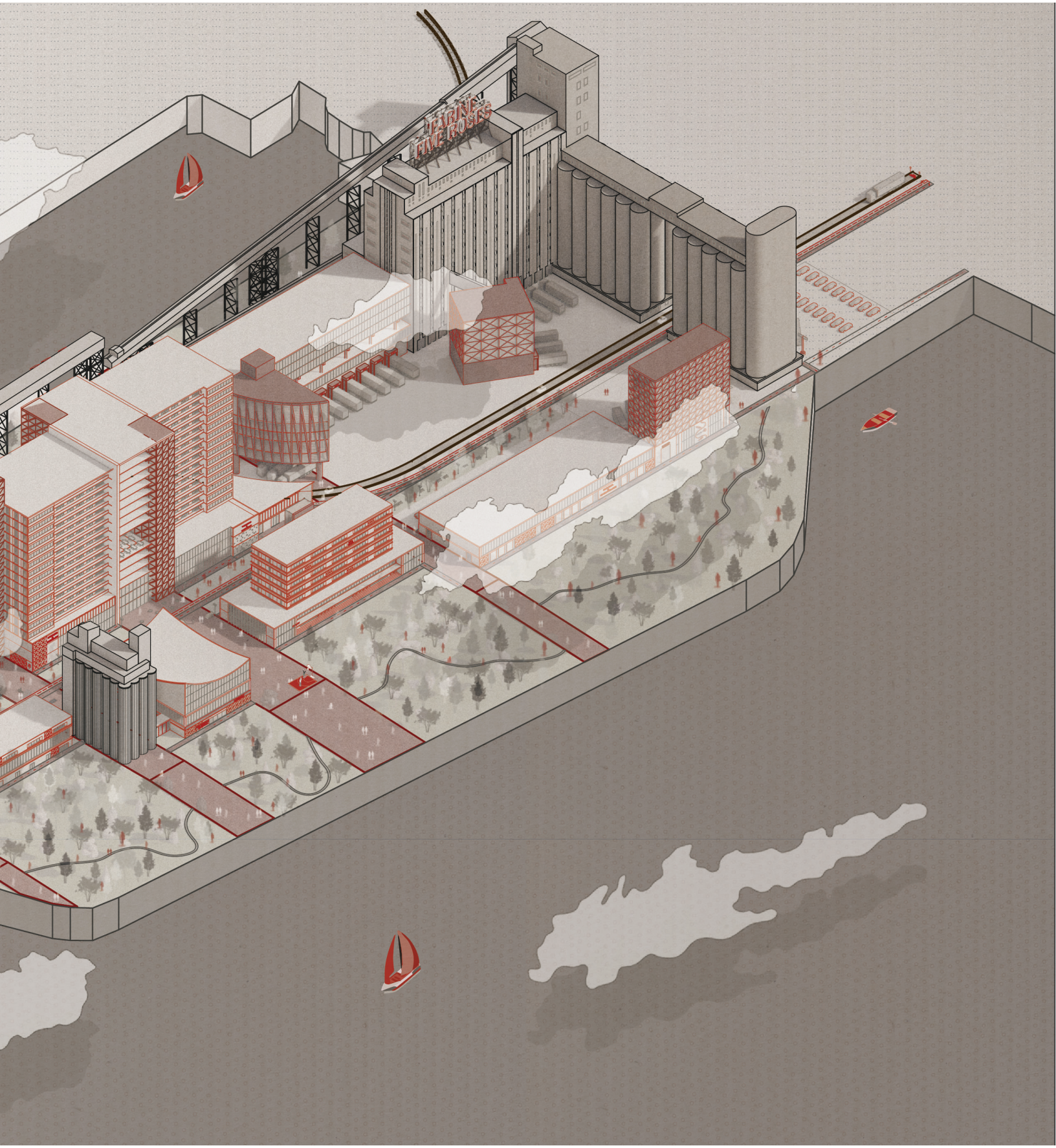

FARINE
FIVE ROSES



Fig. 4.23 : ***Image of the Conveyors existing condition in Pointe-du-Moulin***

Drawing by Author

4.6 Main Design Concept Generation

Through a series of drawings, we will analyze the site's strengths and each step made to create this urban redevelopment plan. These diagrams will illustrate how the new urban plan was conceived and developed, showcasing the configuration and layout of each building and the rationale behind these choices.

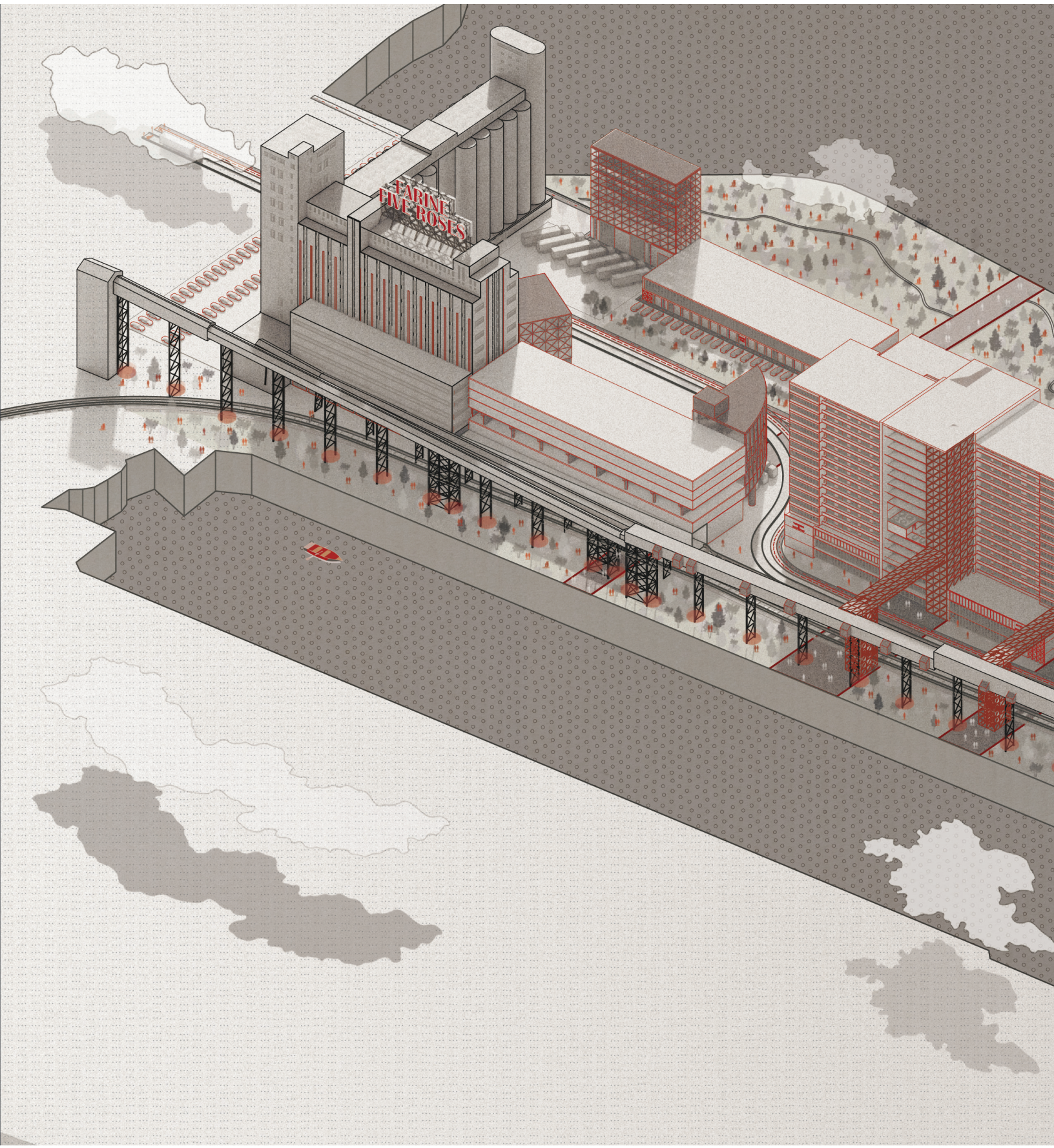
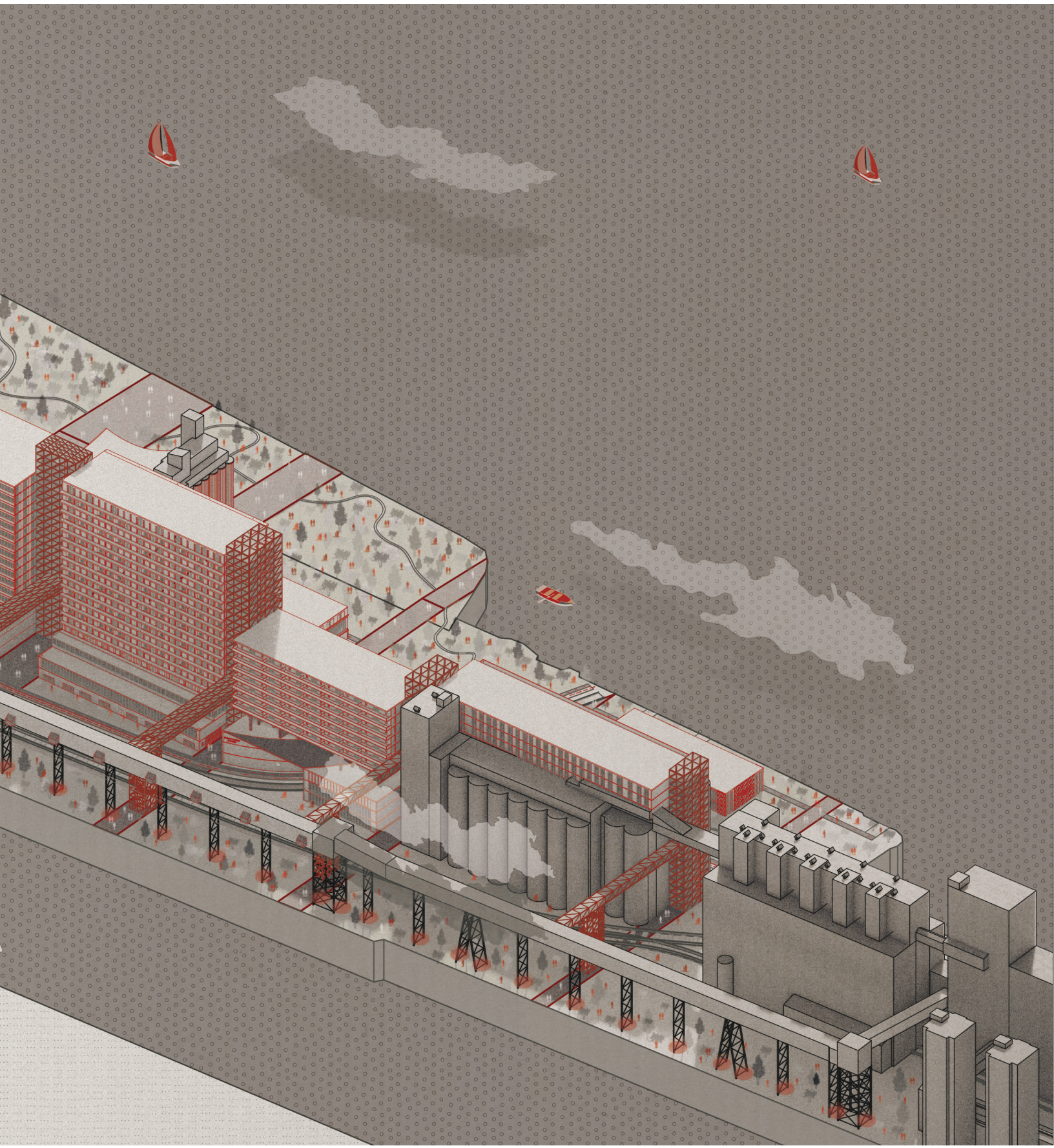


Fig. 4.24 : *North East Isometric of the Vertical City Mills Urbam Proposal*

Drawing by Author



Gateway & Linearity

The first observation of the site is that the flour mill serves as the gateway to the pier. The pier's main road passes between the silos, creating a striking entrance that gives the feeling of entering a unique and special place.

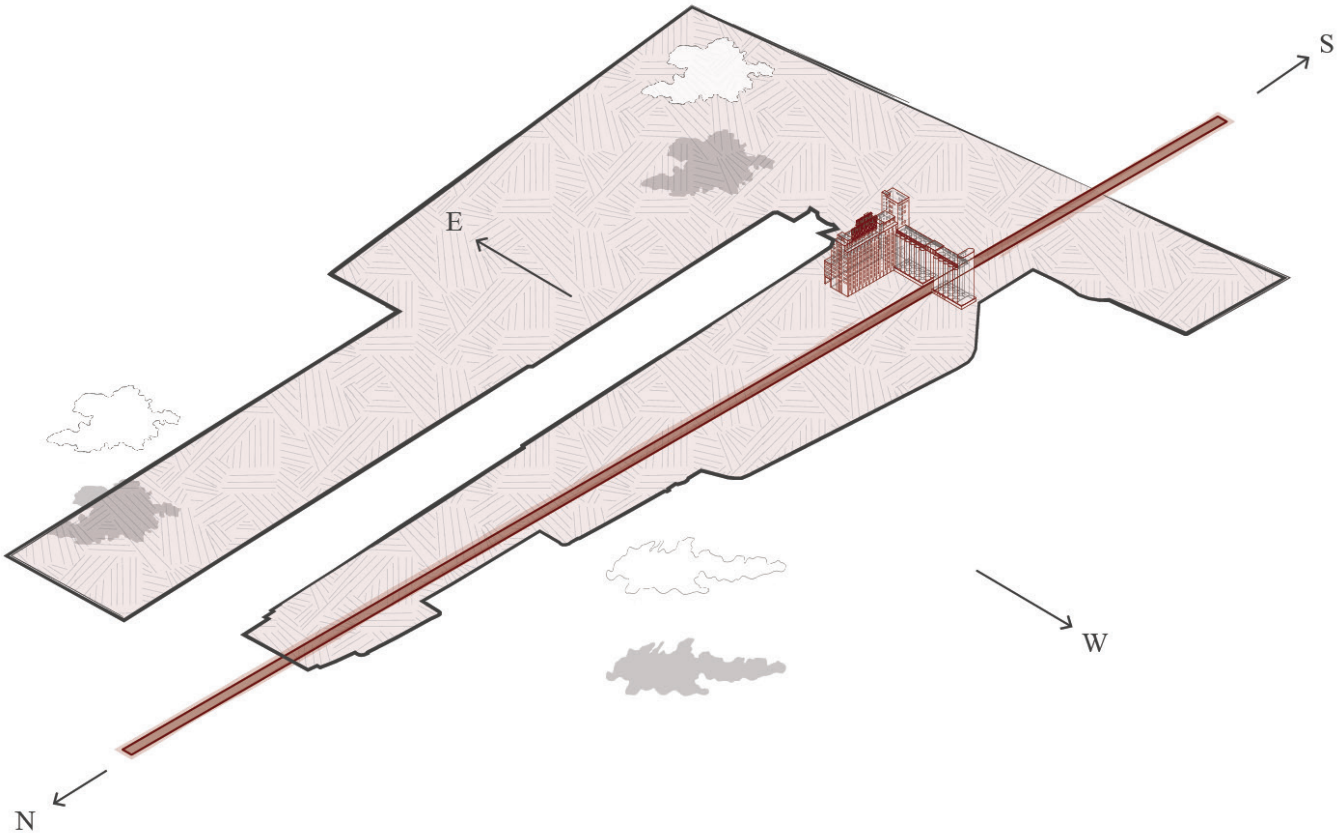


Fig. 4.25 : *The Grain Elevator of the Flour Mill forms a striking gateway, establishing a strong potential for a linear corridor.*

Drawing by Author

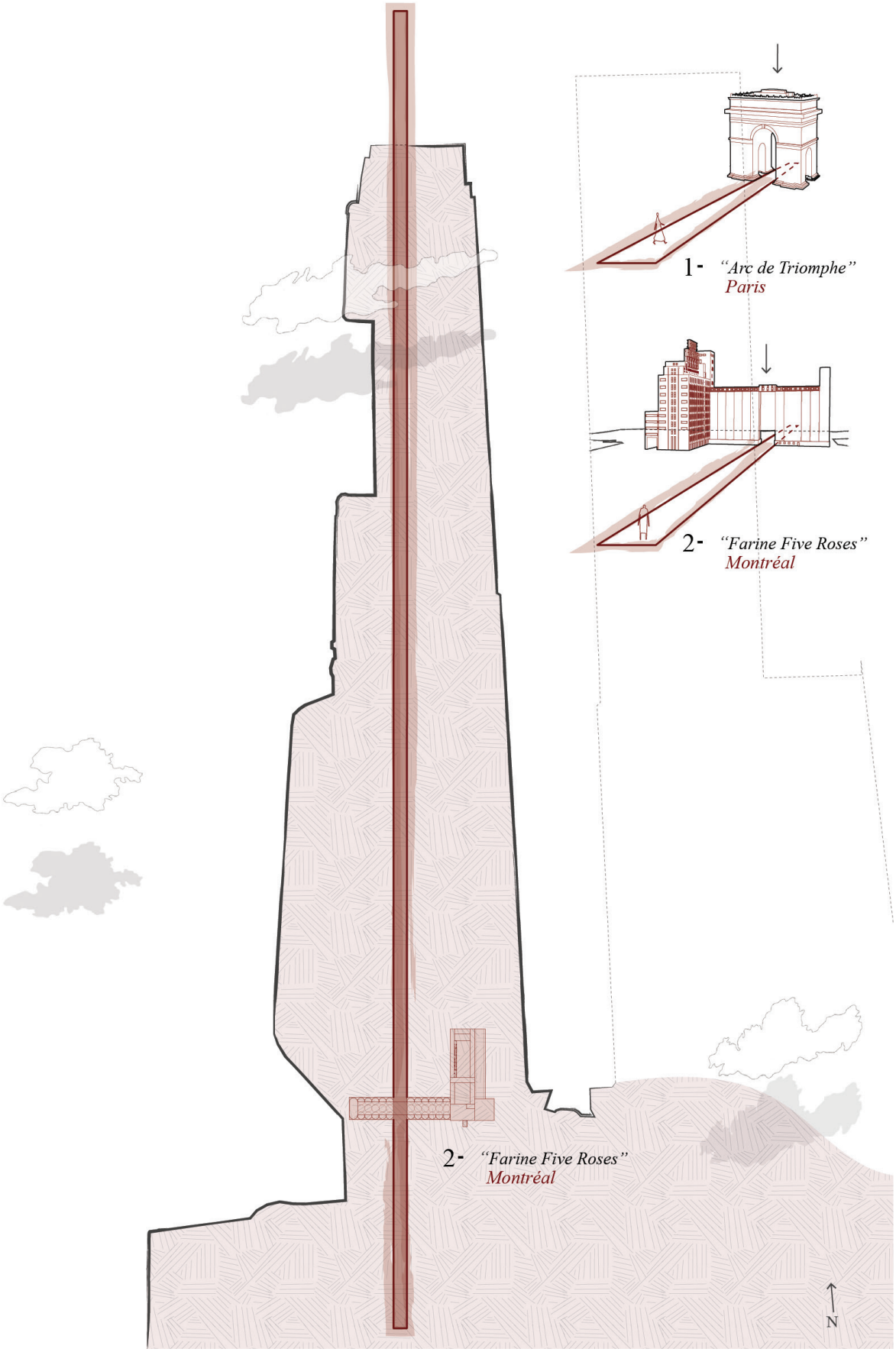


Fig. 4.26 : ***Plan View highlighting the main axis line for the Vertical City Mills redevelopment plan.***

Drawing by Author

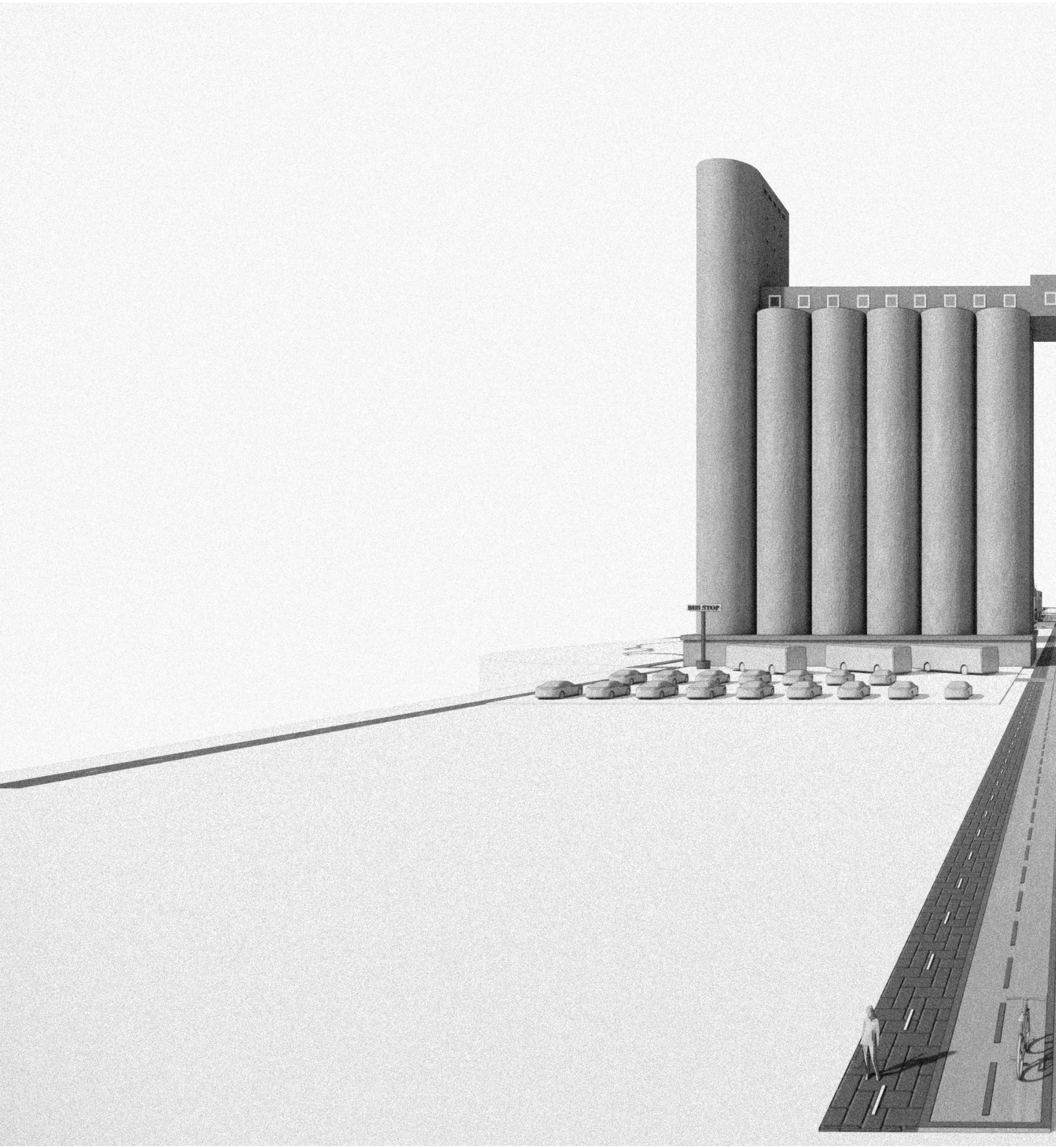


Fig. 4.27 : *View of the Gateway created by the Flour Mill and the creation of new circulaion roads.*

Conceptual Render by Author



** This renders does not show the Bonaventure Expressway that should be above the truck*

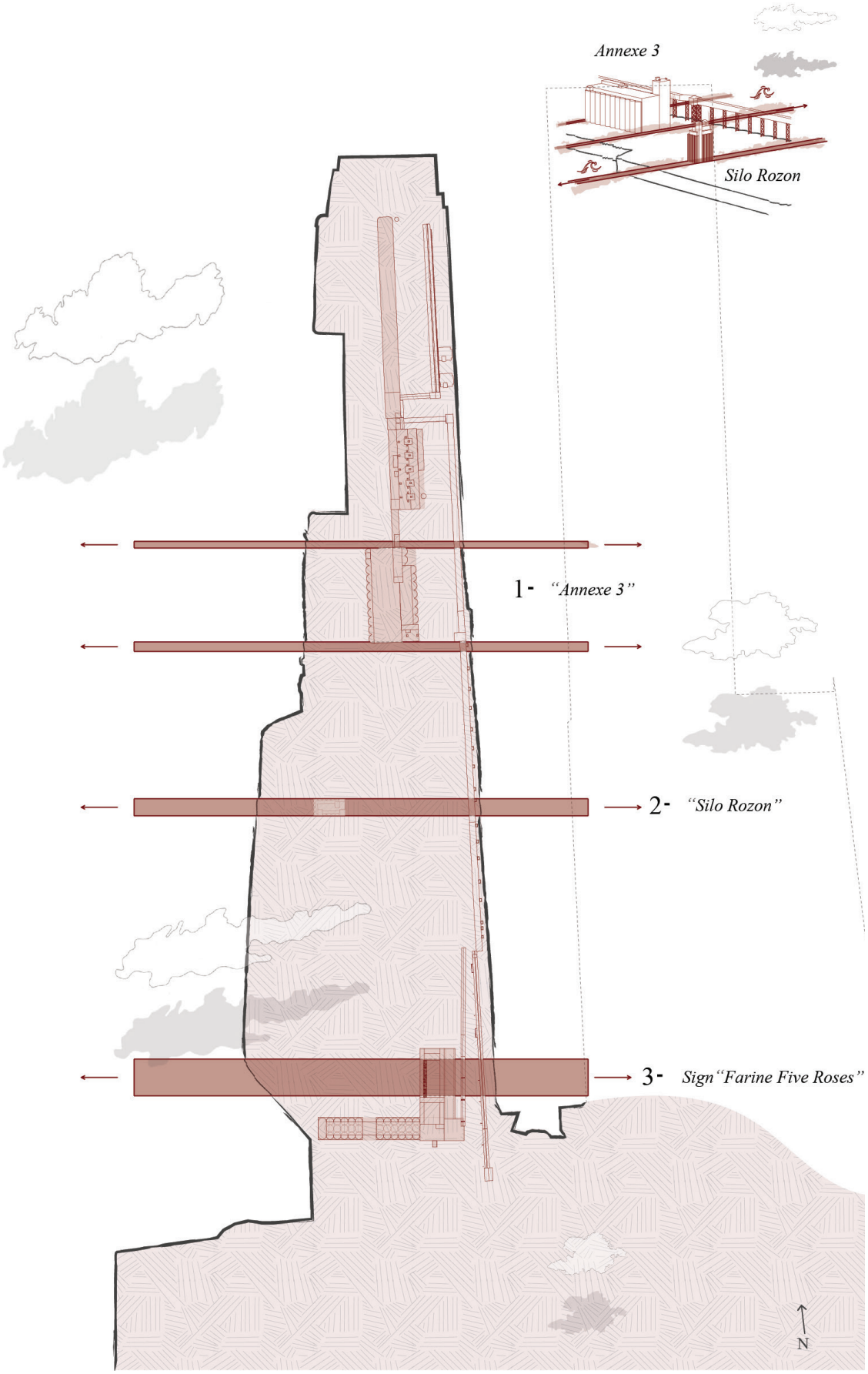


Fig. 4.28 : ***Urban Plan Strategies used to highlights its Industrial Elements***

Drawing by Author

Industrial Landmarks Elements

The urban plan had to highlight the site's precious industrial elements while connecting the East to the West side waterfront.

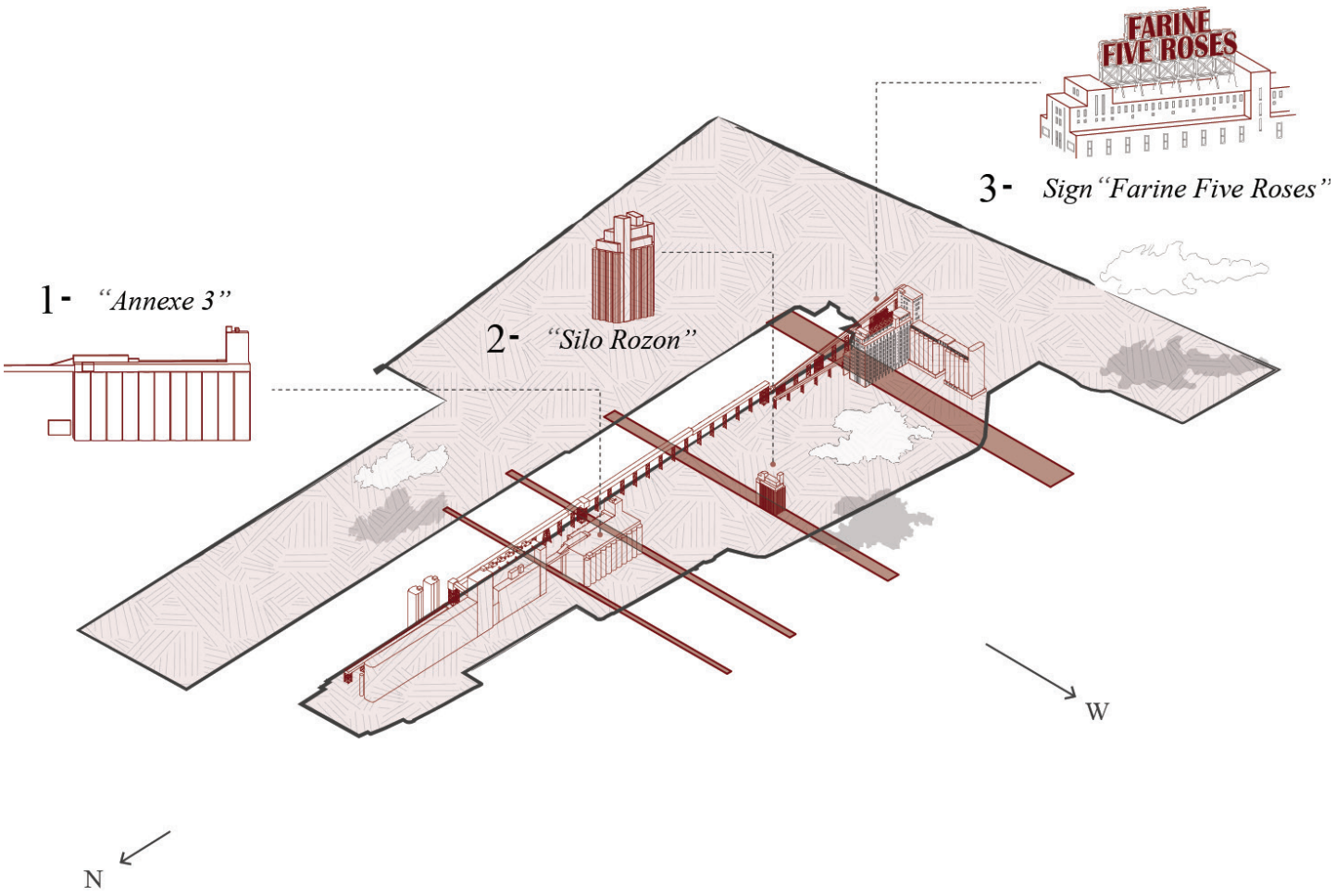


Fig. 4.29 : *The Vertical City Mills plan includes Annexe 5 and Silo Rozon, unlike Bridge Bonaventure's.*

Drawing by Author

Determination of Buildings' Primary Function

Once the primary axes were established, building blocks could be designed. This grid will connect and link the pier's southern, northern, eastern, and western sides. The east side, facing Habitat 67, will feature taller buildings to meet the demand for housing units, while the west side will have lower structures to create a more human-scale design and avoid casting shadows over the park during the day.

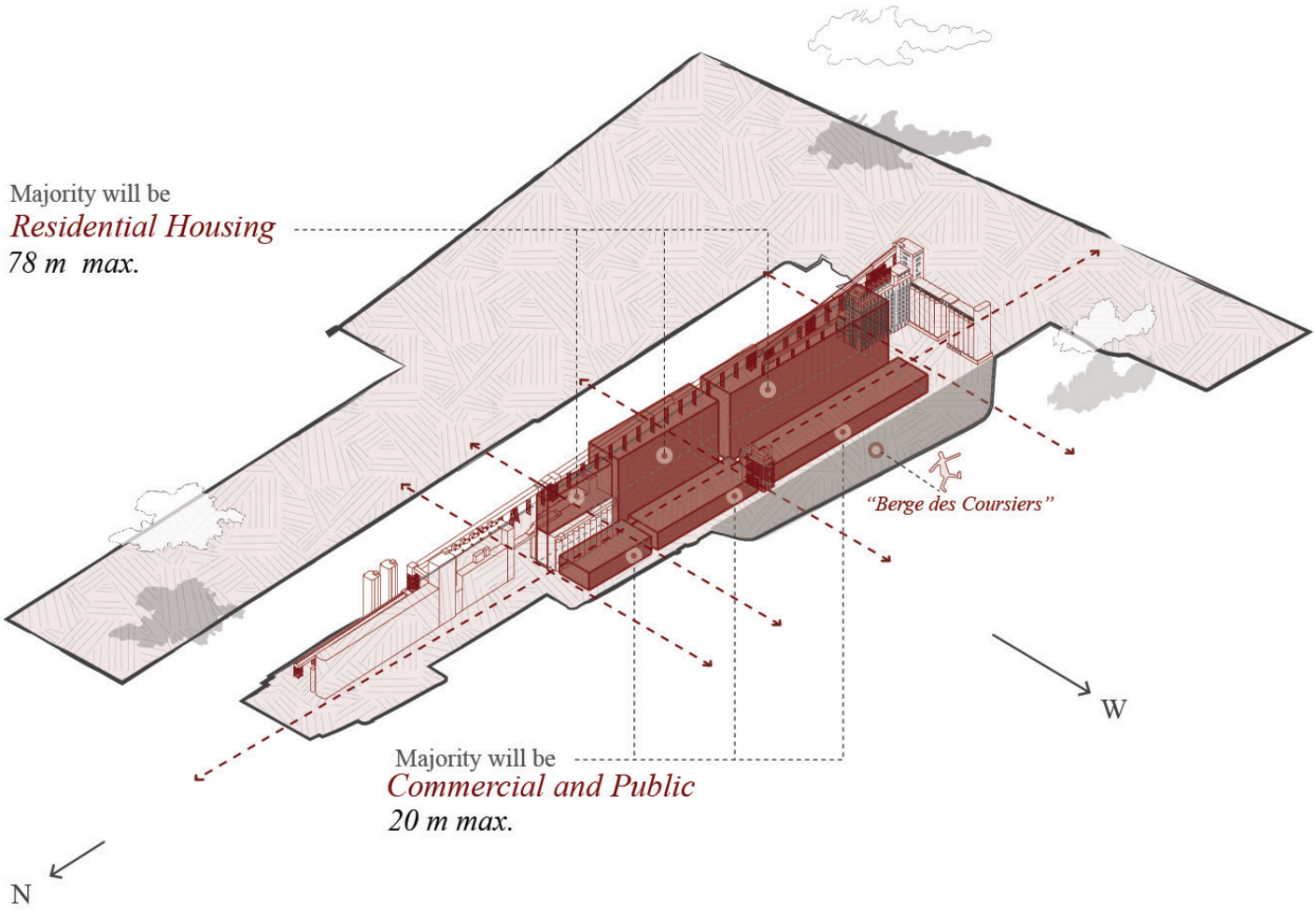


Fig. 4.30 : ***Vertical City Mills Height Principles***

Drawing by Author

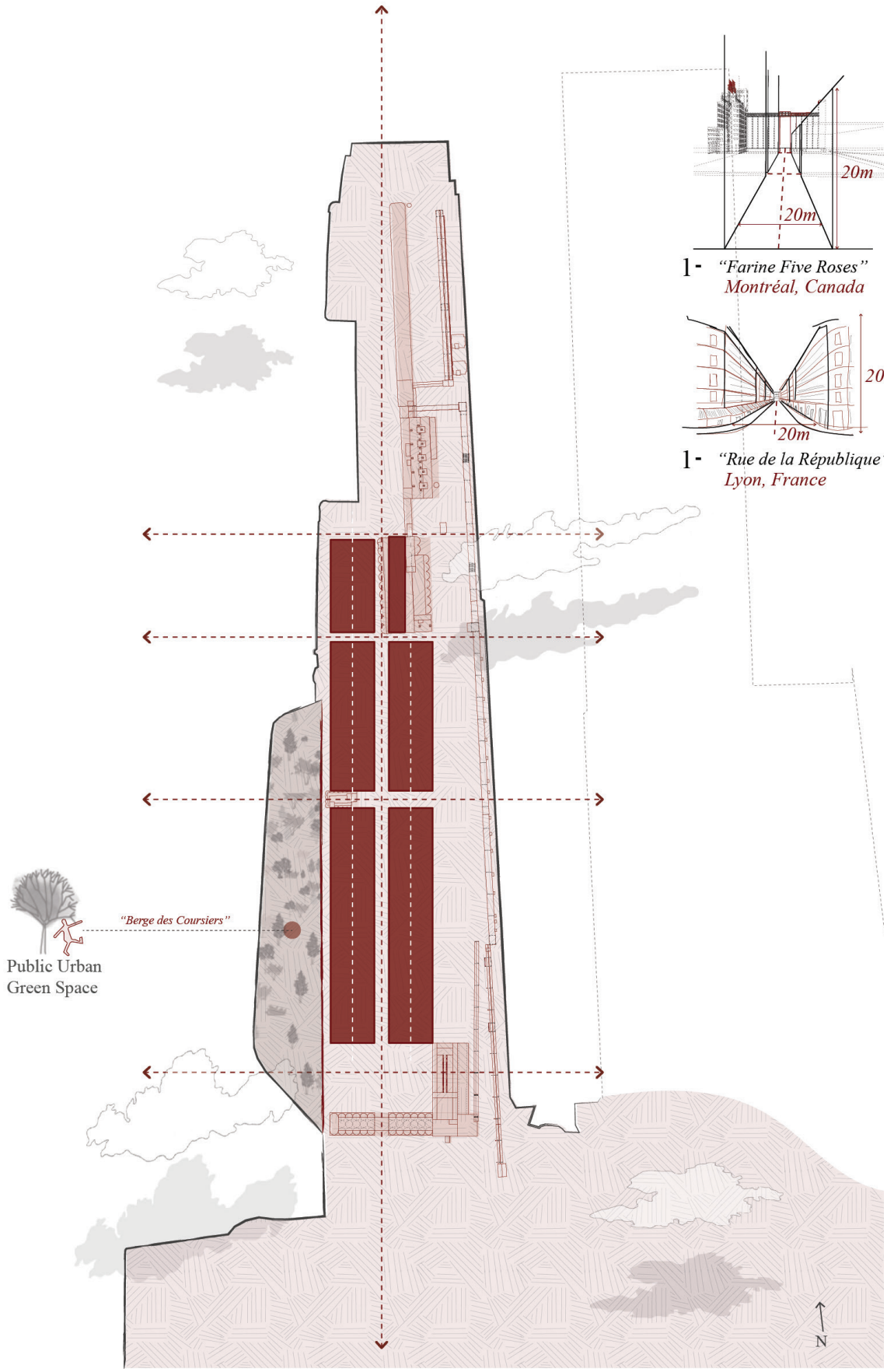


Fig. 4.31 : ***Initial concept for Grid and Building Block formation.***

Drawing by Author

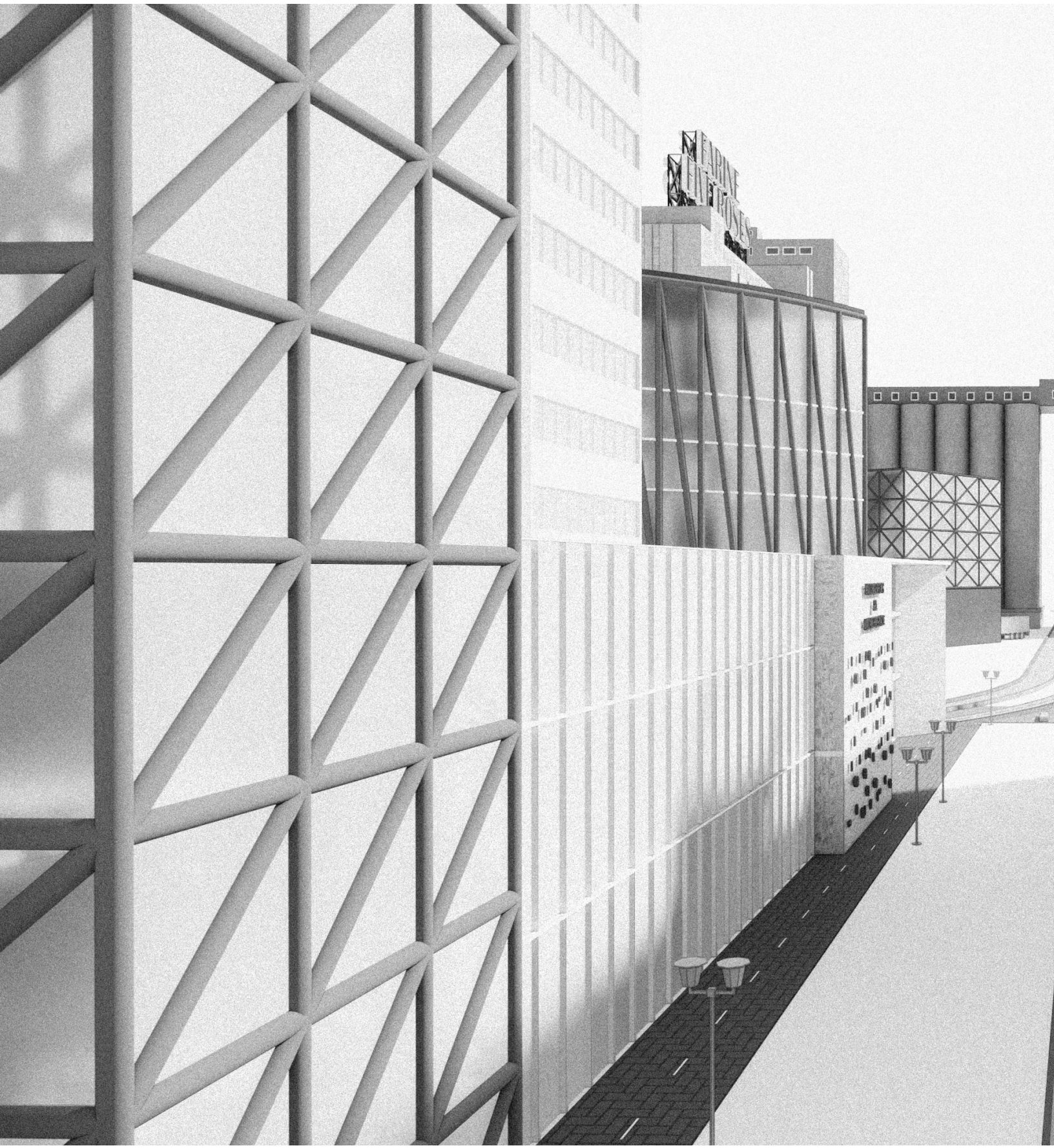
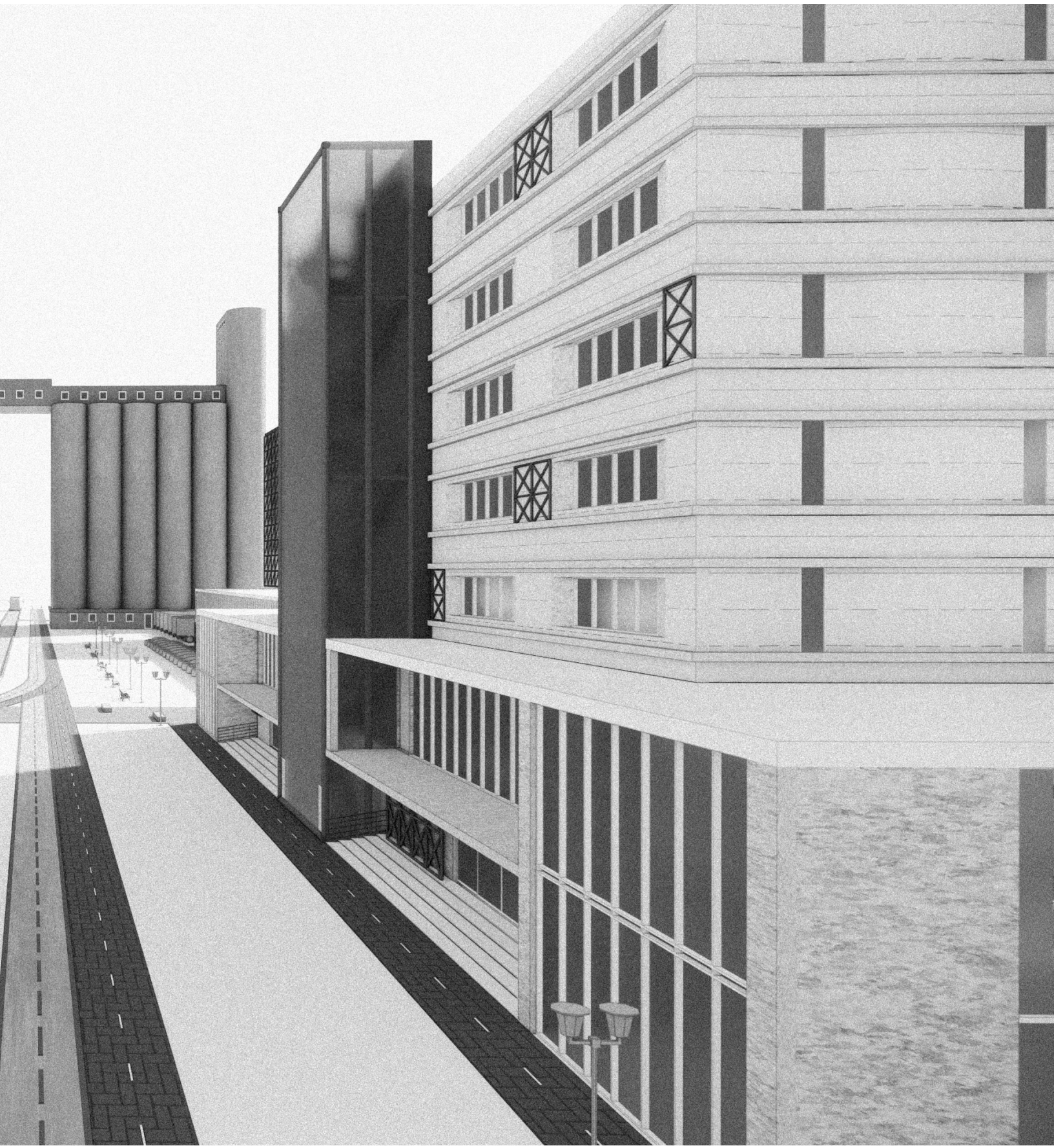


Fig. 4.32 : ***Render depicting the initial development phase.***

Conceptual Render by Author

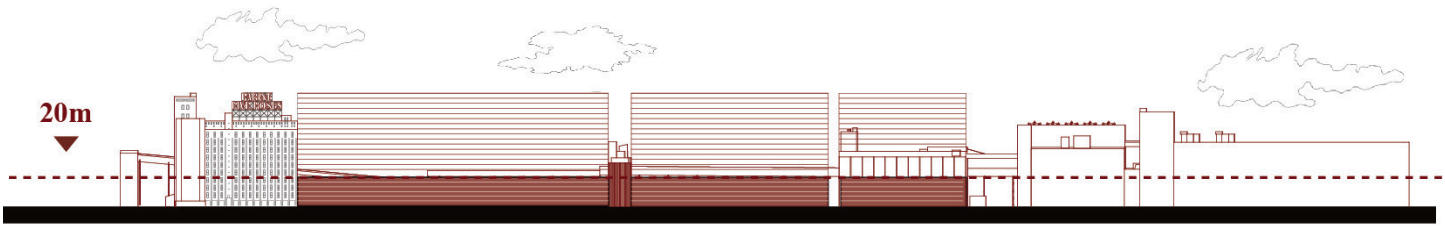


Height Strategy for East and West Sides

The elevation shows that the maximum potential building height could reach the top of the silo sign. However, when designing building volumes, the most appropriate height for the tallest structure is 60.5 meters, leaving sufficient space for the Farine Five Roses sign to remain visible in the sky. The west side is intended for public functions such as museums, libraries, daycare centers and food markets. The maximum height of the West side is limited to 20 meters to prioritize a human scale similar to that of European pedestrian streets.



East Elevation
Height Maximum



West Elevation
Height Maximum

Fig. 4.33 : ***Concept Principles for the Block Height (Note this is not the final Height of the buildings)***

Drawing by Author

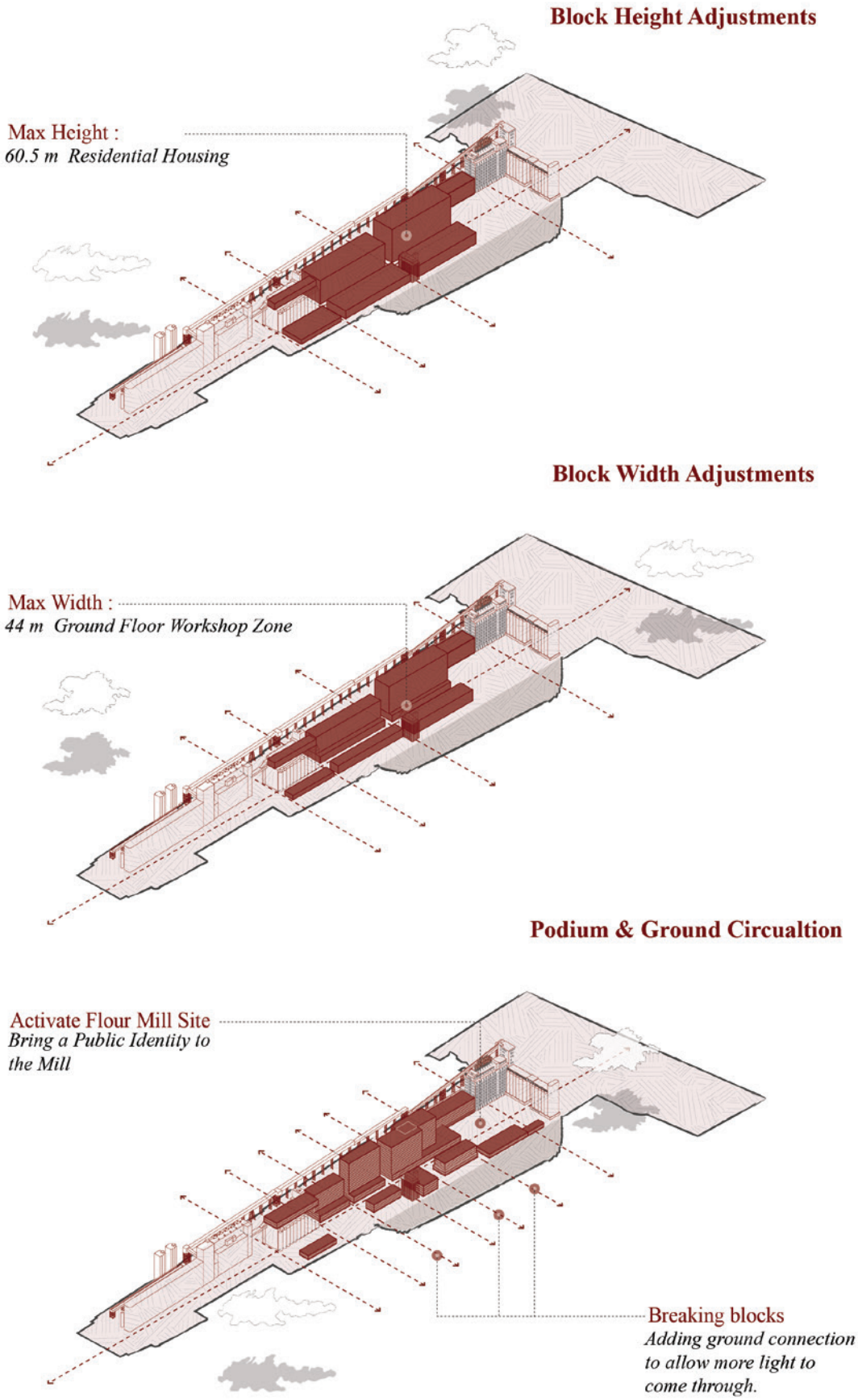


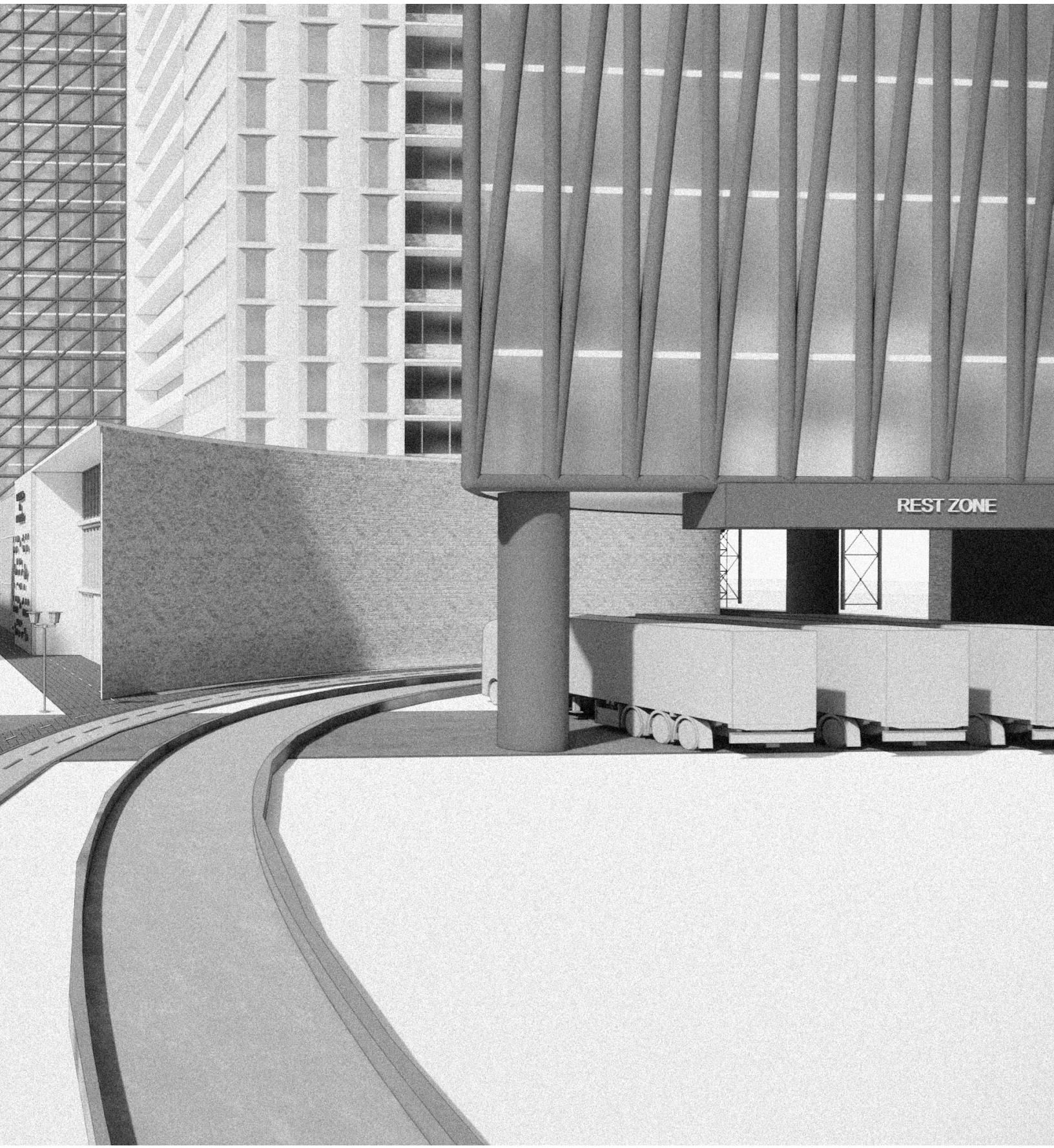
Fig. 4.34 : Grid & Building Form Generation

Drawing by Author



Fig. 4.35 : ***Render depicting the initial development phase with the rerouting of Mill street to the East Side of the Site.***

Conceptual Render by Author


REST ZONE

4.7 Circulation and Soft Mobility

Circulation and mobility are key drivers of this urban proposal. The plan was developed by rethinking public movement on the ground and vertical access to activate the site and its elements.

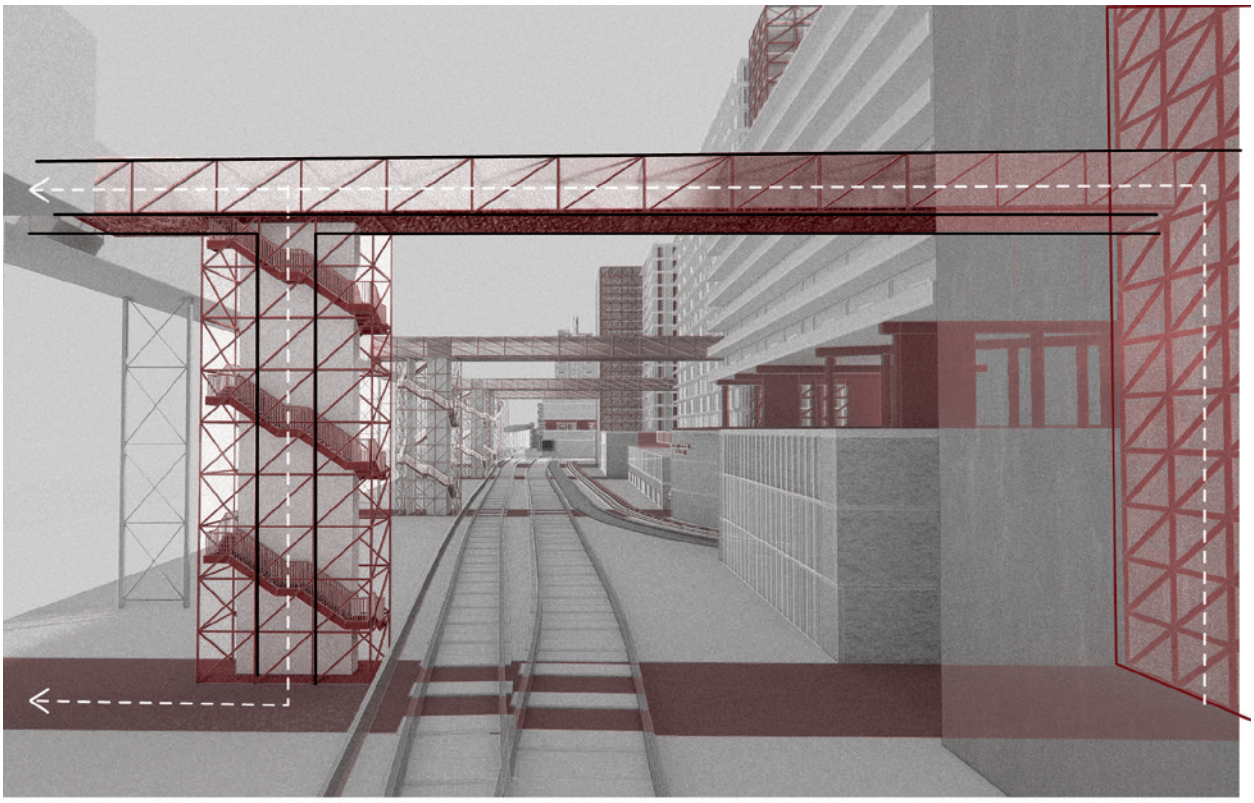


Fig. 4.36 : *Circulation route connecting the West and East parts of the site.*

Drawing by Author

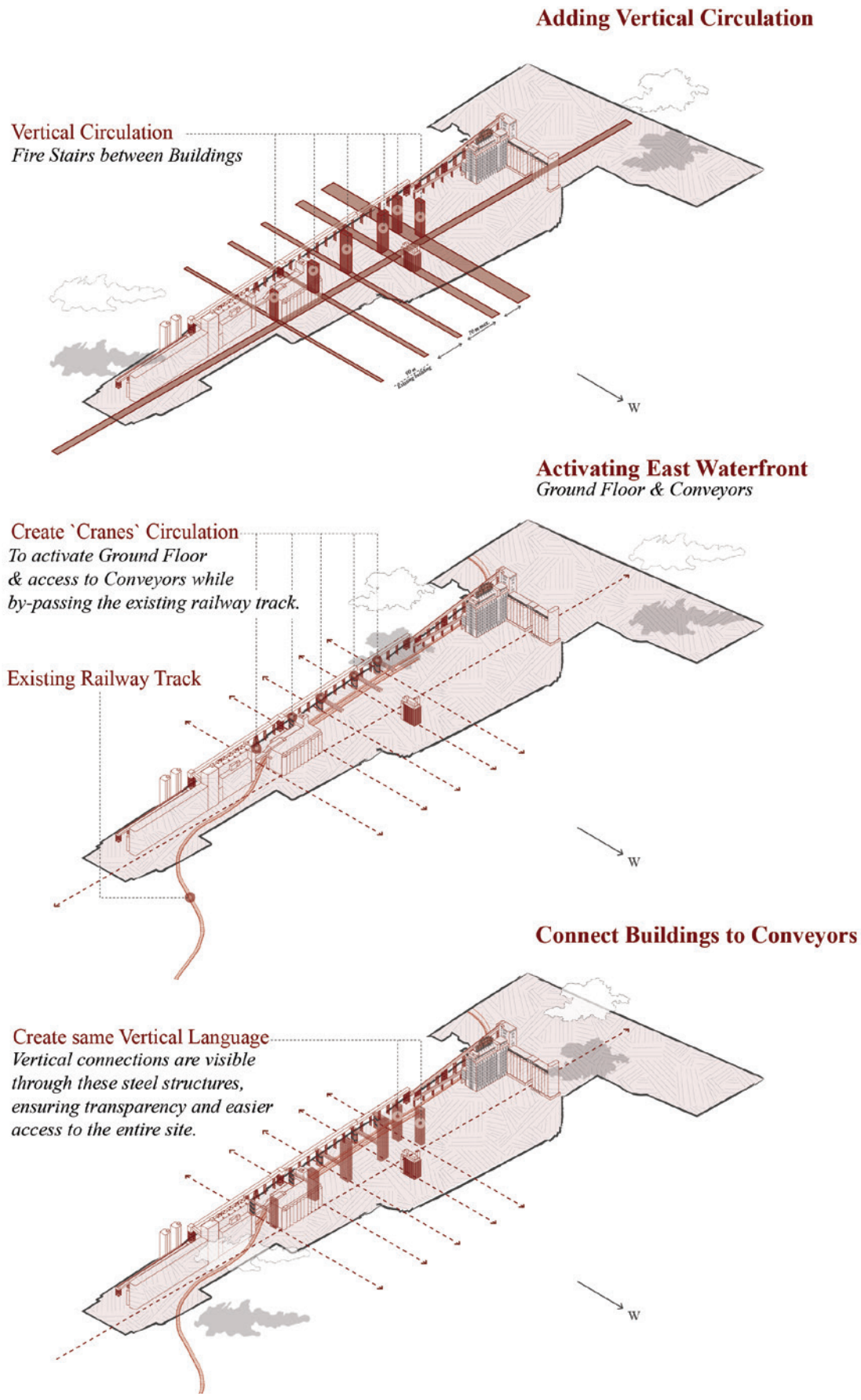


Fig. 4.37 : *Ground Floor Activation Startegies*

Drawing by Author



Fig. 4.38 : *The "Cranes" Circulation Structures connecting the west and east parts of the site through the residential buildings entrance*

Drawing by Author



The circulation strategy aligns with the guidelines outlined in “The City Vision: Imagining the Montreal of 2050” handbook, which emphasizes the goal of prioritizing soft mobility:

“Soft mobility is mobility on a human scale. Whether it’s to transport a package, for sport, to take the kids to school, go to work, buy groceries or just go for a walk, travel should be rich in opportunities and low in negative impacts (insecurity, space consumption, pollution, GHGs, etc.). Promoting soft mobility means recognizing the primacy of pedestrians, making walking and cycling facilities basic components of the street, and choosing carbon-reduced motorized modes of transport for people and goods that are adapted to neighbourhoods. By increasing the space for people and vehicles with low negative impact on the environment, and then reducing the speeds, mass and size of the modes of transport, we are making mobility softer, more compatible with urban life.” (Ville de Montréal 2022, 47)

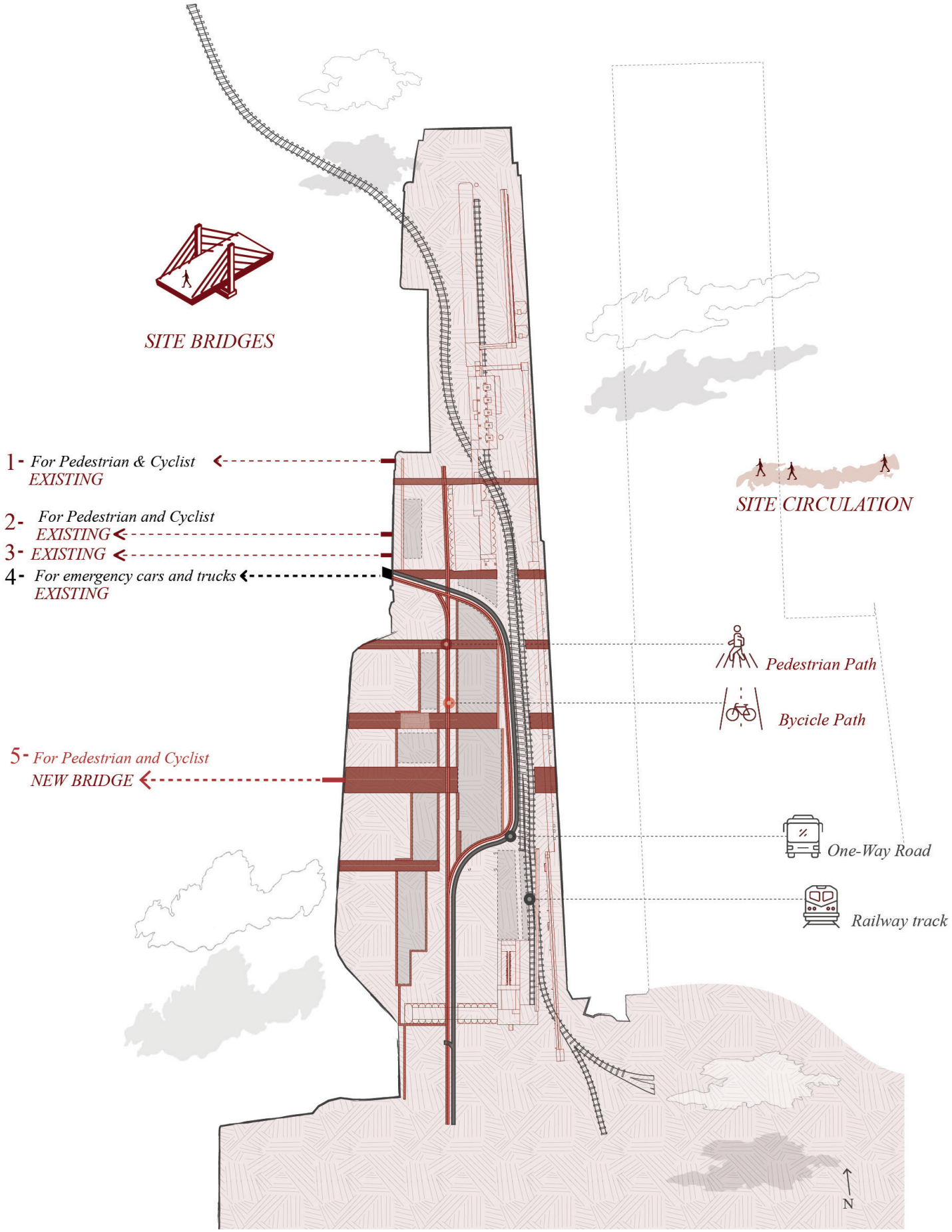
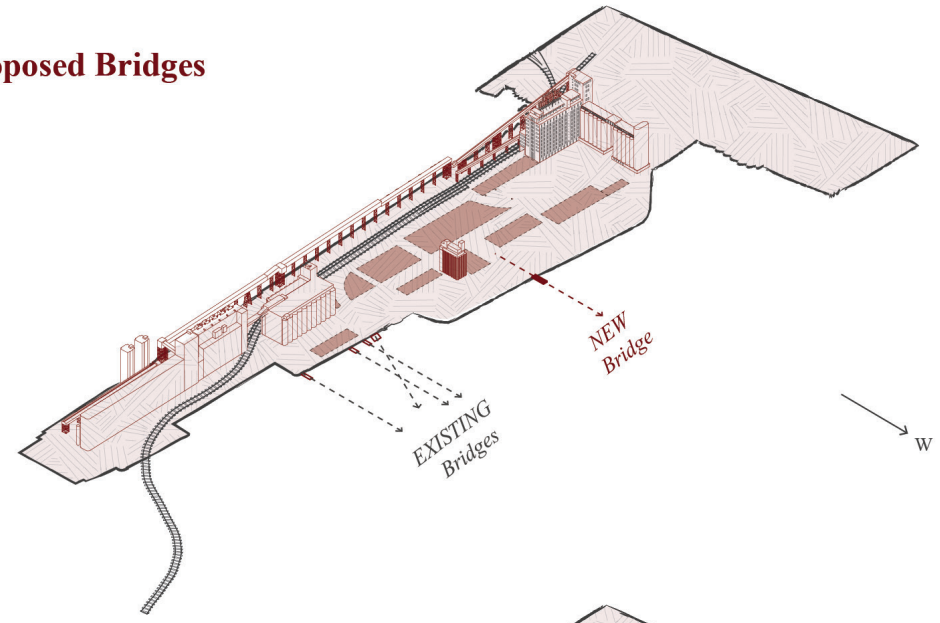


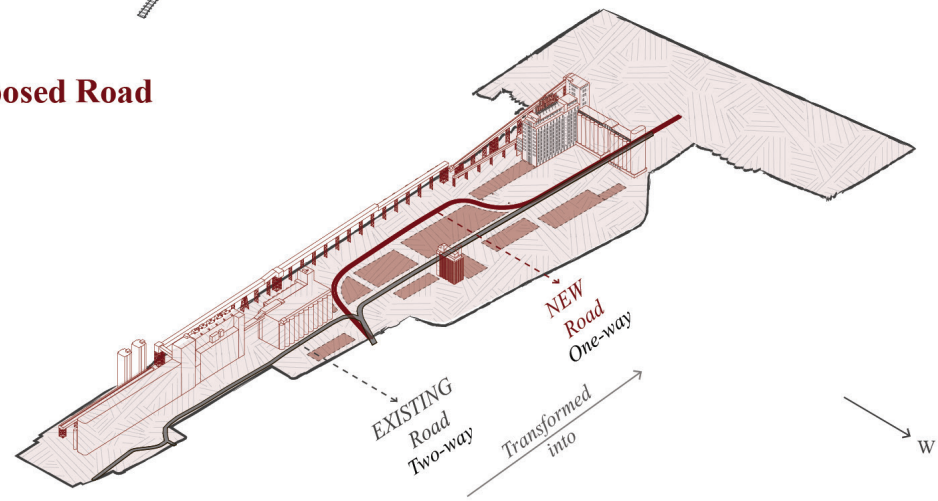
Fig. 4.39 : ***Plan View of Circulation and Soft Mobility Routes***

Drawing by Author

Existing and Proposed Bridges



Existing vs. Proposed Road



Existing vs. Proposed Pedestrian & Bycicle Paths

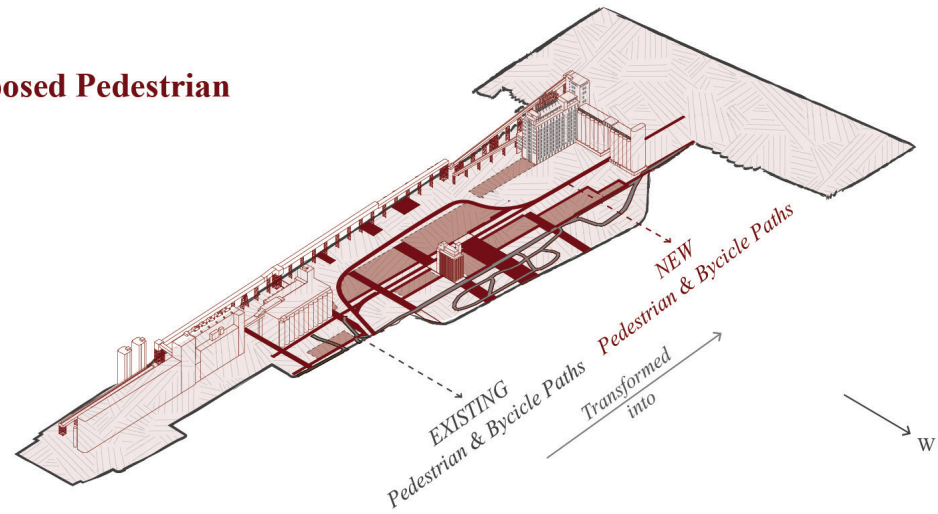


Fig. 4.40 : ***Isometric View of Pointe-du-Moulin Access Points***

Drawing by Author

Furthermore, the handbook underscores that even with a projected reduction in car usage by 2036, more is needed to meet the city's Greenhouse Gas goals. Therefore, more decisive and radical measures are necessary for new urban redevelopment to reduce the reliance on individual cars. This is why Vertical City Mills proposed significant changes to Mill Street, including a reduction in size and a shift to one-way traffic, to create more space for soft mobility. Only authorized vehicles will be allowed to cross:

- The trucks and car staff from the Flour Mill.
- Public Transportation.
- Services cars from the city (including emergency response and waste collection).
- Delivery transportation for commercial units.
- Some residential vehicles will be allowed for residents with disability.

To make this happen, at the entrance of the street retractable bollard will be used to control vehicle access to the street. The bollard will be automatically lowered as drivers of authorized vehicles pass through.



Fig. 4.41 : ***Render depicting the initial development phase with the rerouting of Mill street behing the Flour Mill***

Drawing by Author



Exterior Circulation : Building Elevators, Crane Connection and the Conveyors



Fig. 4.42 : Conveyor Typical Plan

Drawing by Author

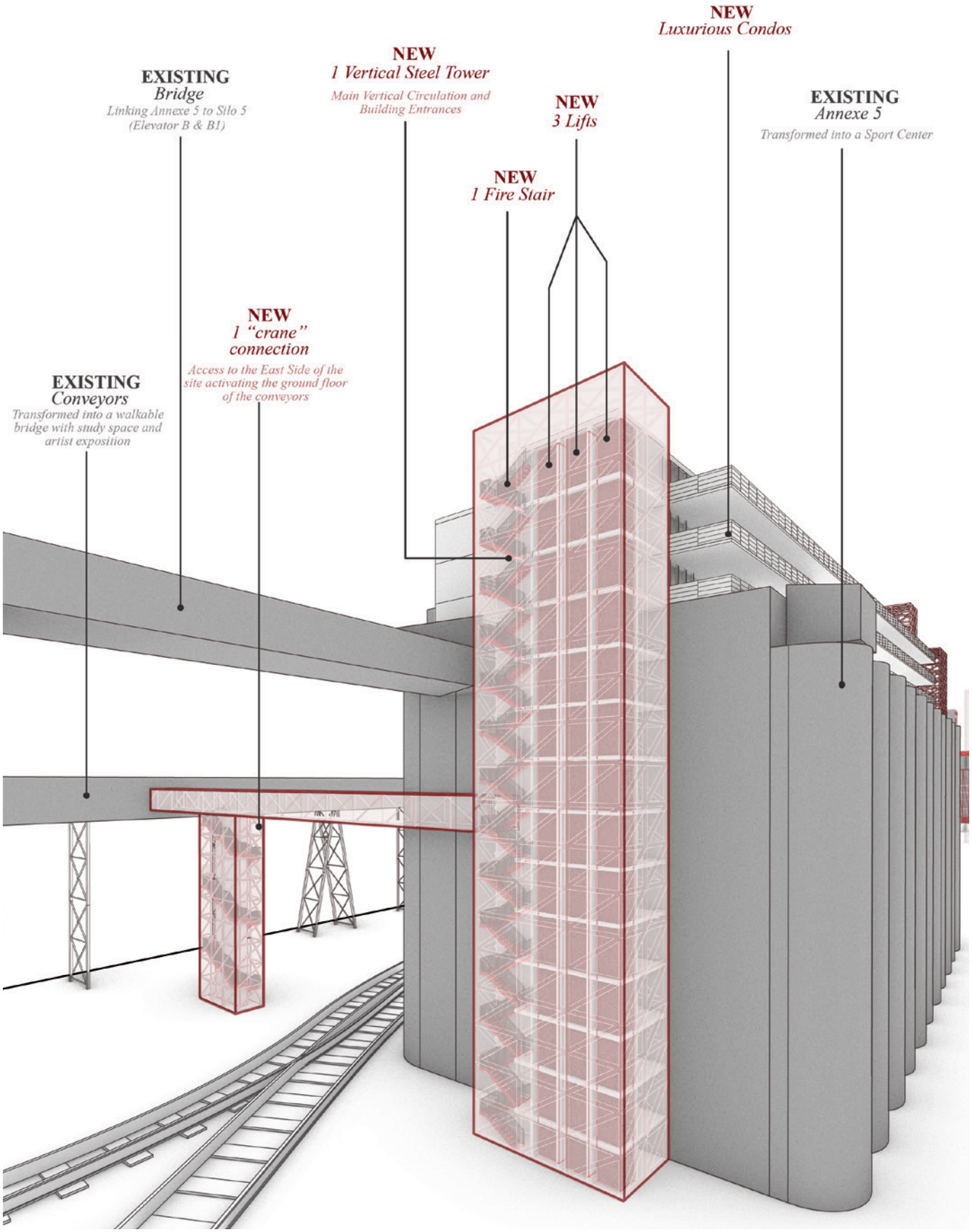


Fig. 4.43 : ***Drawing showing Annexe 5 and the Proposed Vertical Structures Elements***

Drawing by Author

East and West Section to show the movement on the ground floor

Pointe-du-Moulin also needs to address its accessibility to the public transit system as it currently has no access to public transit. Bus stop will be added to the site to activate public transportation and will be able to use the One-way Road as shown on this section.

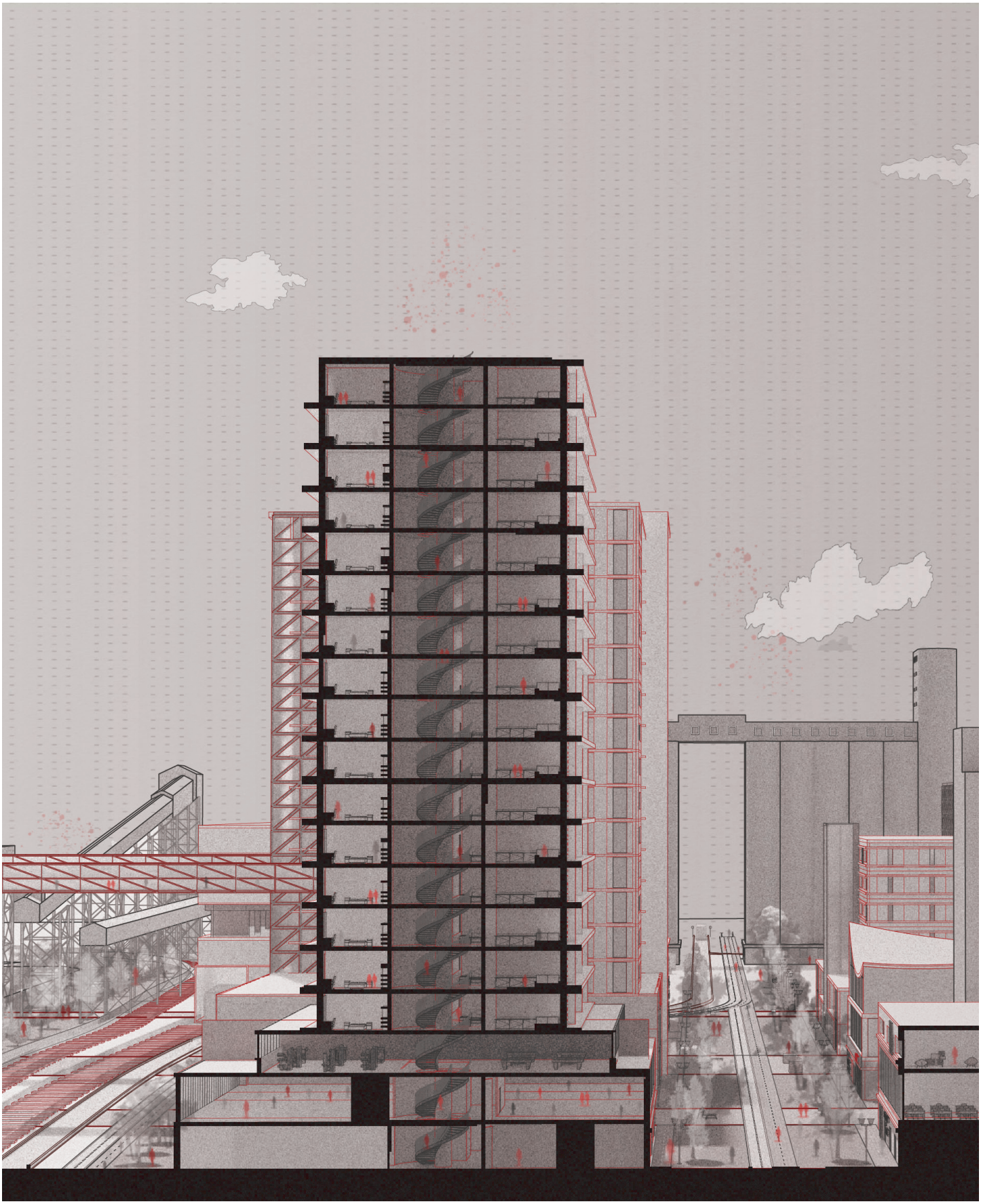


Fig. 4.44 : *Vertical City Mills East and West Section cut through the Family Housing Residential Building*

Drawing by Author

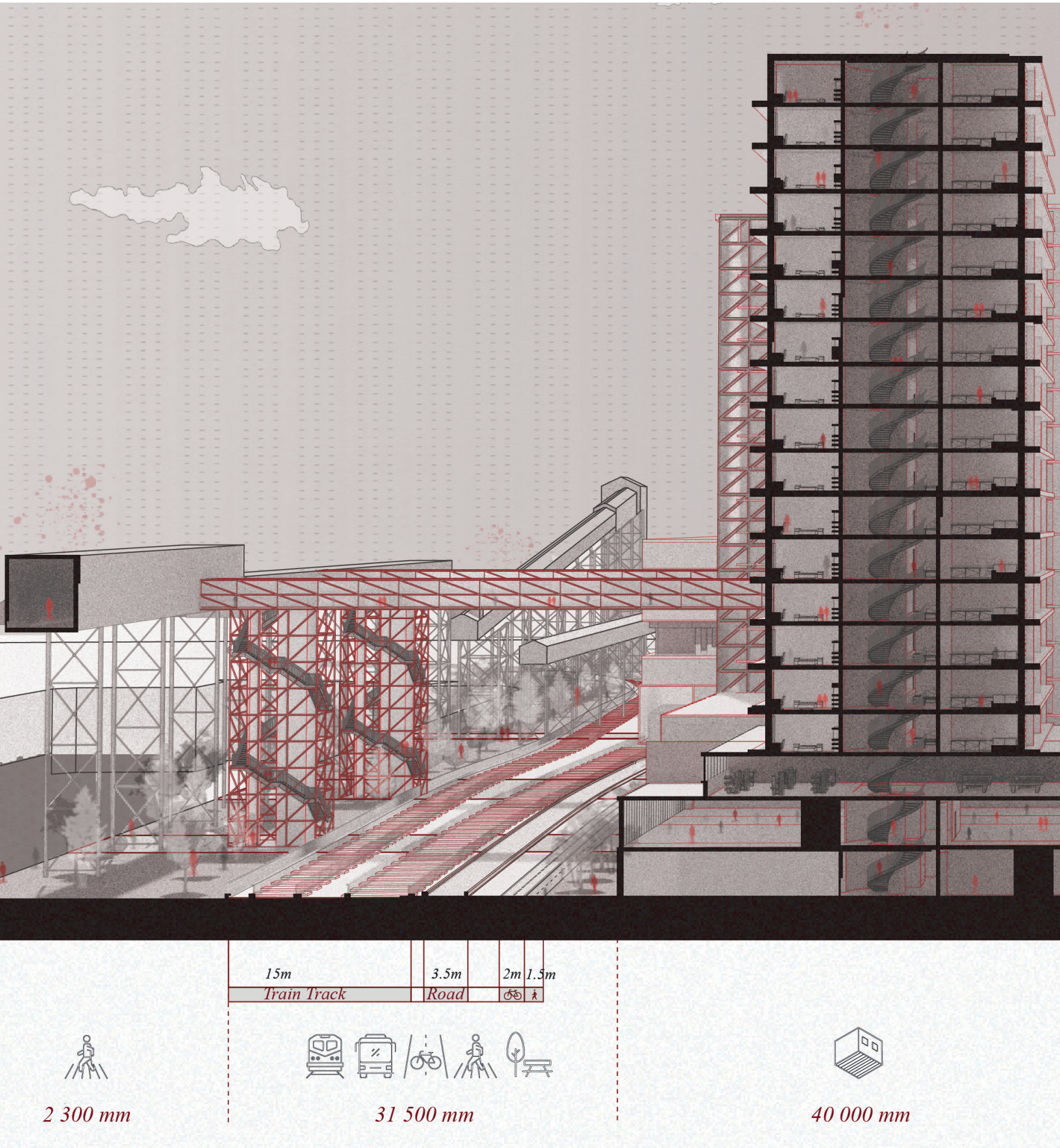
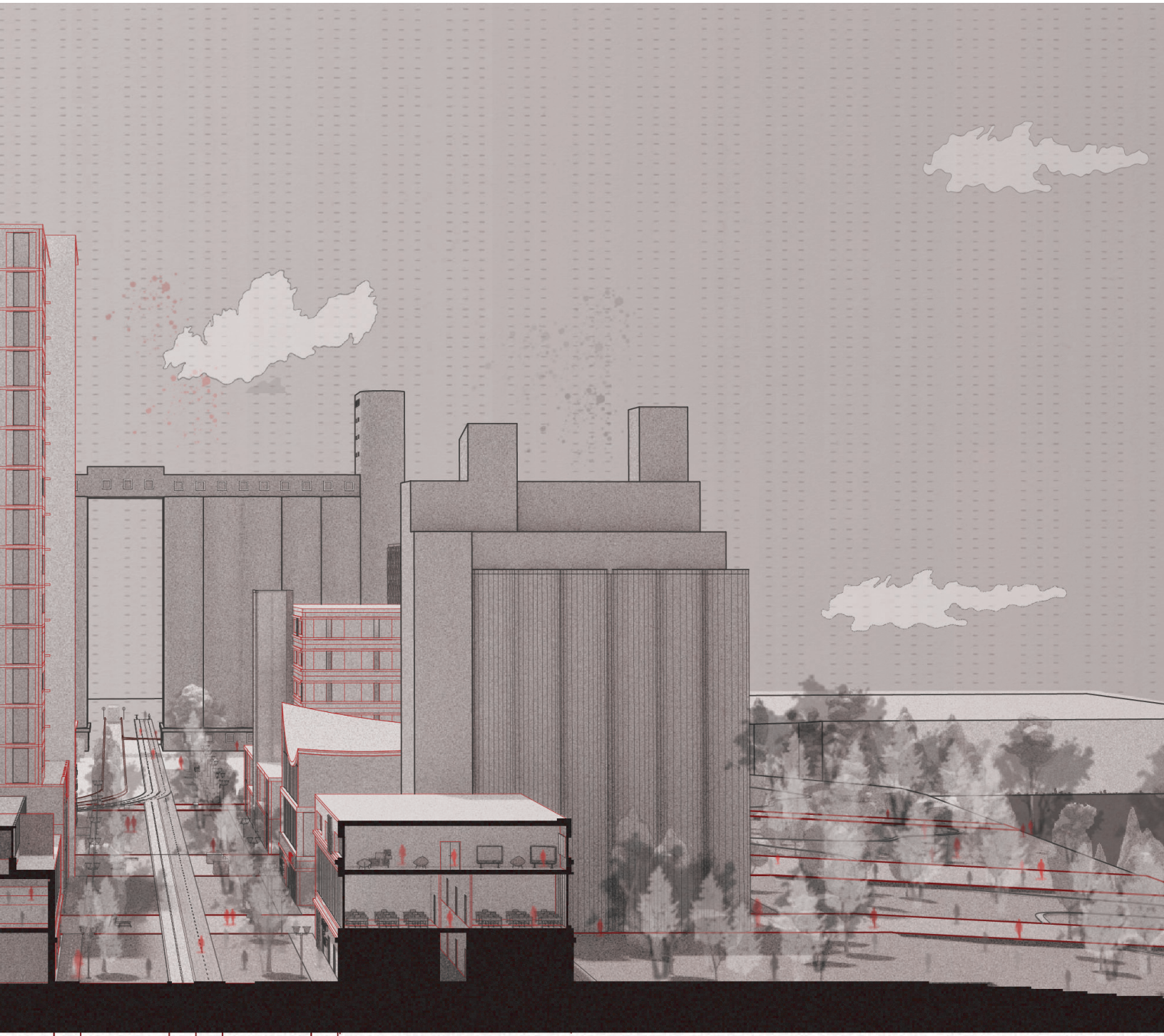
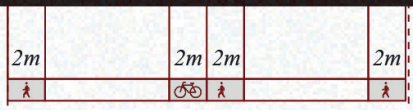


Fig. 4.45 : ***Ground floor plan layout with circulation dimensions through the East and West section cut.***

Drawing by Author







21 200 mm



17 000 mm



9 000 mm

4.8 Create a public identity for the Flour Mill

The cohabitation of function is essential in this new proposal to bring diversity to the site and ensure long-term viability. A diagram titled “Fast Forward to 2050: The Metropolis” emphasizes Montreal’s ambition to become “a laboratory for innovation in urban agriculture.” Aligned with this vision for Montreal, keeping the flour mill operational is crucial, as it also houses its own research and development center. This urban proposal plan offers to rearrange the flour mill complex to optimize space, create a public frontage, and expand the research and development center. Rerouting the road will also provide more room for truck circulation while enhancing the site’s walkability. By constructing a new building complex where the parking area once stood, the visibility and prominence of the flour mill and its iconic sign will be increased. A rooftop café and bar, accessible by stairs and lift, will offer elevated views, allowing visitors to dine and capture photos of the surrounding site.



Fig. 4.46 : *Render illustrating the rooftop café overlooking the Farine Five Roses Flour Mill.*

Render by Author

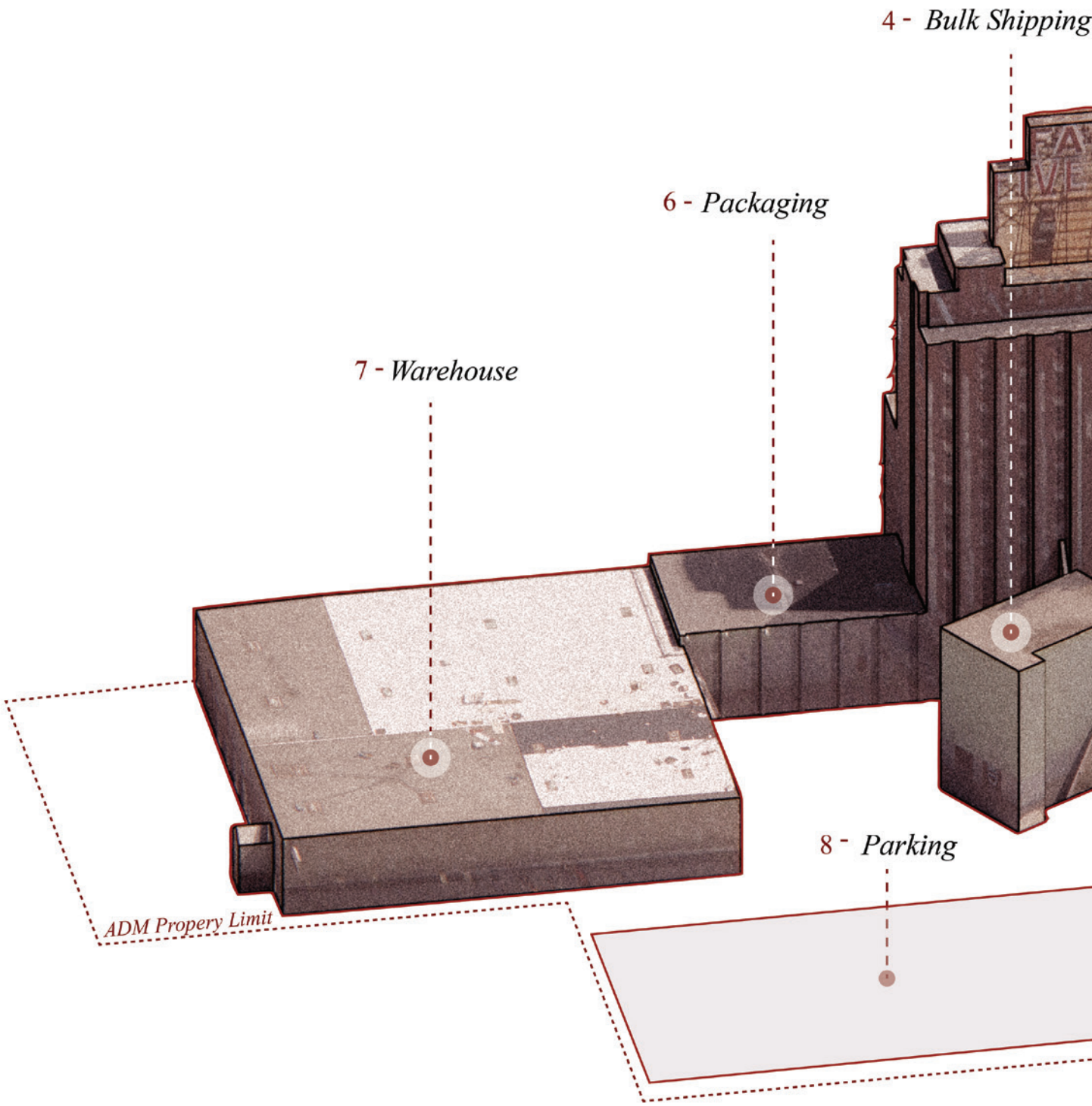
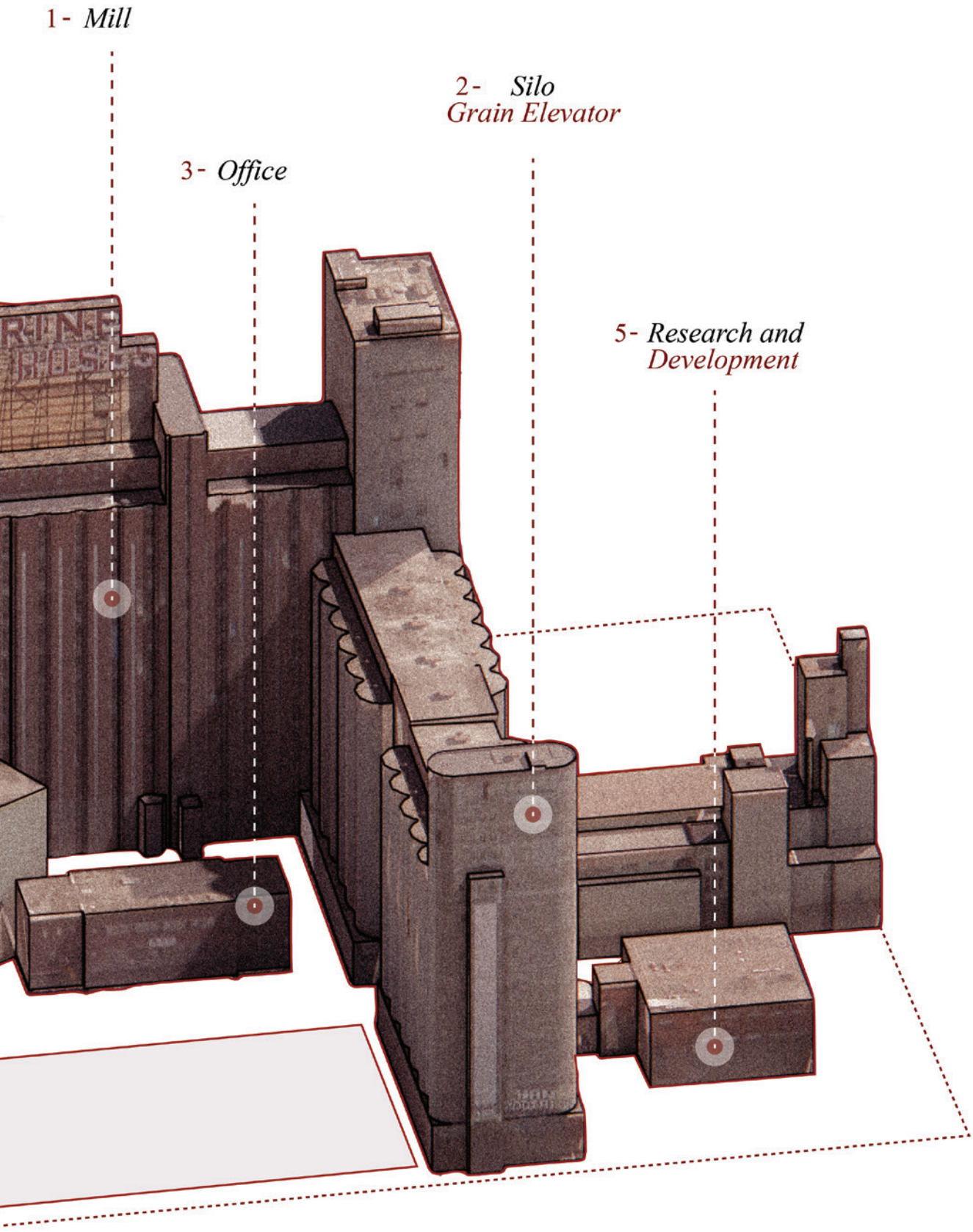


Fig. 4.47 : ***Existing Layout for Farine Five Roses Building Complex***

Drawing by Author


1- Mill
2- Silo
Grain Elevator
3- Office
5- Research and
Development

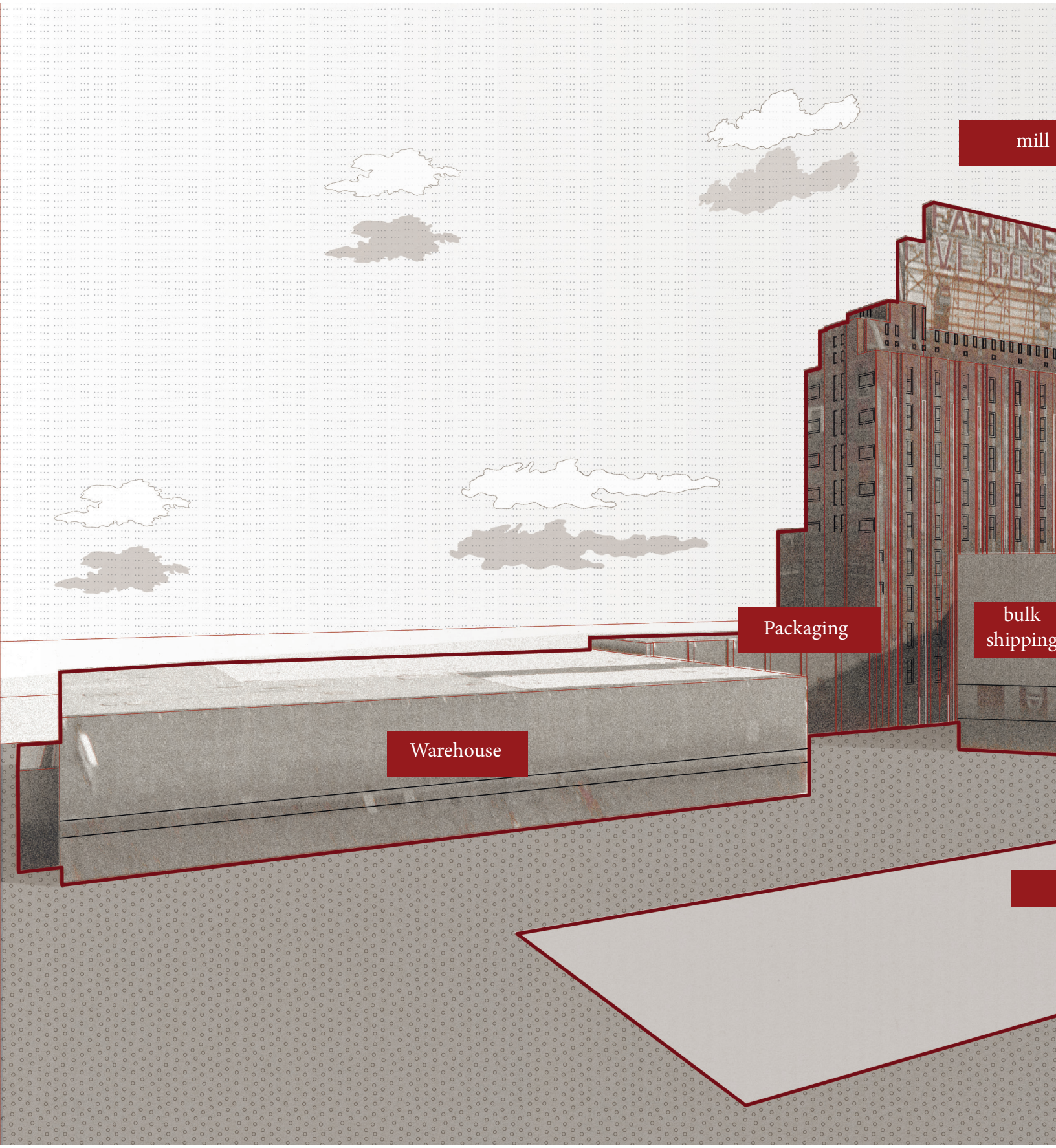
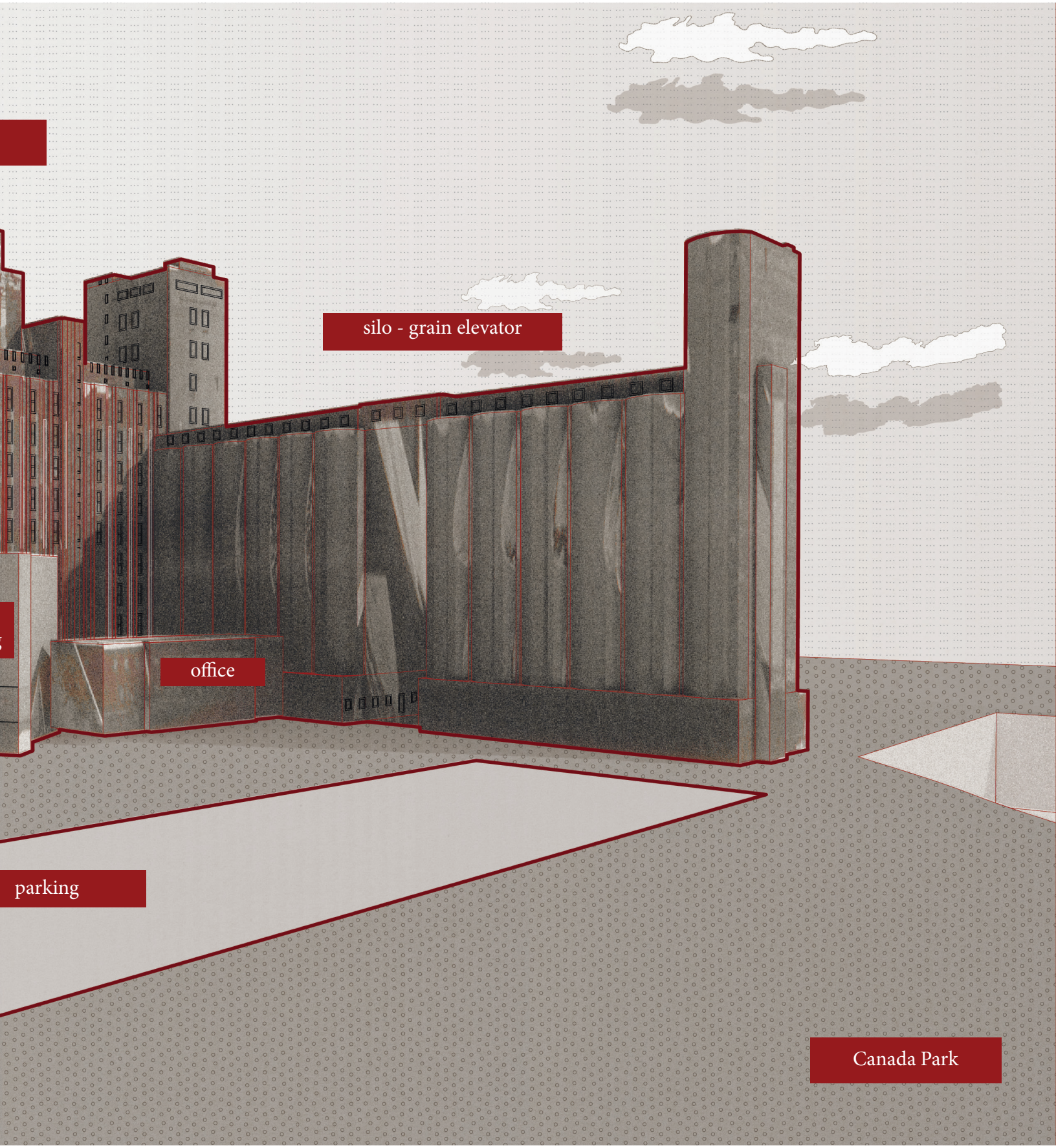


Fig. 4.48 : *Render showing Existing Layout for Farine Five Roses Building Complex*

Drawing by Author


silo - grain elevator
office
parking
Canada Park

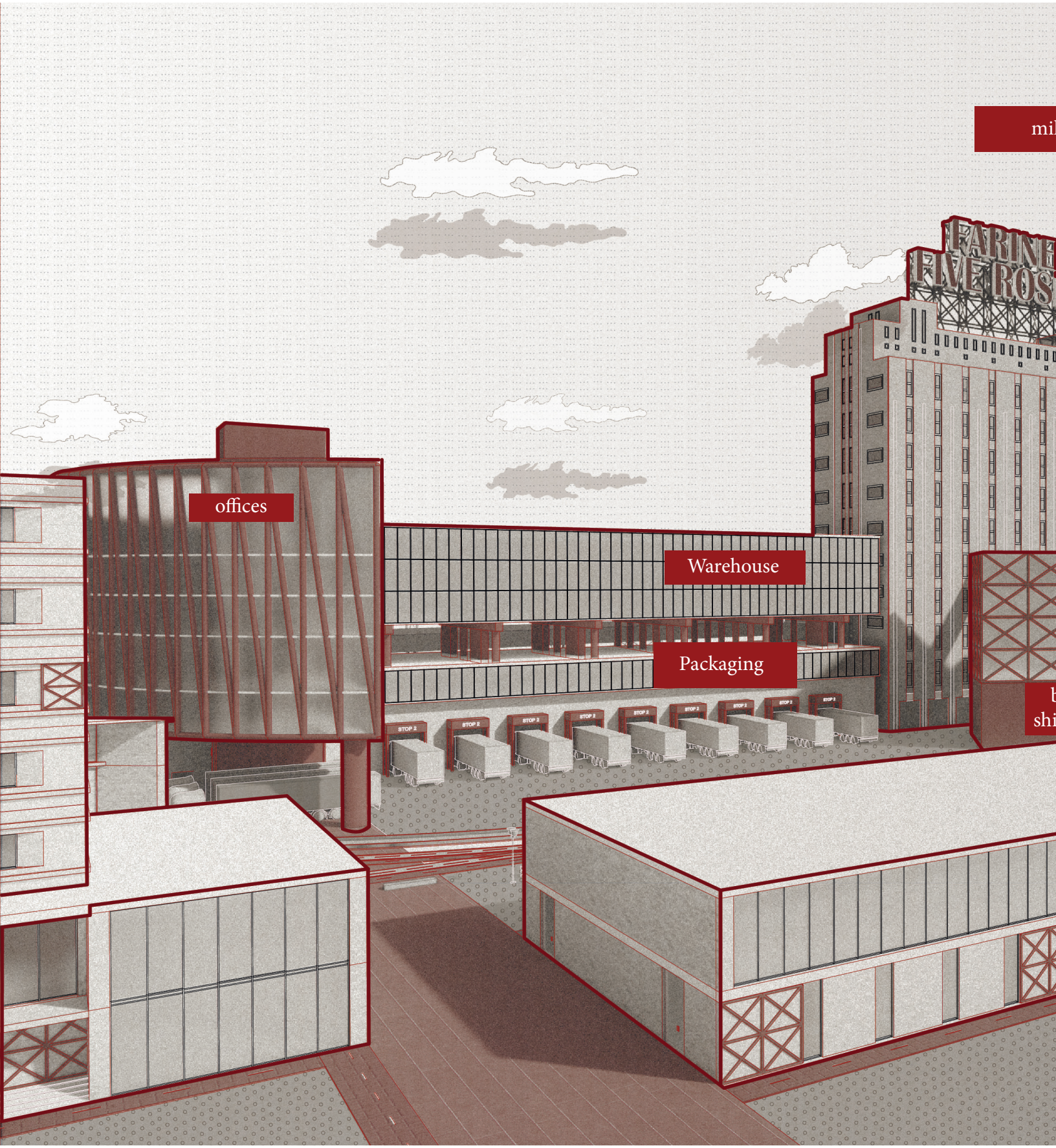
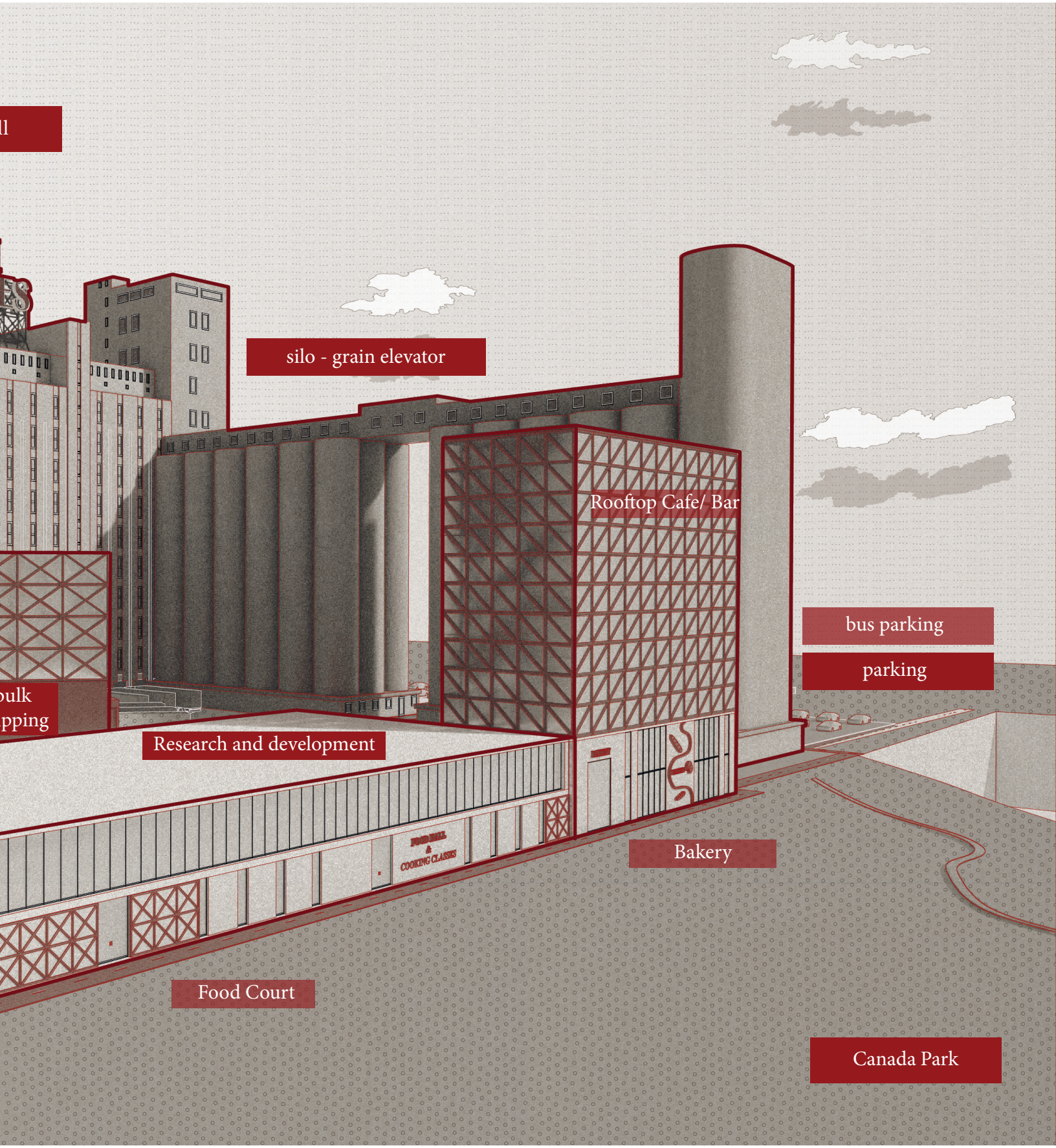


Fig. 4.49 : ***The Vertical Flour Mills render showing proposed Layout for Farine Five Roses Building Complex***

Drawing by Author


ll
silo - grain elevator
Rooftop Cafe/ Bar
bus parking
parking
oulk
pping
Research and development
Bakery
Food Court
Canada Park

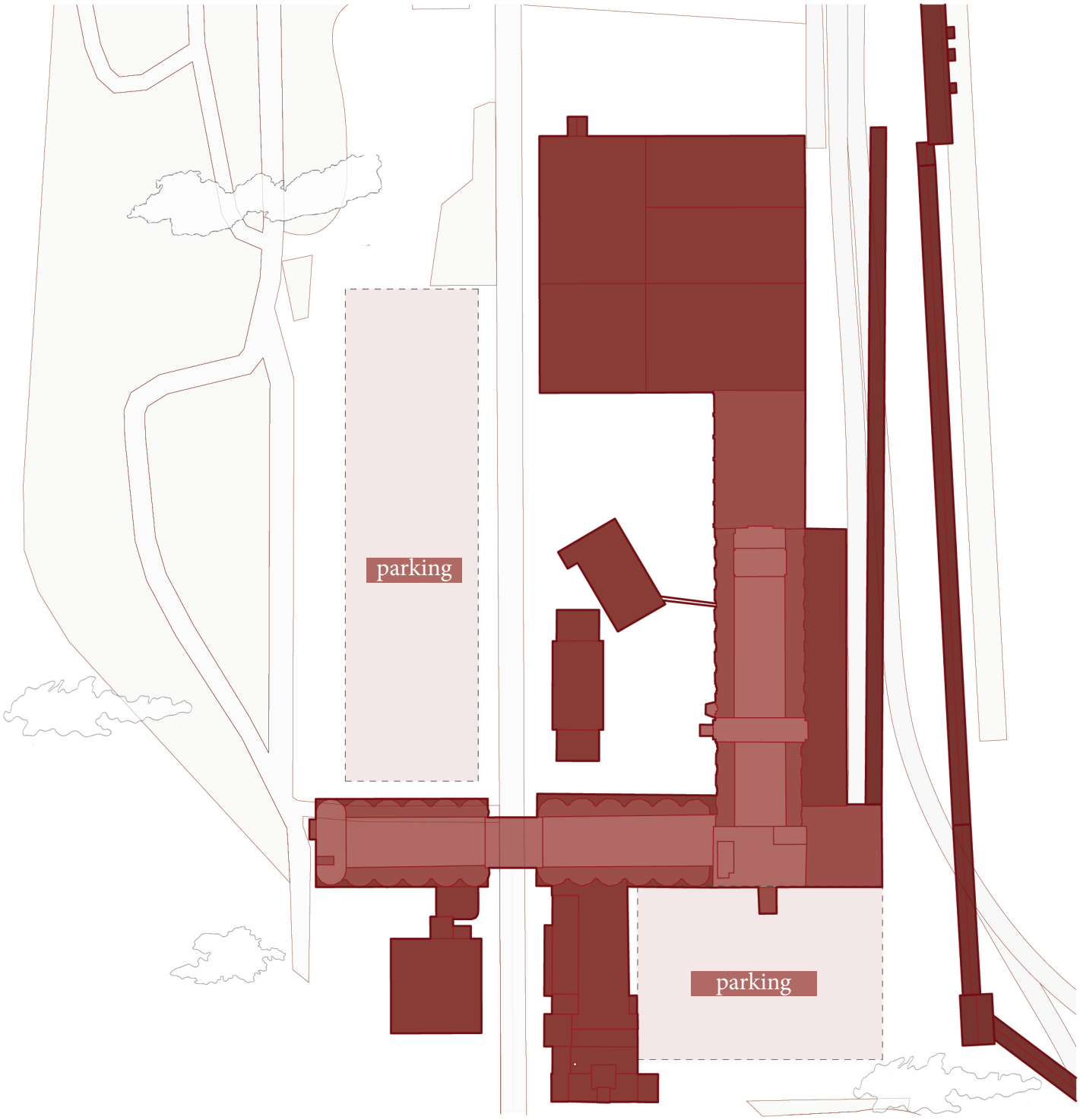


Fig. 4.50 : *Existing Layout for Farine Five Roses Building Complex*

Drawing by Author

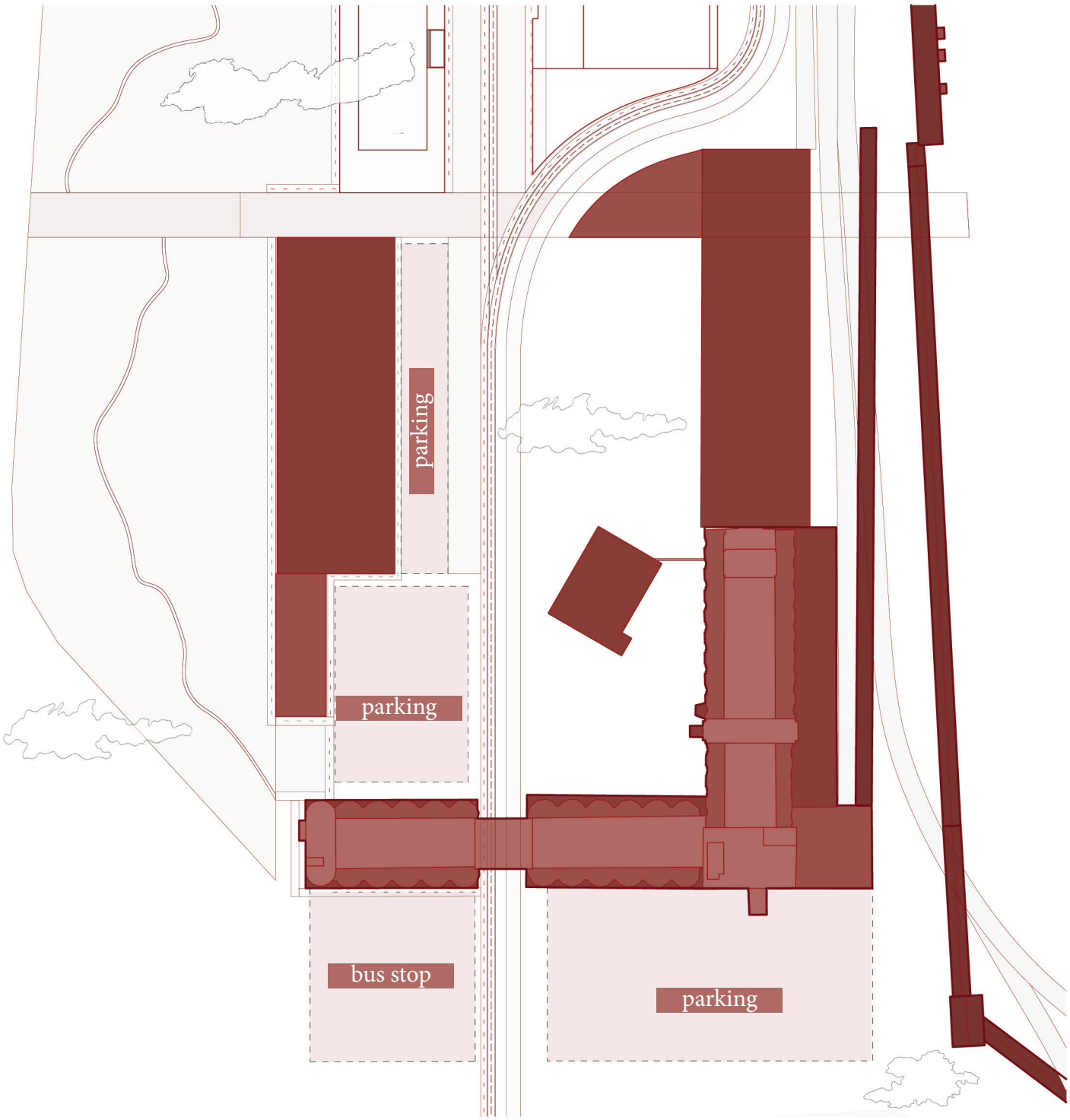


Fig. 4.51 : ***Proposed Layout for Farine Five Roses Building Complex***

Drawing by Author



Fig. 4.52 : *View from the Rooftop Cafe/Bar*

Render by Author

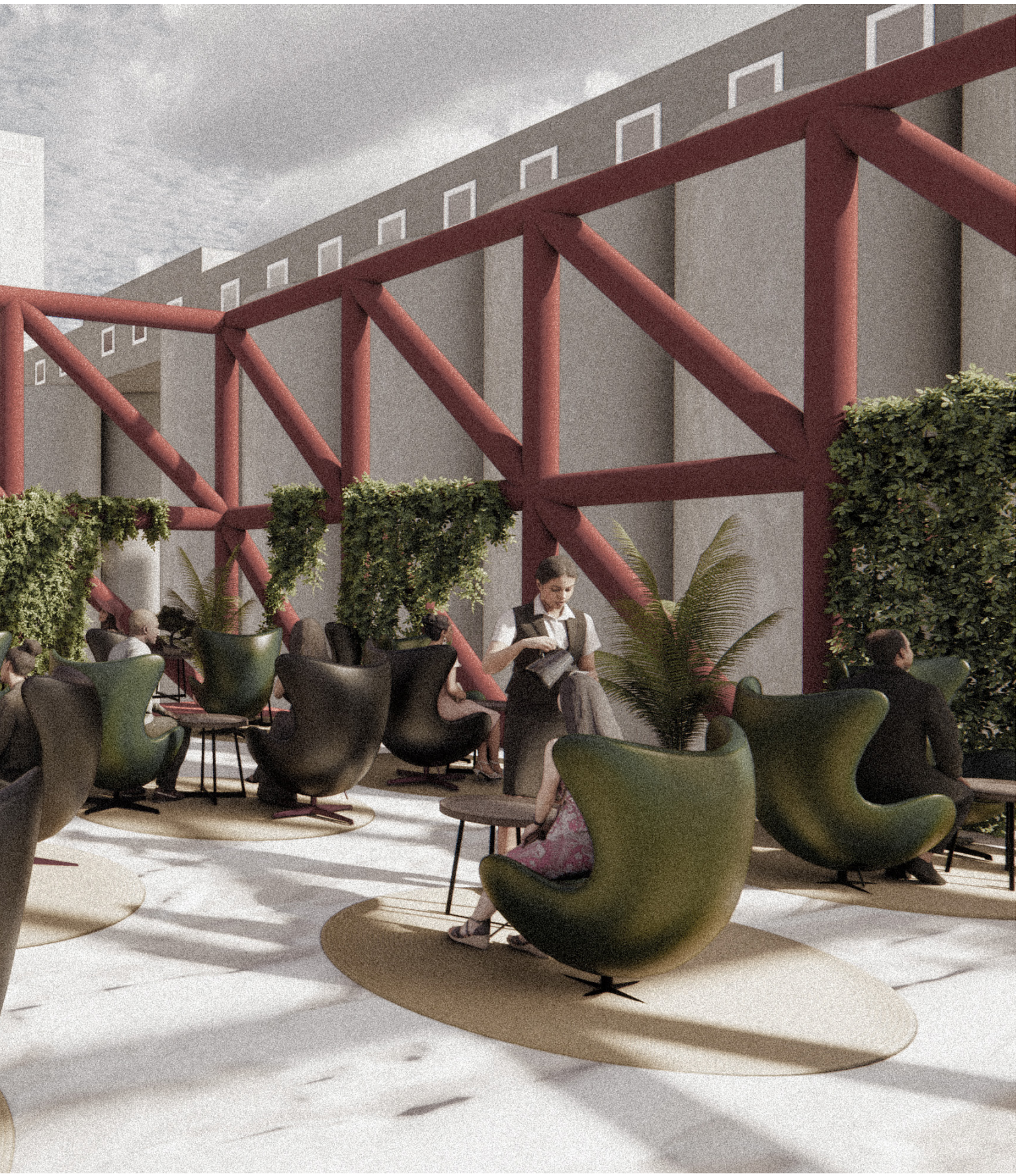
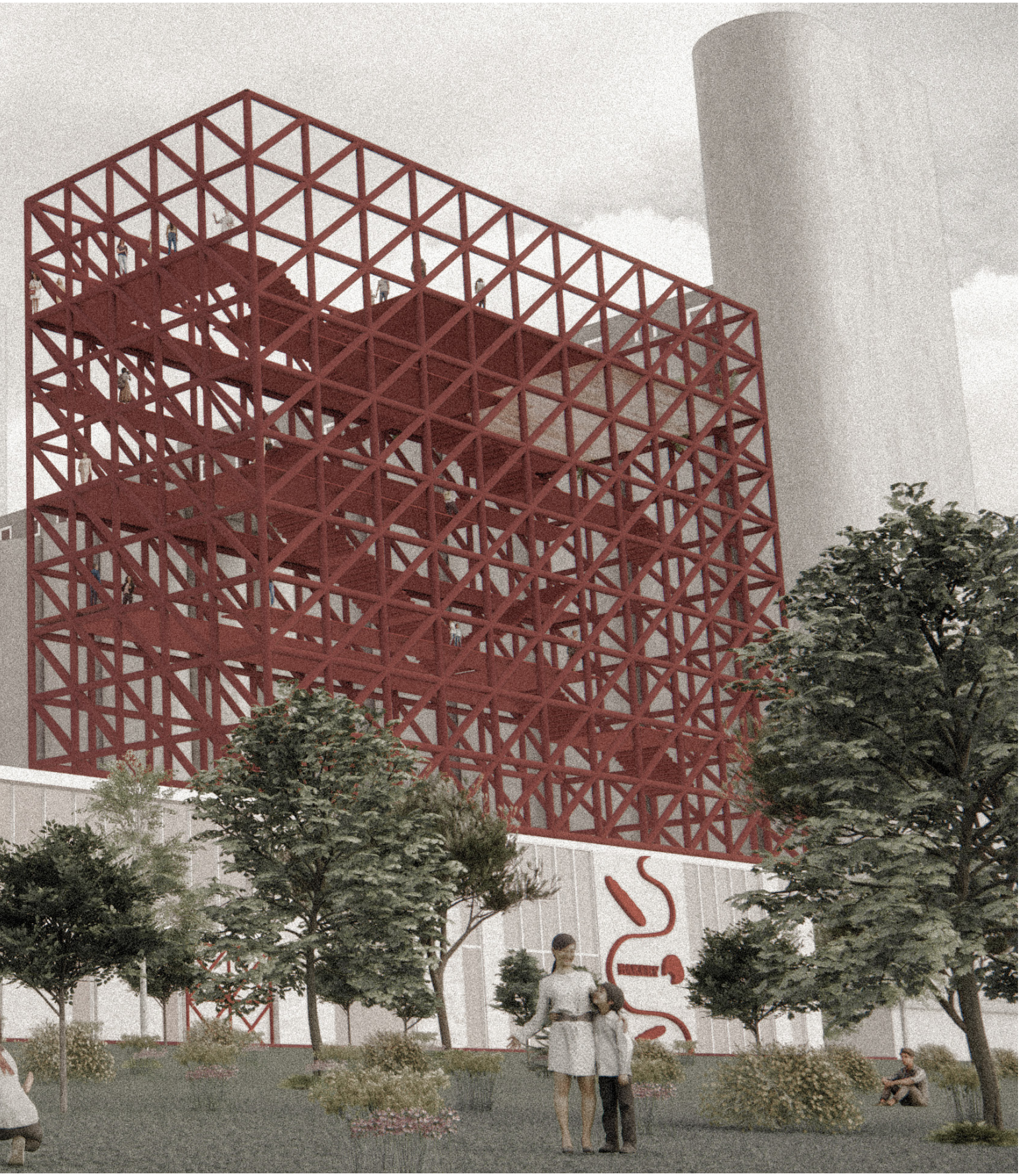




Fig. 4.53 : *Human-scale view looking toward the Farine Five Roses Building Complex.*

Render by Author



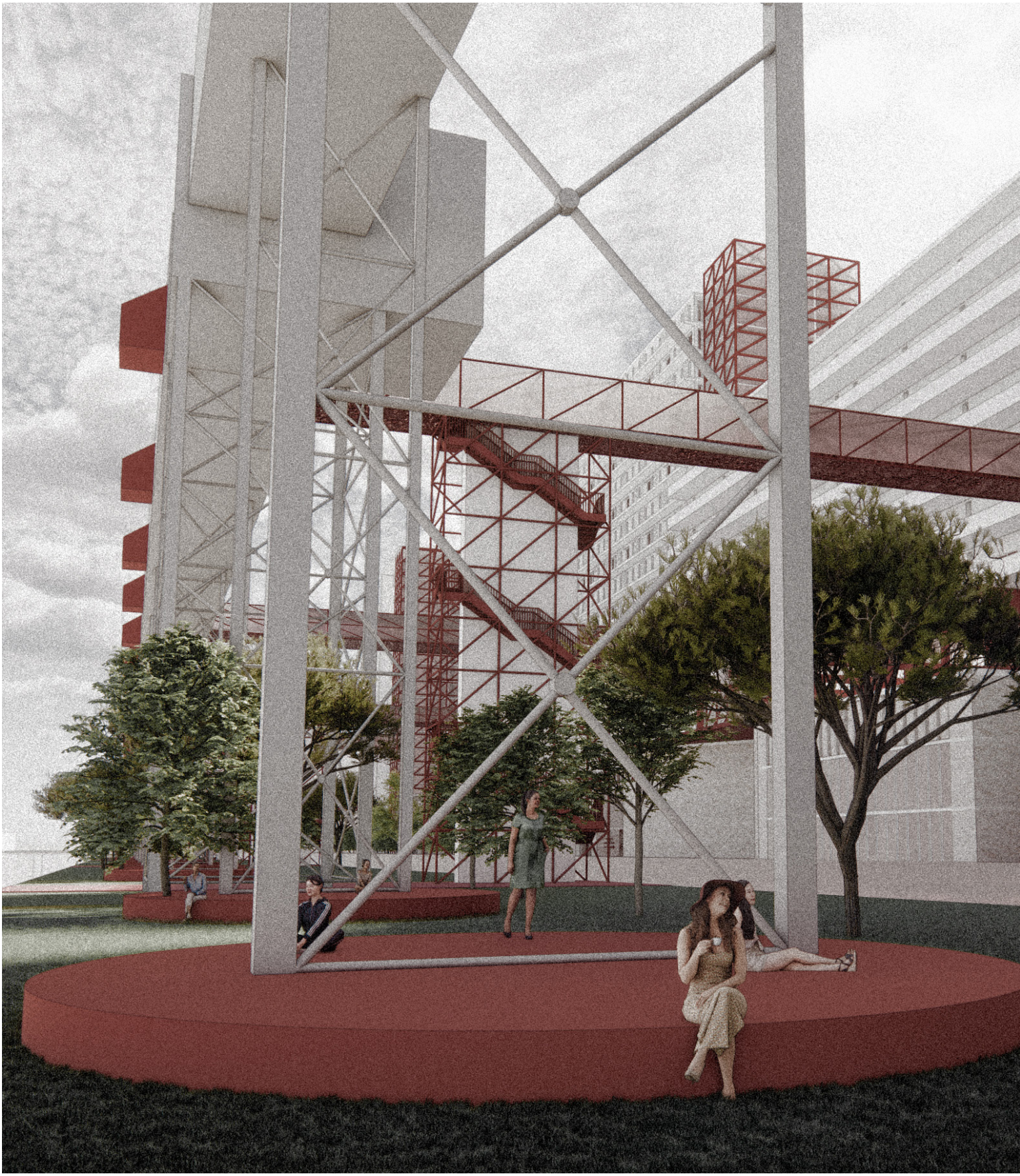


Fig. 4.54 : ***Human-scale view looking toward conveyors and residential buildings***

Render by Author



4.9 Activating the East Side by Repurposing the Conveyors

The activation of the east side strongly influenced the urban plan. Vertical circulation was the key driver in enhancing the industrial site's experience. The buildings' vertical connection to the east side of the site created unique spaces to meet in "the air."

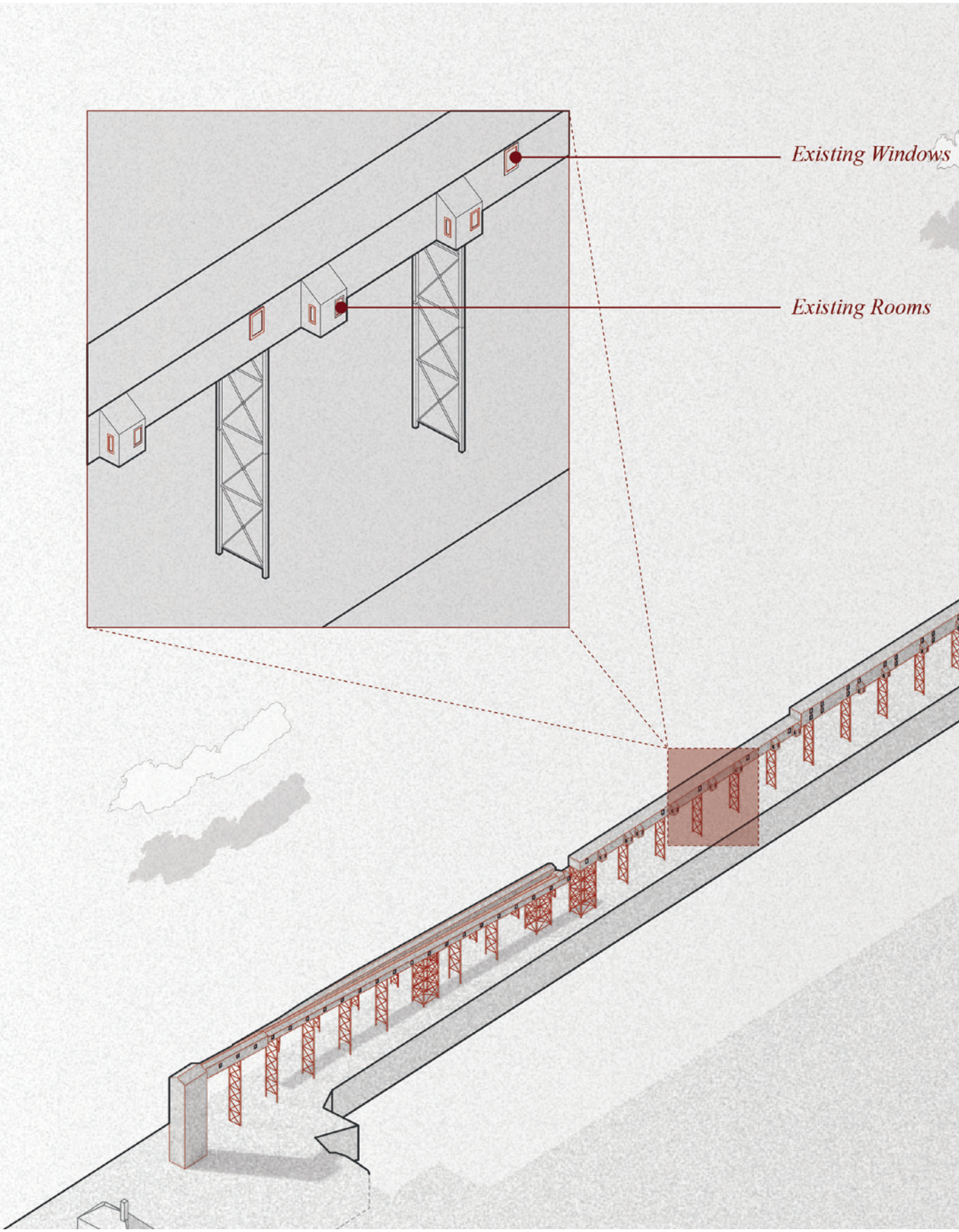
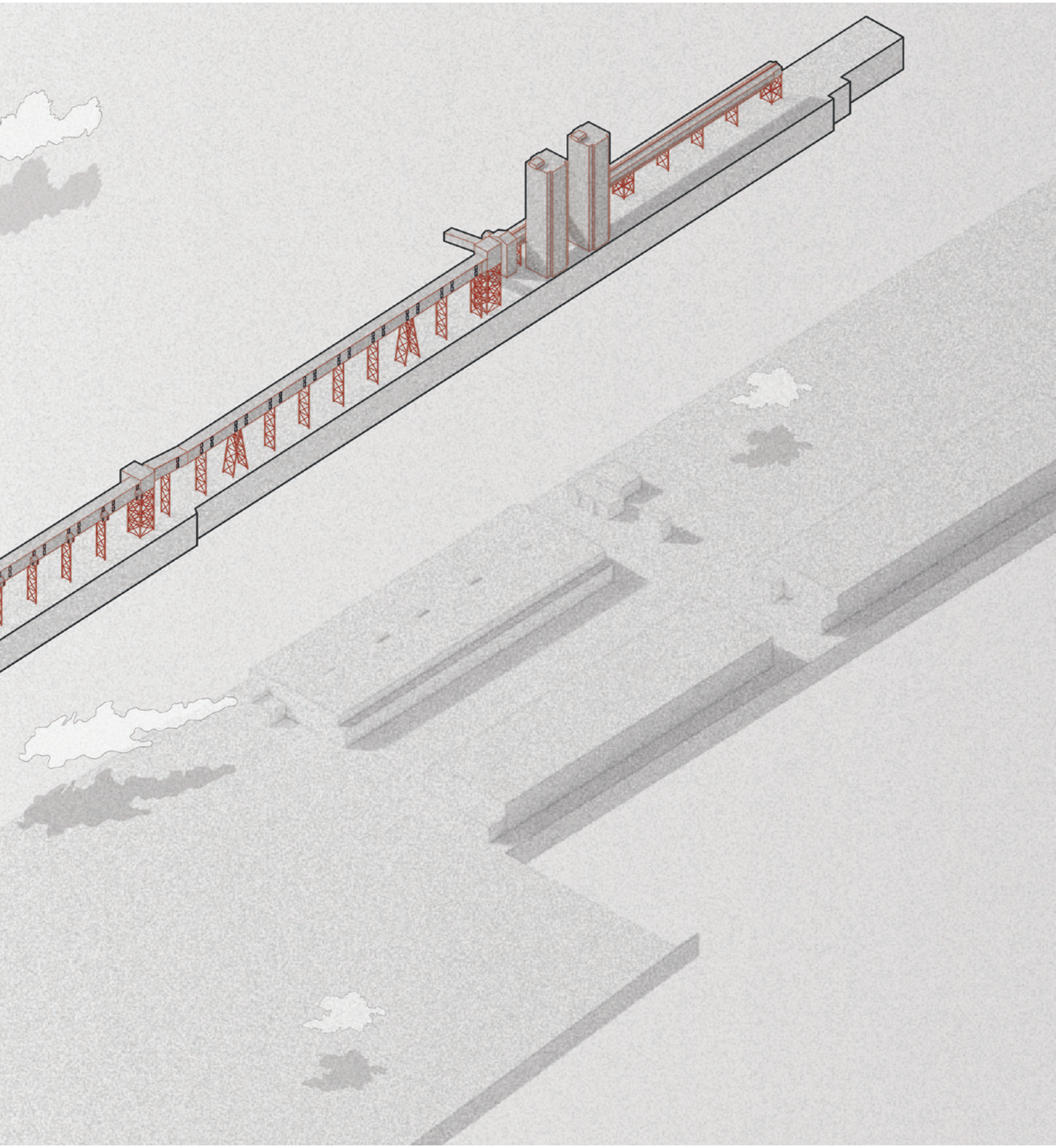


Fig. 4.55 : *Existing Codition of abandonned Conveyors*

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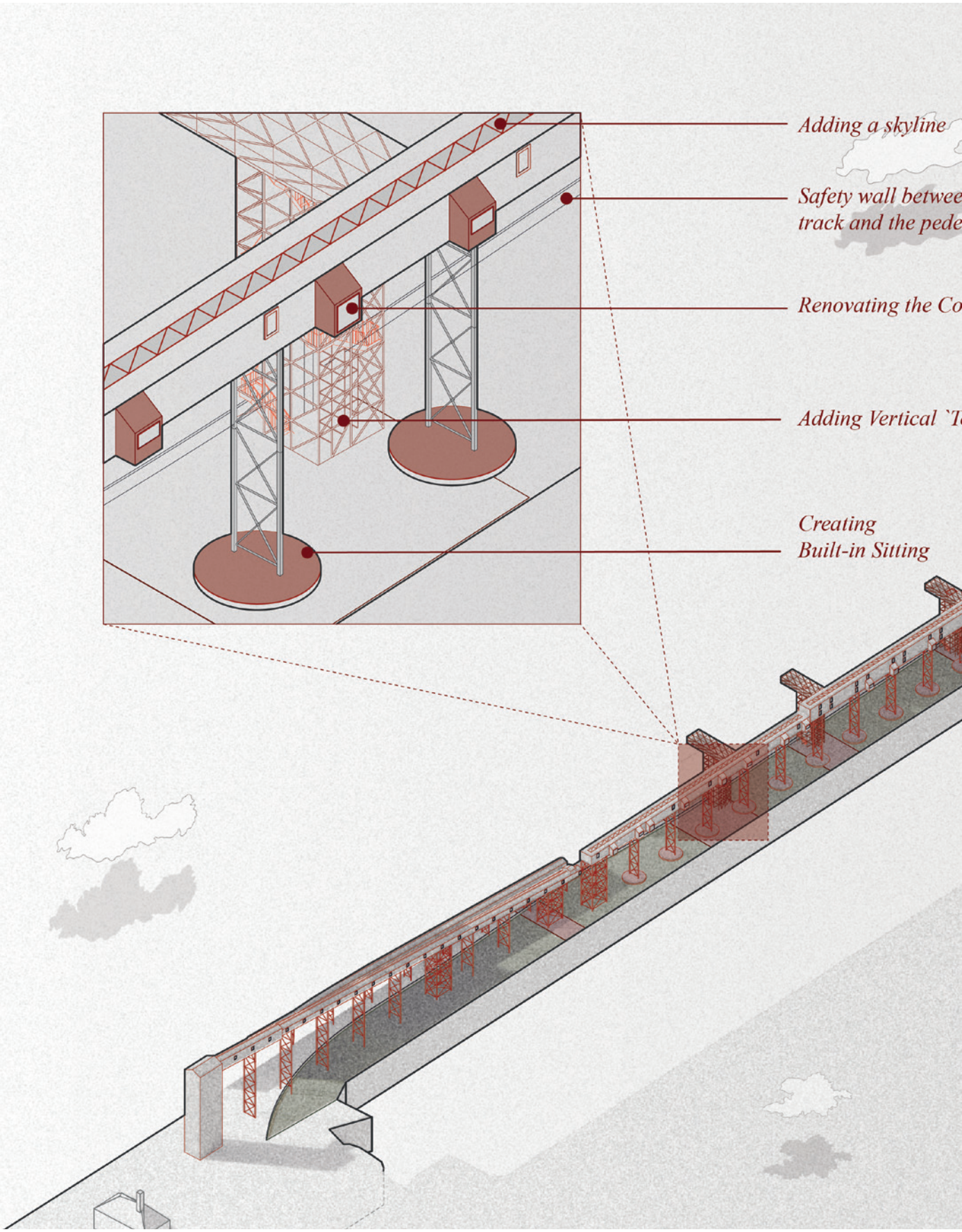
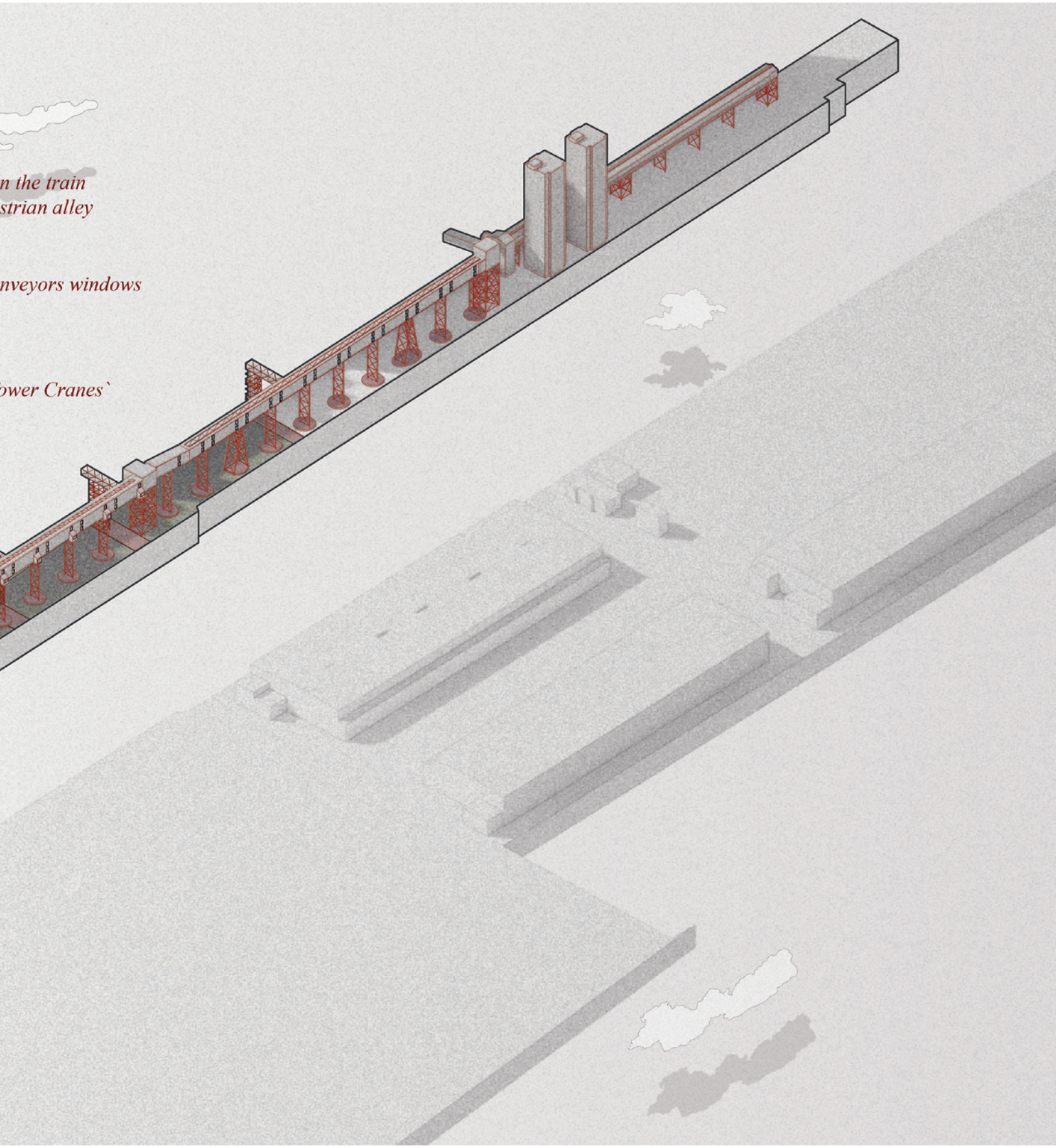


Fig. 4.56 : ***Repurposing Old Conveyors - Proposed Design***

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n the train
strian alley
nveyors windows
ower Cranes`

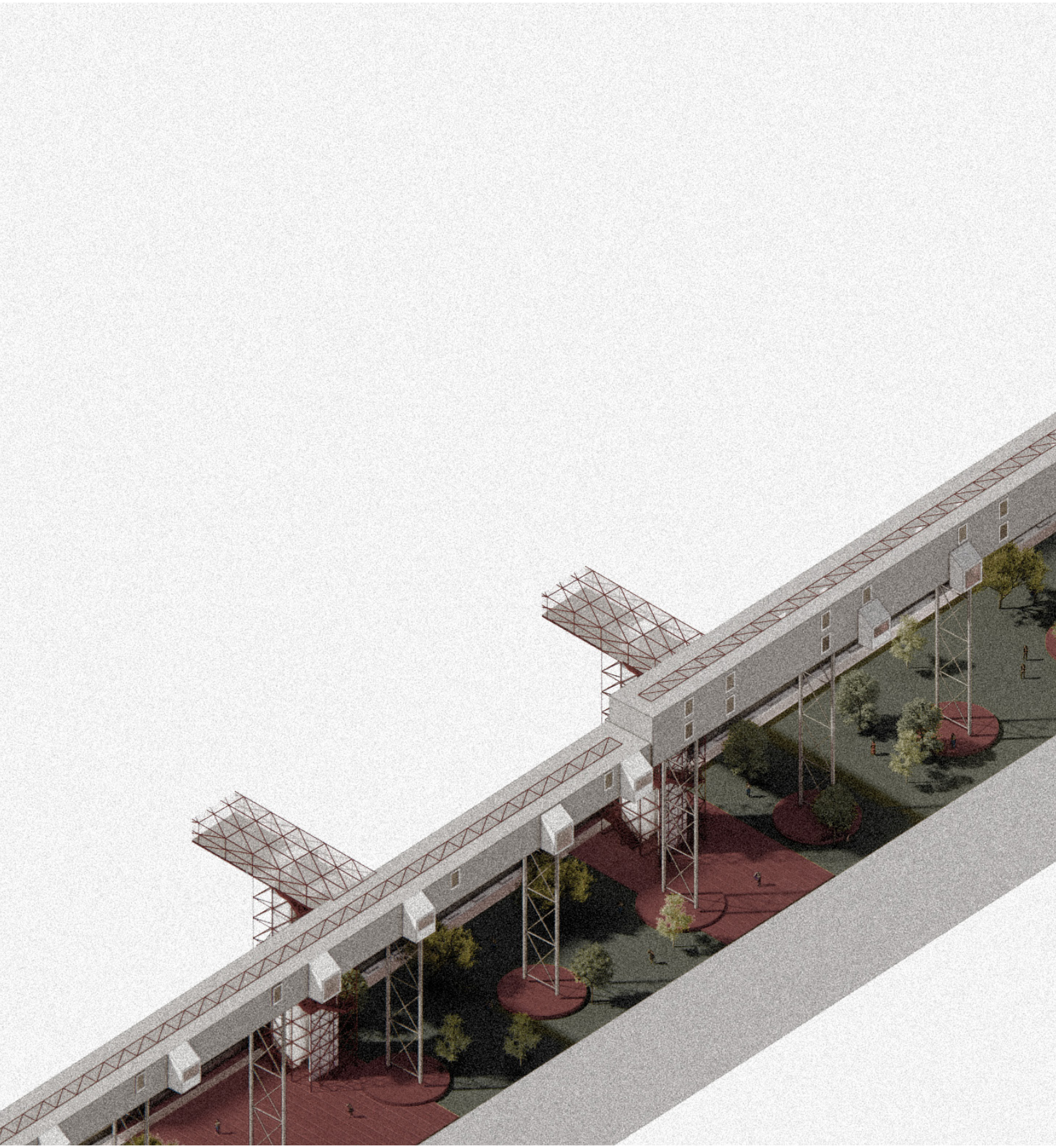
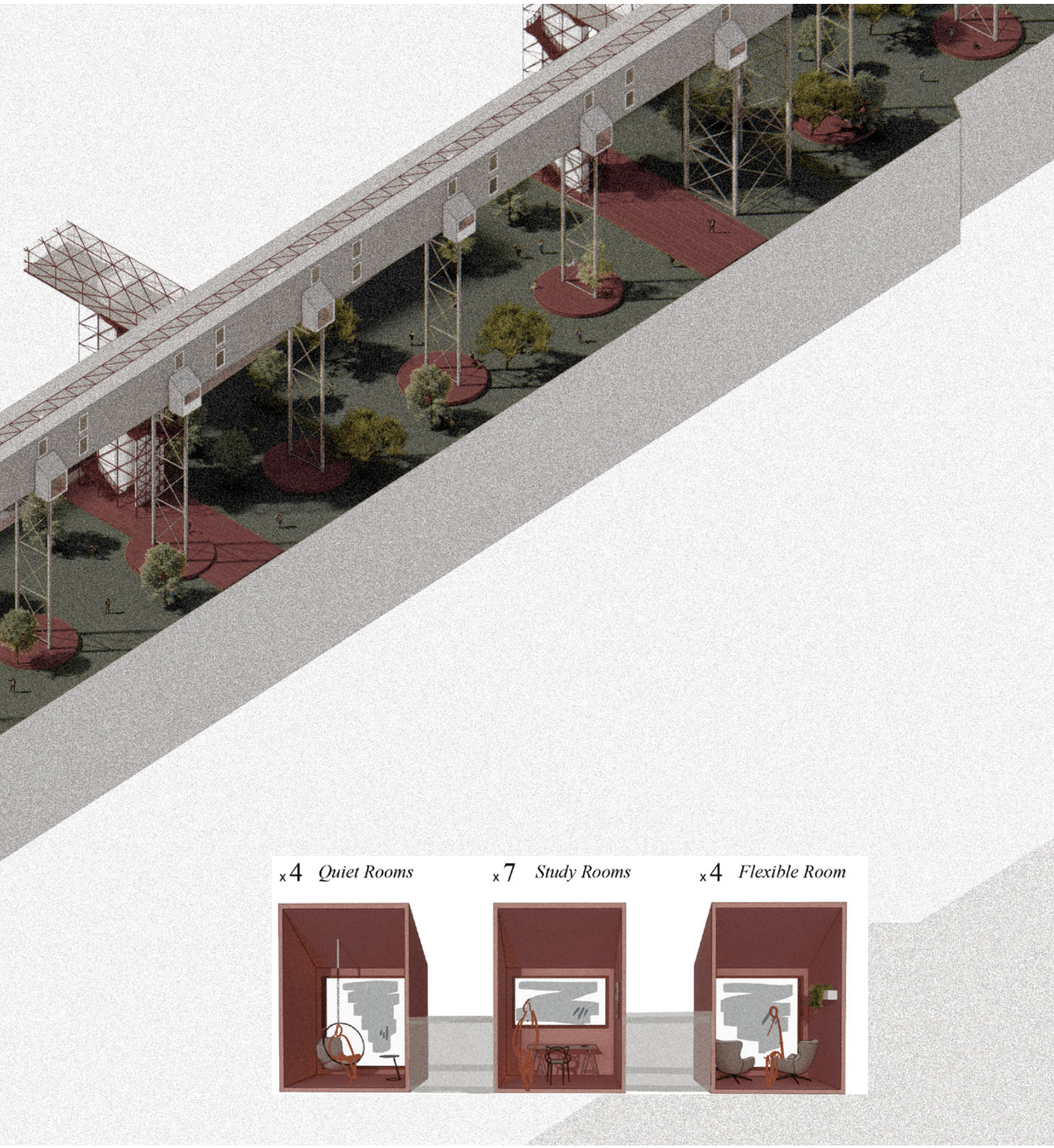


Fig. 4.57 : ***Repurposing Old Conveyors East Side Renders***

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x4 Quiet Rooms
x7 Study Rooms
x4 Flexible Room

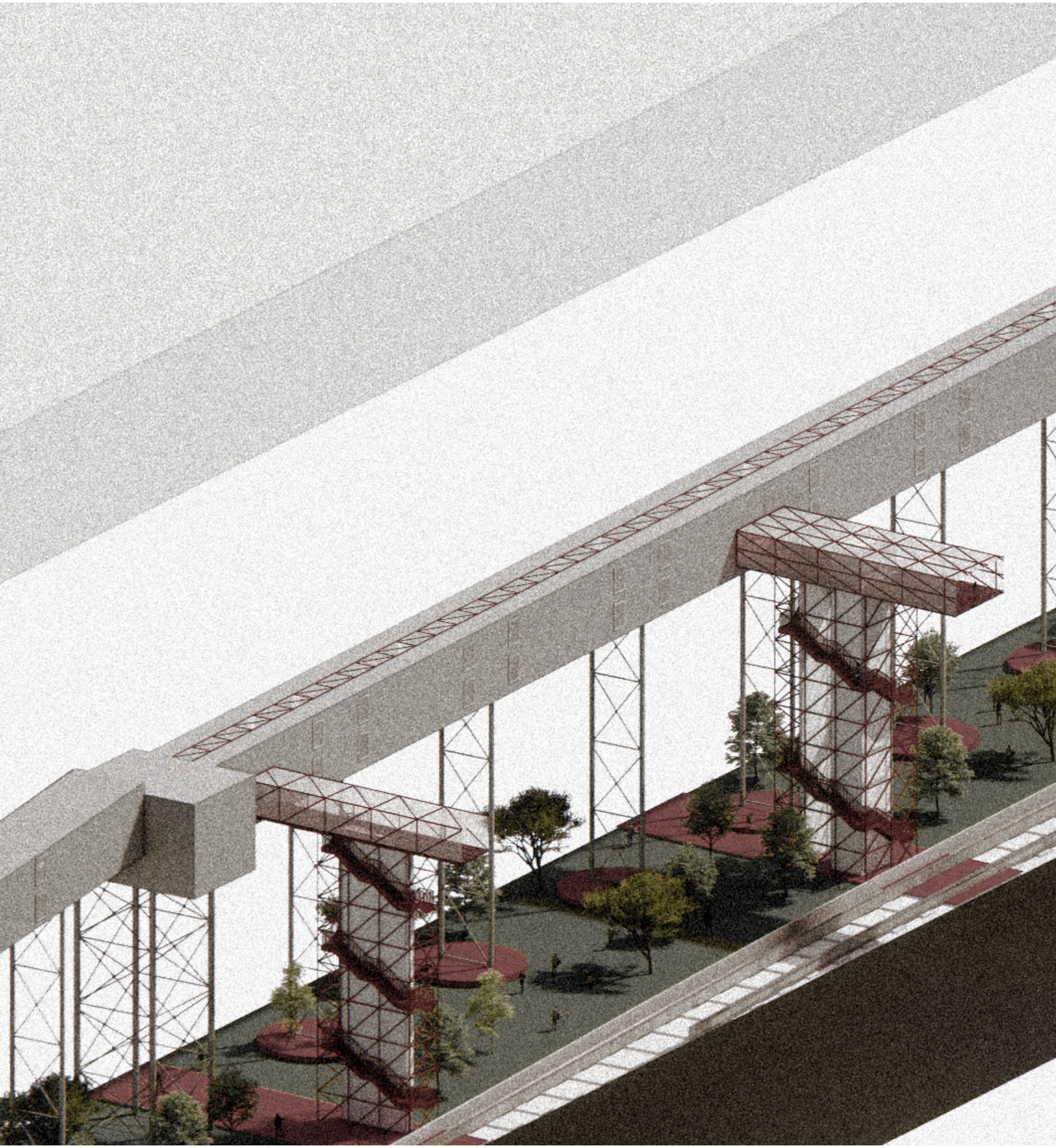
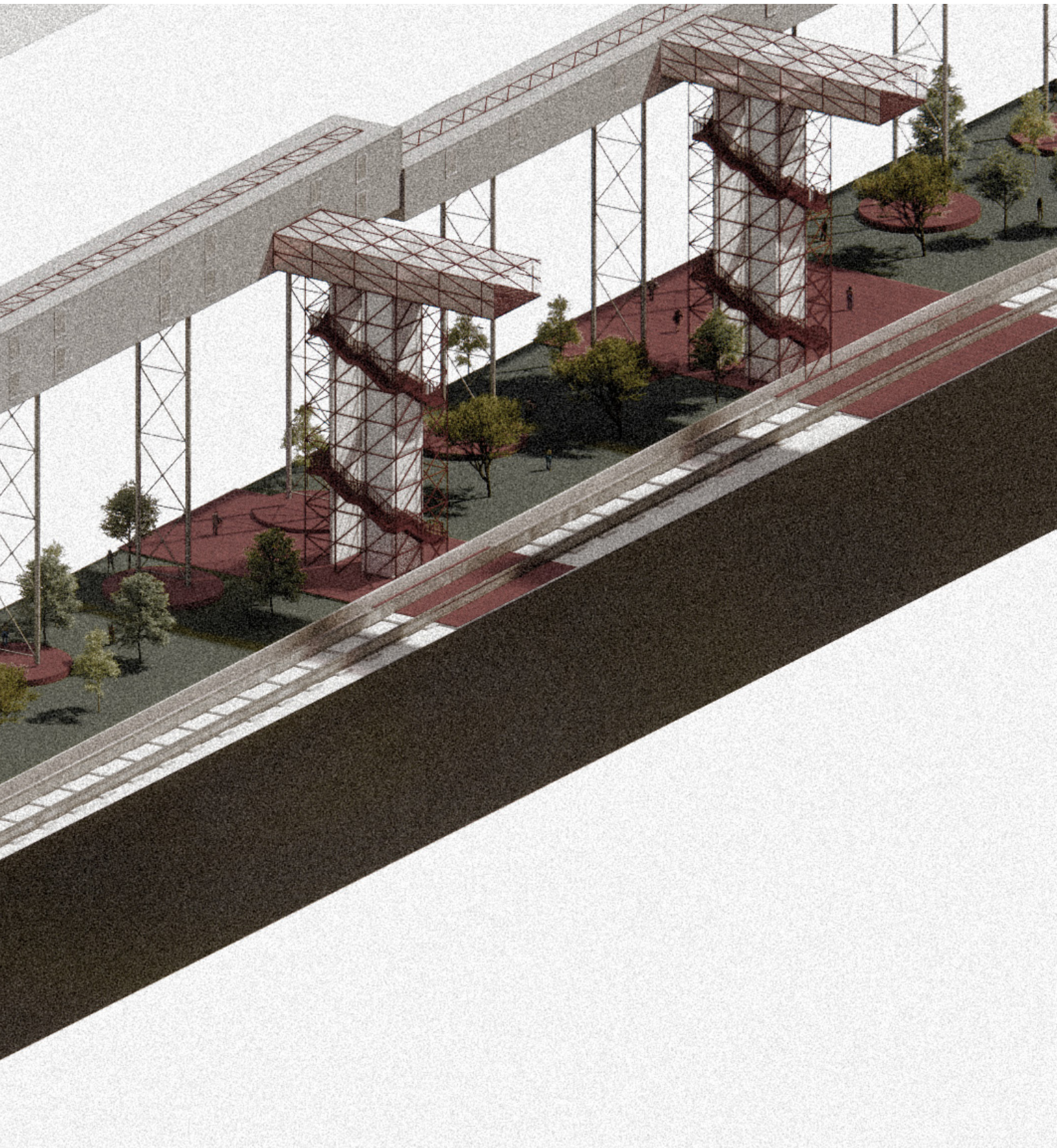
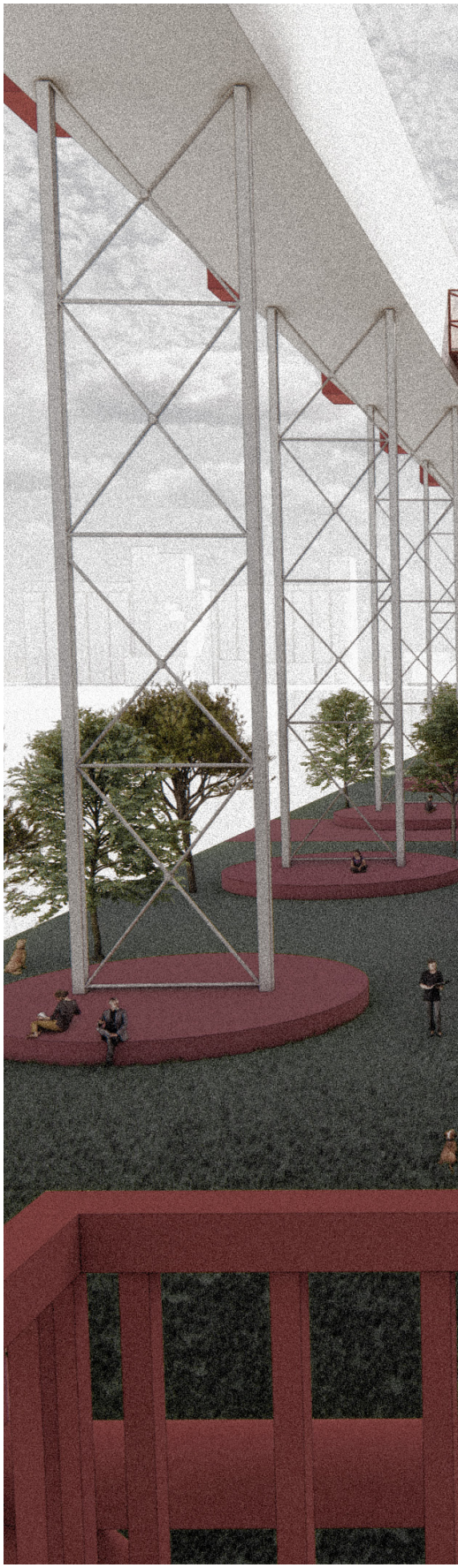


Fig. 4.58 : ***Repurposing Old Conveyors West Side Renders***

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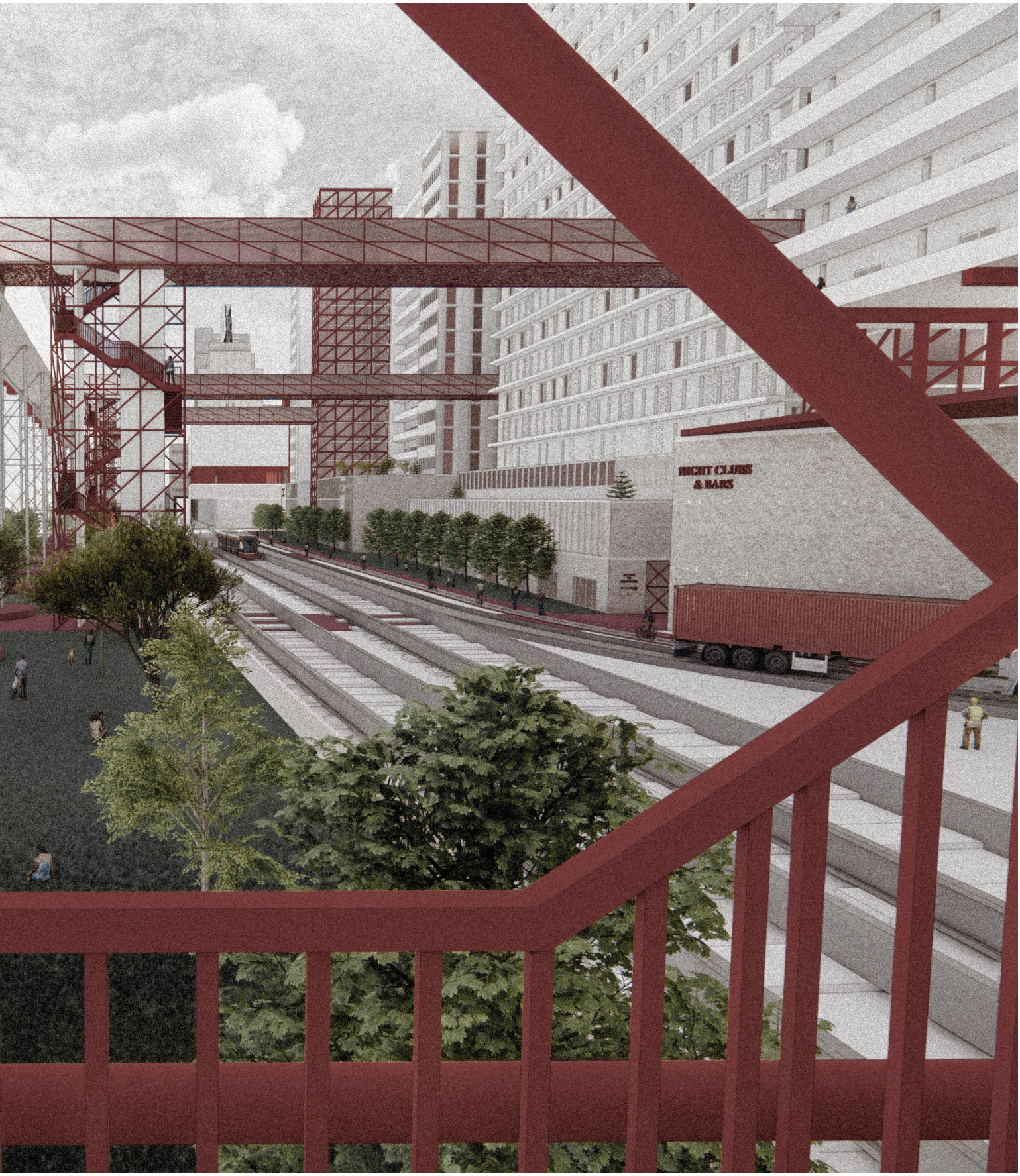


Fig. 4.59 : *Human-scale view from the "Cranes" Vertical Circualtion*

Render by Author



Fig. 4.60 : ***Conveyors will be repurposed into a walkable library and art exhibition open to everyone.***

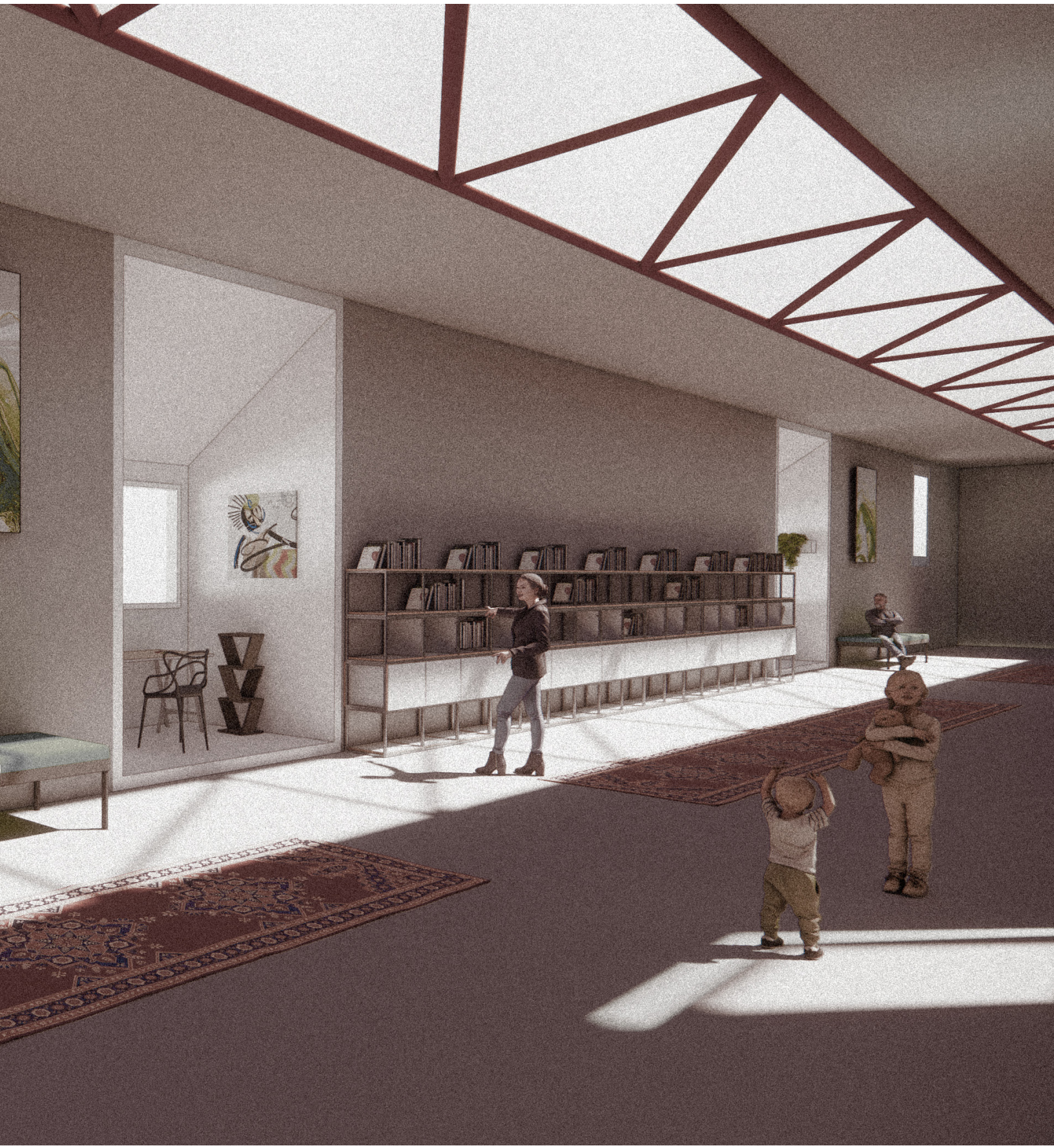
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Fig. 4.61 : ***Inside Renders of the repurposed conveyors with the study rooms***

Render by Author



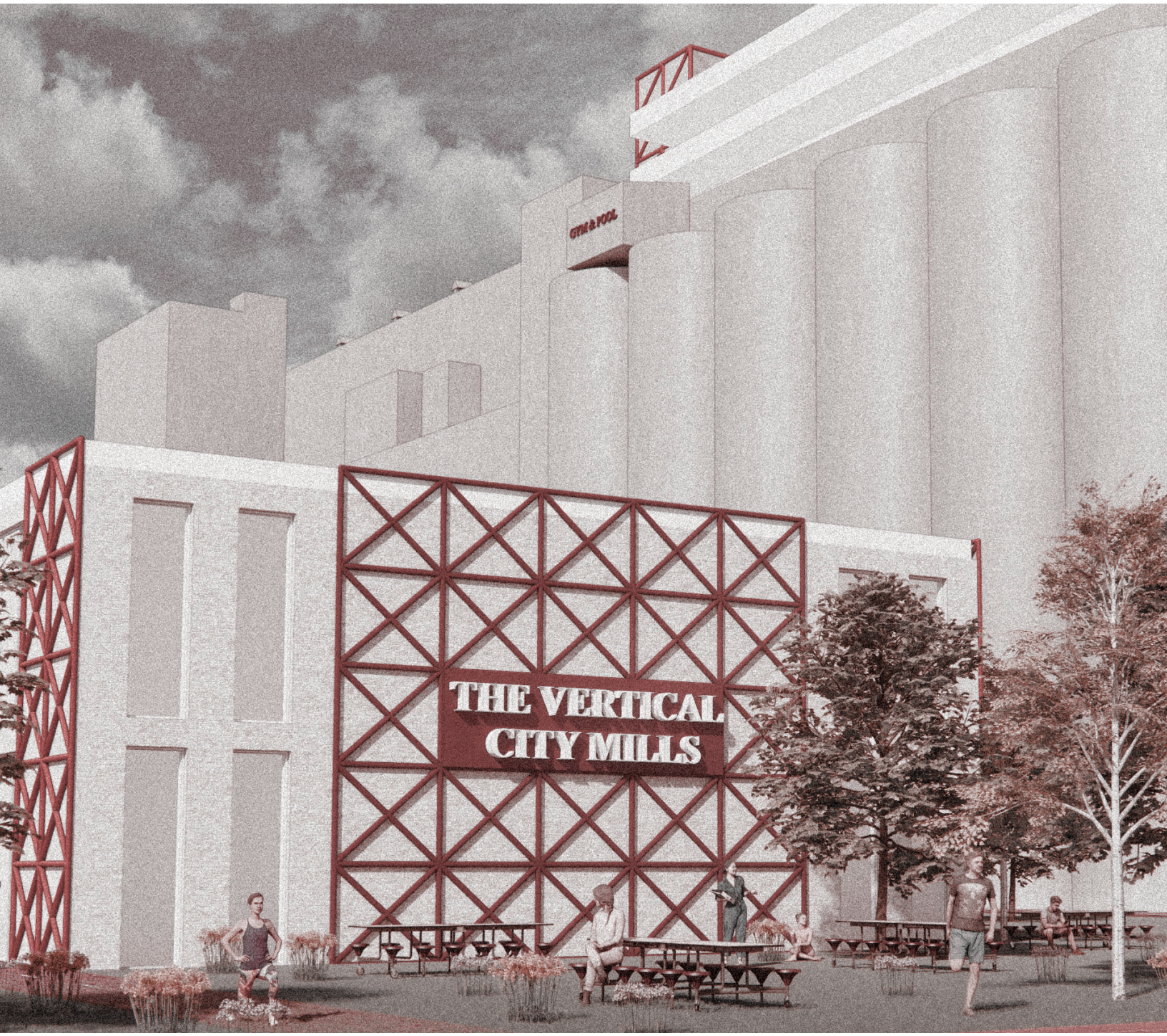


Fig. 4.62 : *Human-scale view looking toward the visitor center and Annexe 5*

Render by Author



4.10 Program and Plans

When designing these building types and layouts, an analysis was conducted on the 2024 housing supply report and Montreal's 2030 and 2050 vision. The housing supply report helped identify what type of housing was missing and what needed improvement (Canada Mortgage and Housing Corporation 2024; Ville de Montréal 2020; Ville de Montréal 2022). The 2050 vision handbook guided the approach to ensure that housing should adapt to meet diverse user needs (Ville de Montréal 2022). New construction should be designed to accommodate individuals living alone, families, and those in shared apartments, regardless of their income or ability.

The handbook "The City Vision: Imagine the Montreal of 2050" highlights a concerning trend: rent in Montreal continues to rise while the average apartment size decreases (Ville de Montréal 2022). In response to this issue, the units planned for this proposal are designed to counteract this trend by being more spacious than standard apartments and offering a more significant number of two-bedroom and larger units. This approach compensates for the current market, where new condos predominantly consist of studios and one-bedroom apartments. As a result, the proposal includes 1,404 bedrooms spread across 533 units, in contrast to the 1,000 units proposed by the city, which likely feature a higher proportion of studios than four-bedroom apartments.

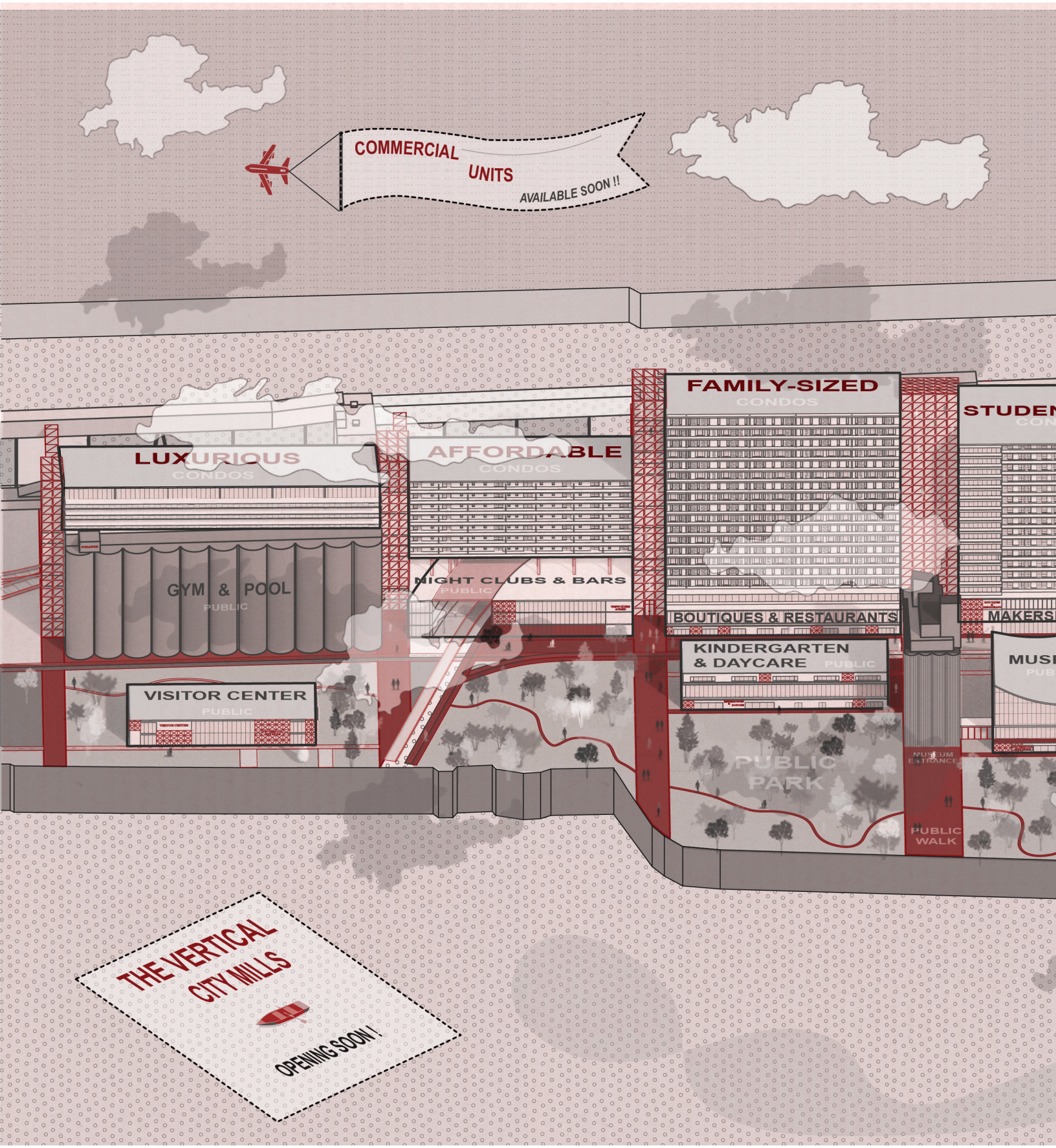
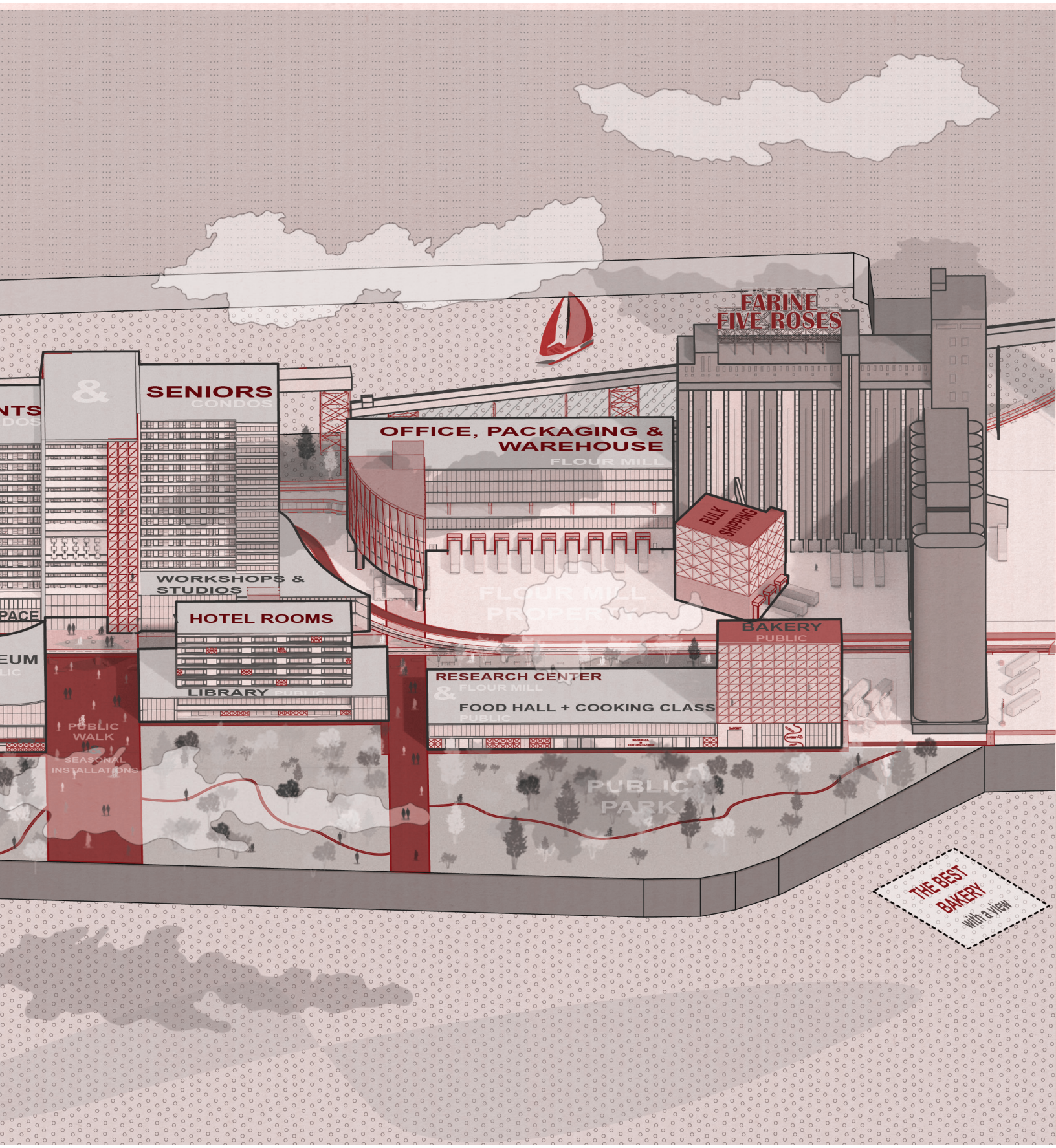


Fig. 4.63 : *Drawing showing the programs of each building in the Vertical City Mills redevelopment plan*

Render by Author


FARINE
FIVE ROSES
SENIORS
CONDOS
OFFICE, PACKAGING &
WAREHOUSE
FLOUR MILL
BULK
SHIPPING
WORKSHOPS &
STUDIOS
HOTEL ROOMS
BAKERY
PUBLIC
RESEARCH CENTER
FLOUR MILL
FOOD HALL + COOKING CLASS
LIBRARY
PUBLIC
PUBLIC
WALK
SEASONAL
INSTALLATIONS
PUBLIC
PARK
THE BEST
BAKERY
with a view

The Housing supply report clearly states a need for seniors and more affordable housing in Montreal. Moreover, in the Montreal 2030 Future Vision, the document on page 63 mentions that Montreal has an ageing population, again emphasizing the need to create housing for our seniors. The same document highlights that Montreal has a thriving community sector with more than 800 community organizations. This number shows that Montreal's residents need more public spaces to encourage community organizations to have places to thrive. That is why most of the west side of the site will dedicate most of its buildings to public entity structures such as Museums, Visitor centers, Libraries, Daycare, Food courts, Bakeries and Cafes…

Montreal also has many post-secondary students and is ranked the sixth-best city for international students. It has 11 universities and 60+ colleges. Vertical City Mills will have apartments for students to have better access to the closest schools and universities, like the well-known ETS University, which is only 7 minutes by bike from Pointe-du-Moulin.

Finally, the site is developing more urban resources to meet the daily needs of residents. These resources are to be found mainly on the first two floors of the residential buildings and all along the pier's west side. The plan emphasizes the creation of employment opportunities through numerous stores, cafés, restaurants and bars. In addition, educational facilities, including a high-quality kindergarten and nursery, will be integrated into the site. By encouraging local shopping, this proposal aims to reduce travel distances and car dependency, thus directly improving the neighbourhood's economic vitality and quality of life.

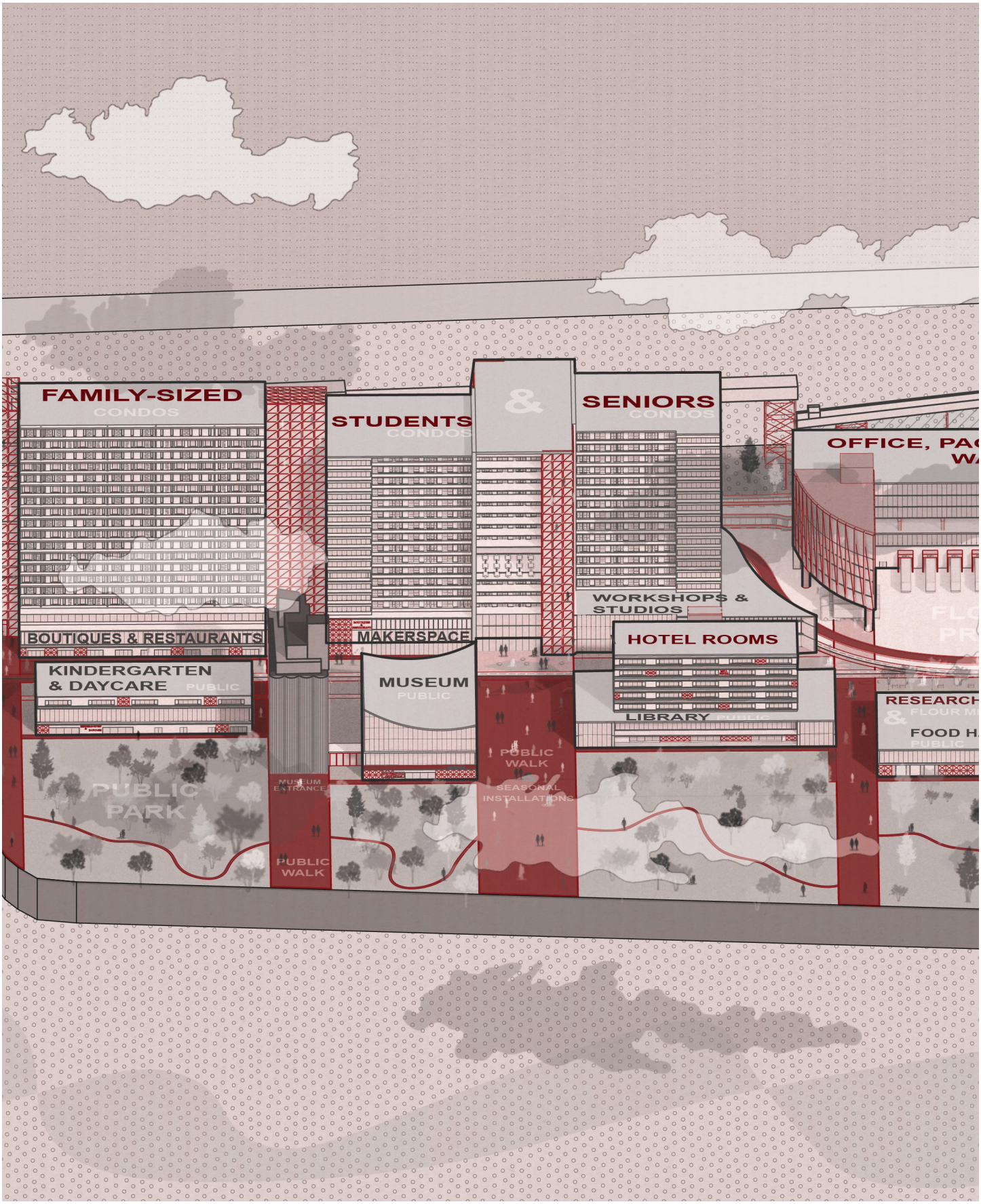


Fig. 4.64 : *Zooming on the programs of the Vertical City Mills*

Render by Author

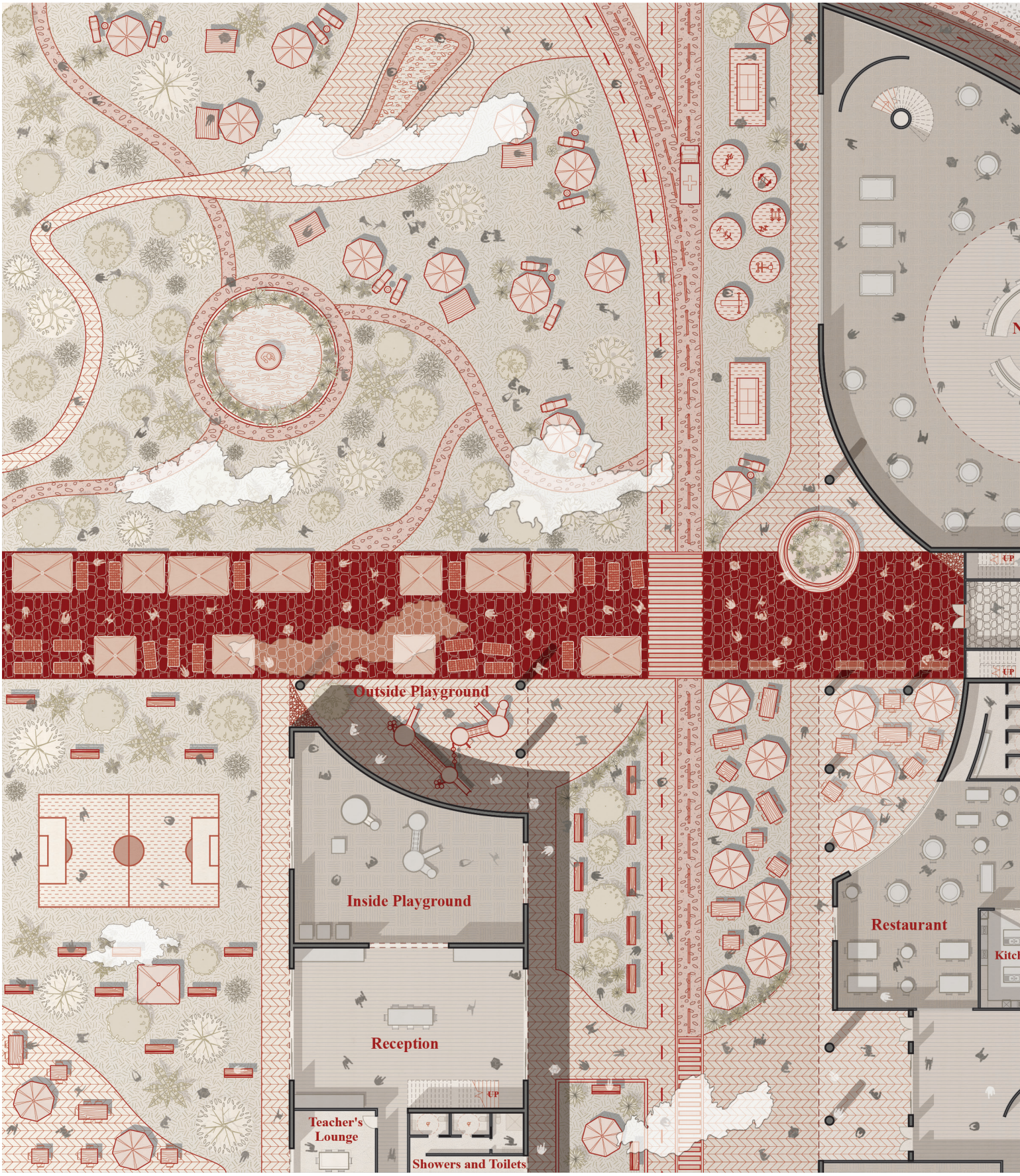
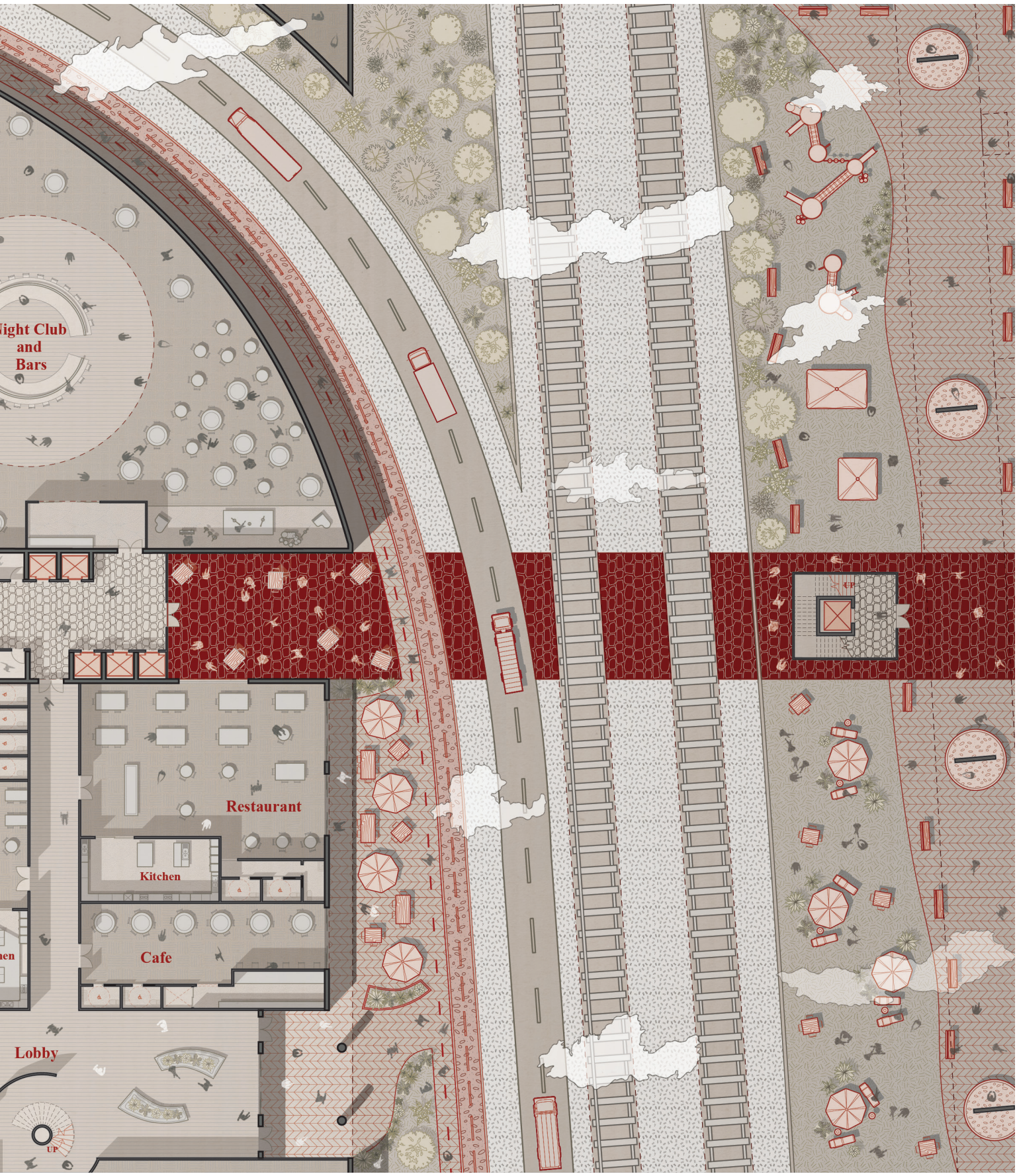


Fig. 4.65 : *Drawing depicting a potential layout of the ground floor plan, at a scale of 1:350.*

Render by Author


ight Club
and
Bars
Restaurant
Kitchen
Cafe
Lobby
UP

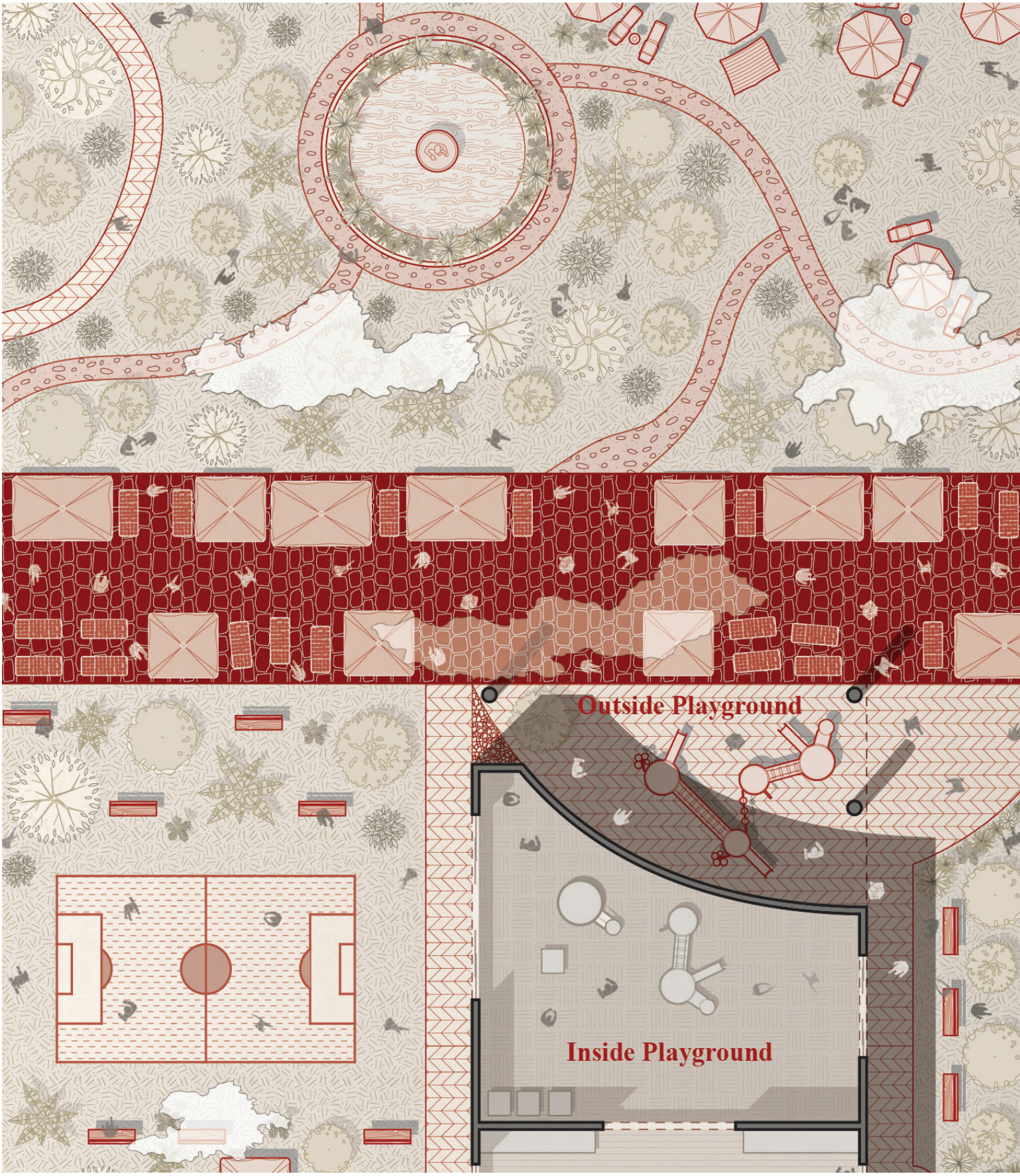


Fig. 4.66 : *Close-up view of the ground floor plan, emphasizing the multipurpose path and pedestrian access to the buildings.*

Render by Author

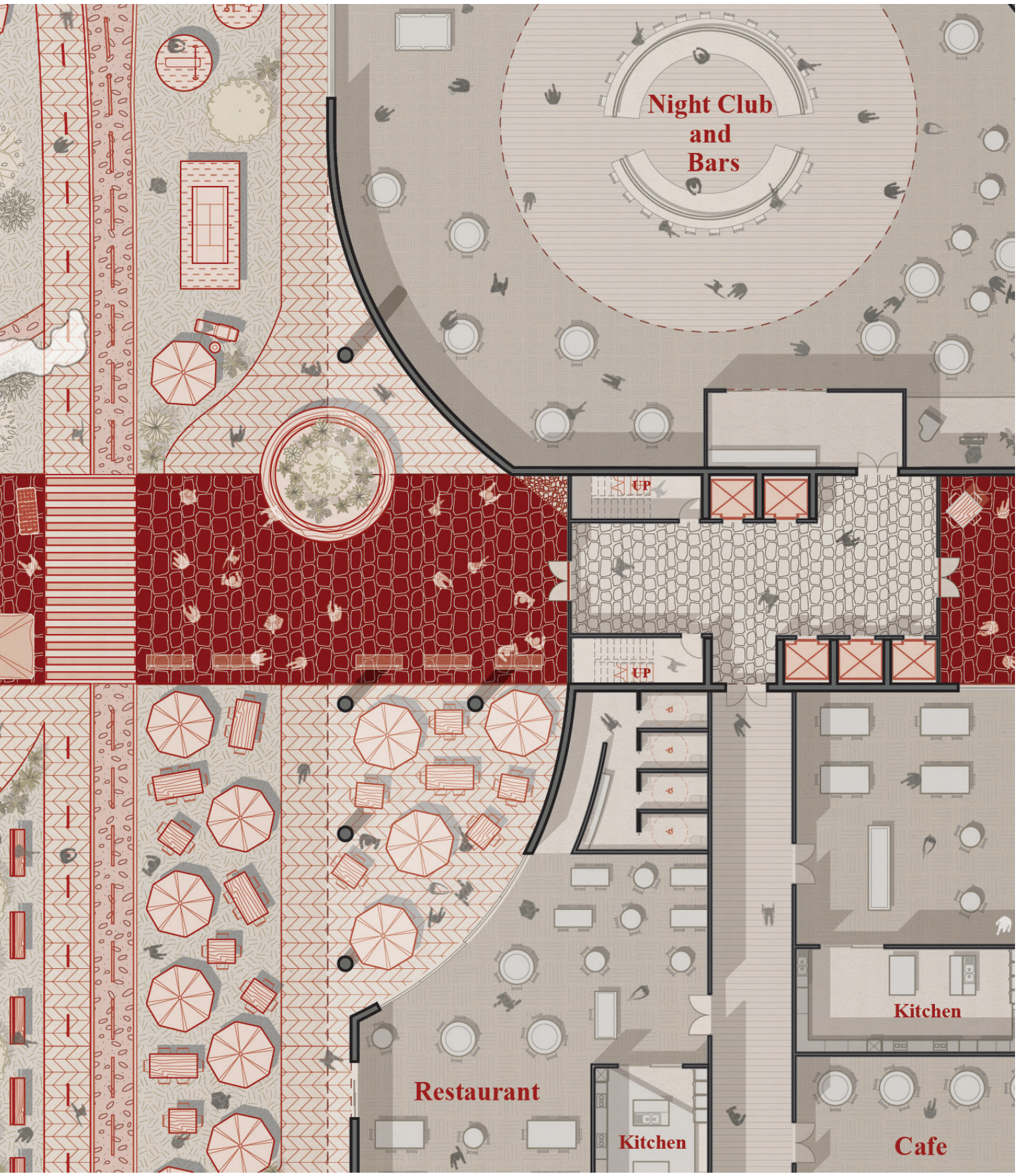
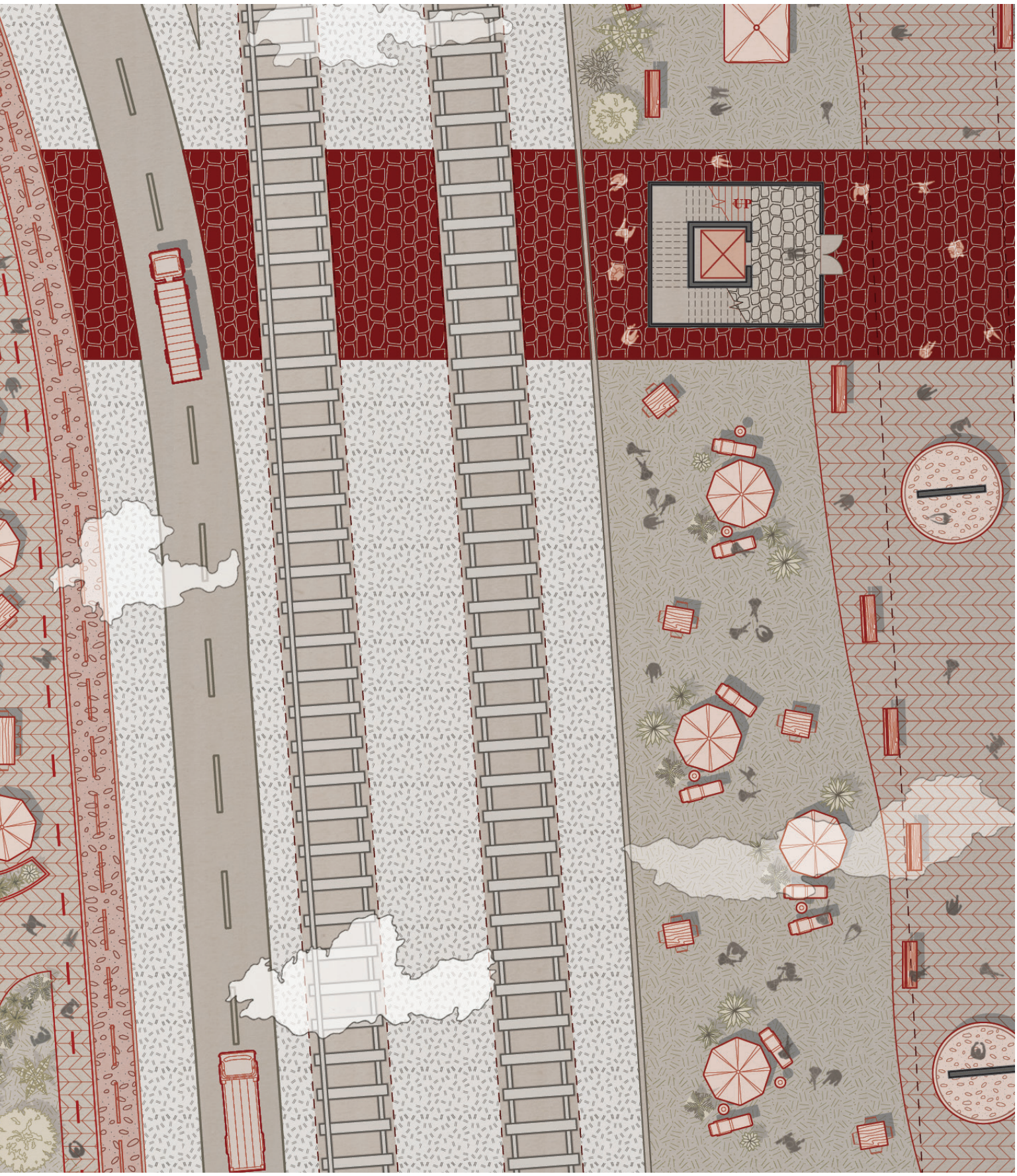

Night Club
and
Bars
UP
UP
Kitchen
Restaurant
Kitchen
Cafe



Fig. 4.67 : *Detailed view of the ground floor plan, highlighting the site's eastern side with all transportation routes.*

Render by Author


UP

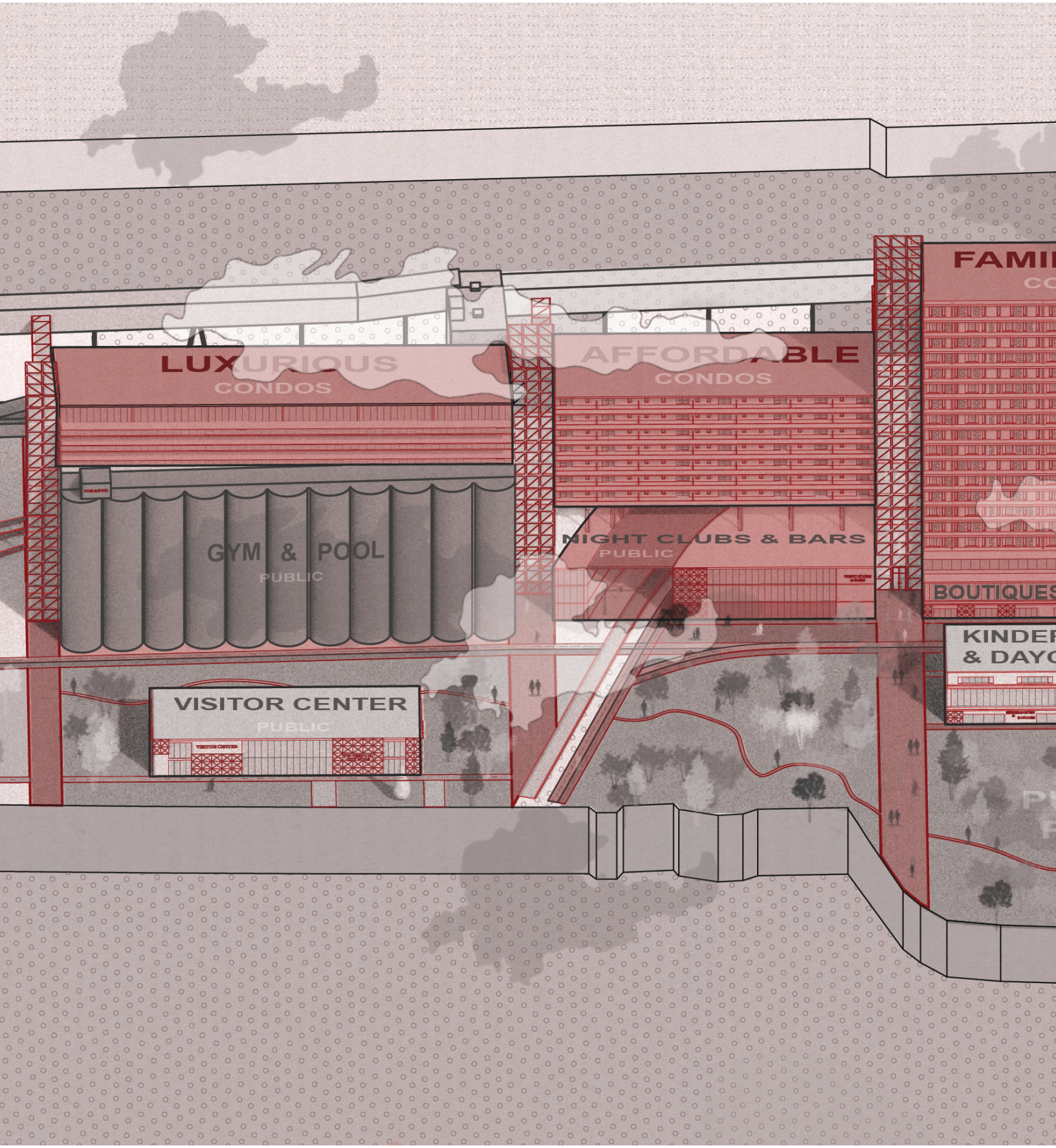
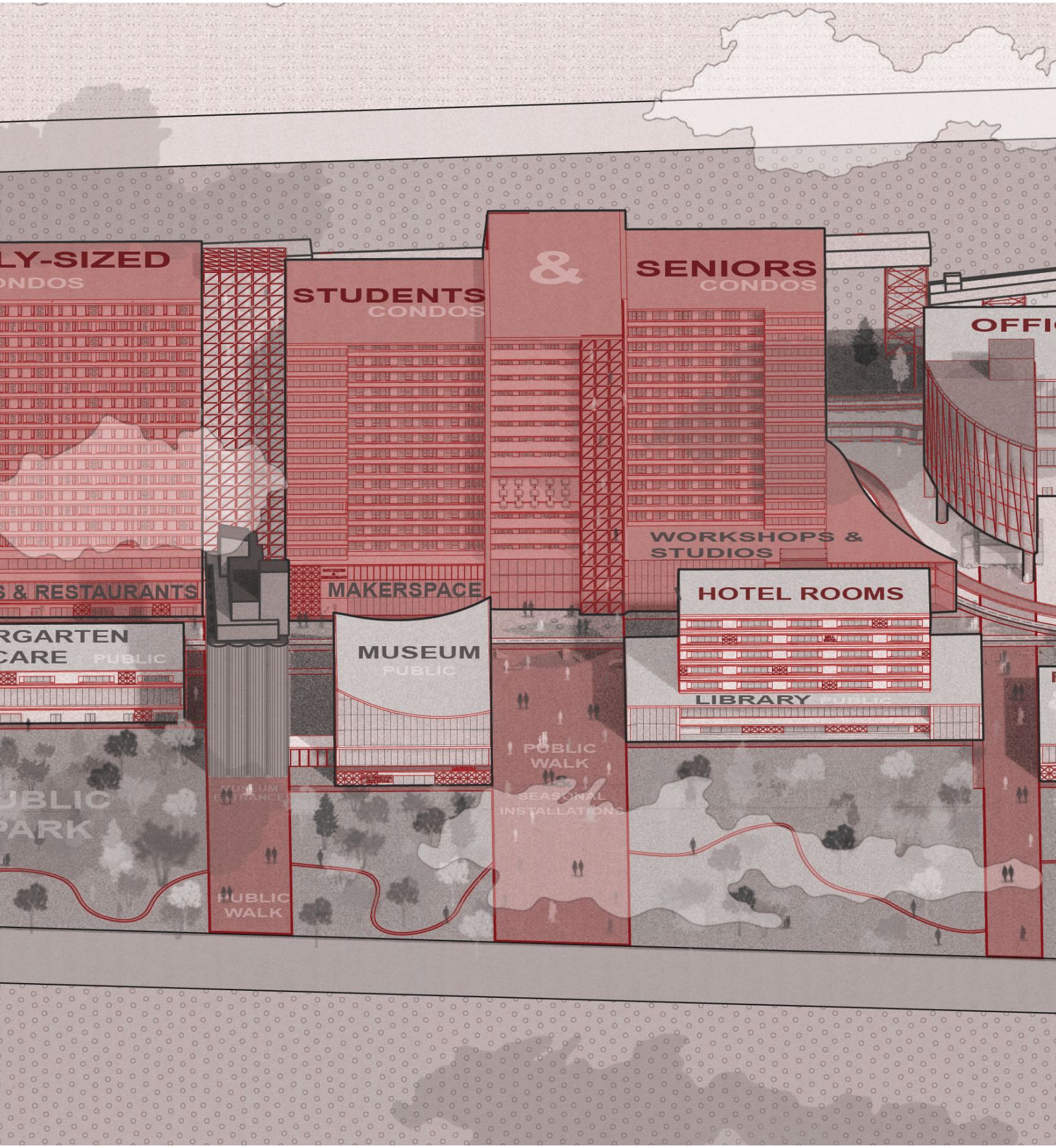


Fig. 4.68 : *Drawing showing the programs of each residential building in the Vertical City Mills*

Render by Author


LY-SIZED
ONDOS
STUDENTS
CONDOS
&
SENIORS
CONDOS
OFFI
WORKSHOPS &
STUDIOS
S & RESTAURANTS
MAKERSPACE
HOTEL ROOMS
RGARTEN
CARE
PUBLIC
MUSEUM
PUBLIC
LIBRARY
PUBLIC
PUBLIC
WALK
SEASONAL
INSTALLATIONS
UBLIC
PARK
MUSEUM
ENTRANCE
PUBLIC
WALK

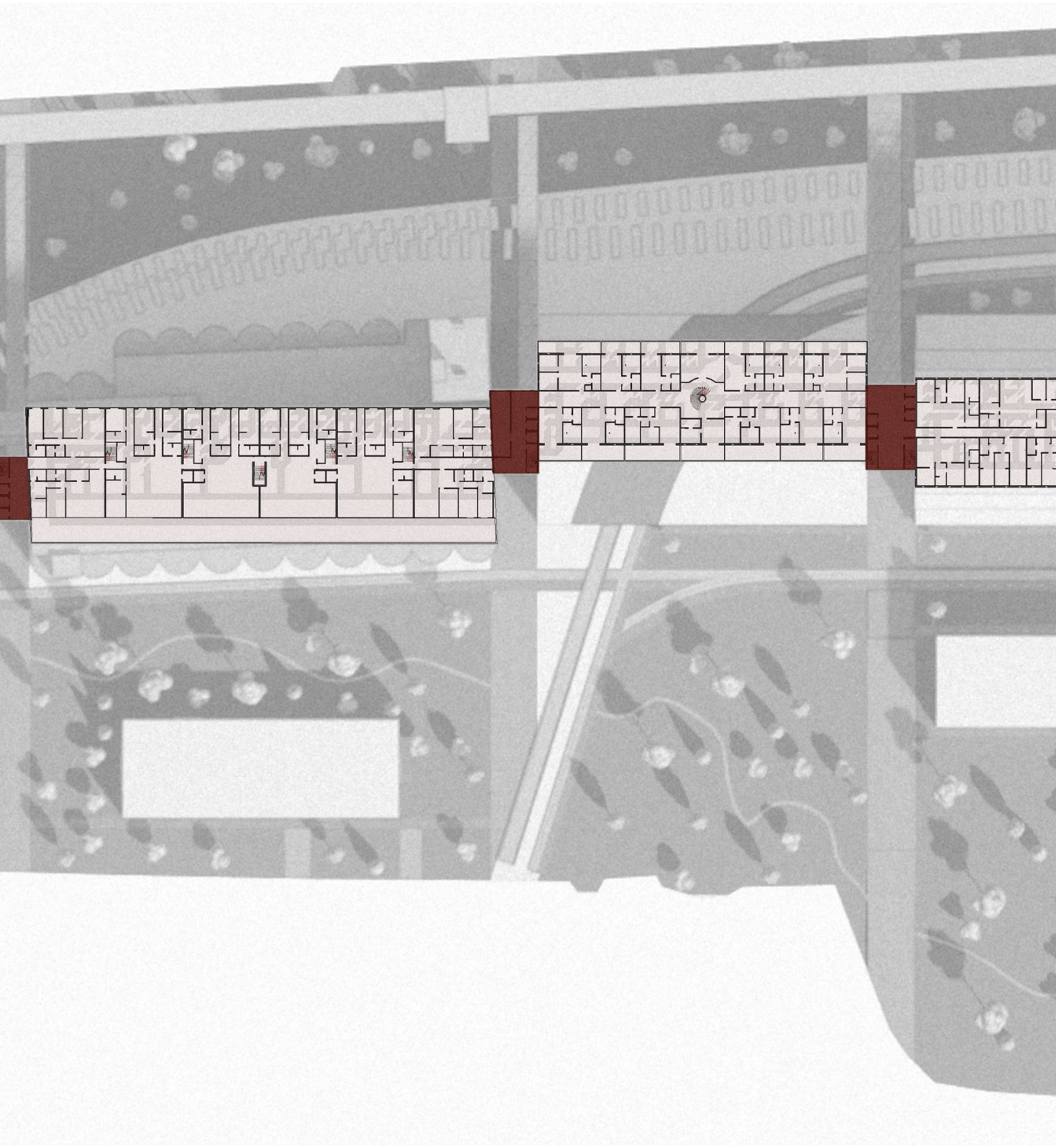


Fig. 4.69 : *Master Plan of the Residential Buildings - Level 6*

Render by Author



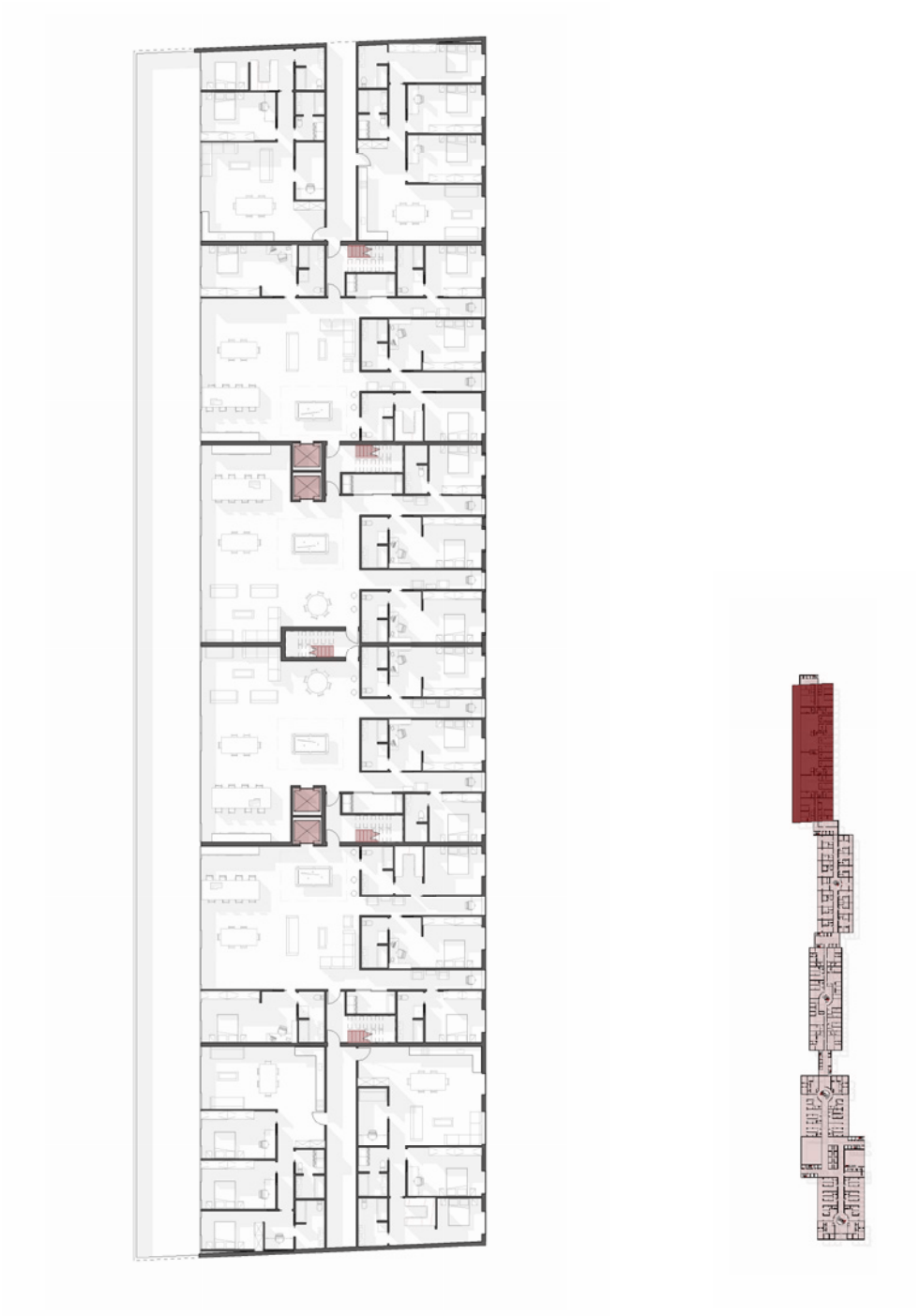


Fig. 4.70 : ***Luxurious Condos, Level 06 Plan***

Drawing by Author



Fig. 4.71 : *Luxurious Condos*

Drawing by Author



Fig. 4.72 : *6th Floor of the Luxurious Building*

Drawing by Author



Scale:
1:250

N

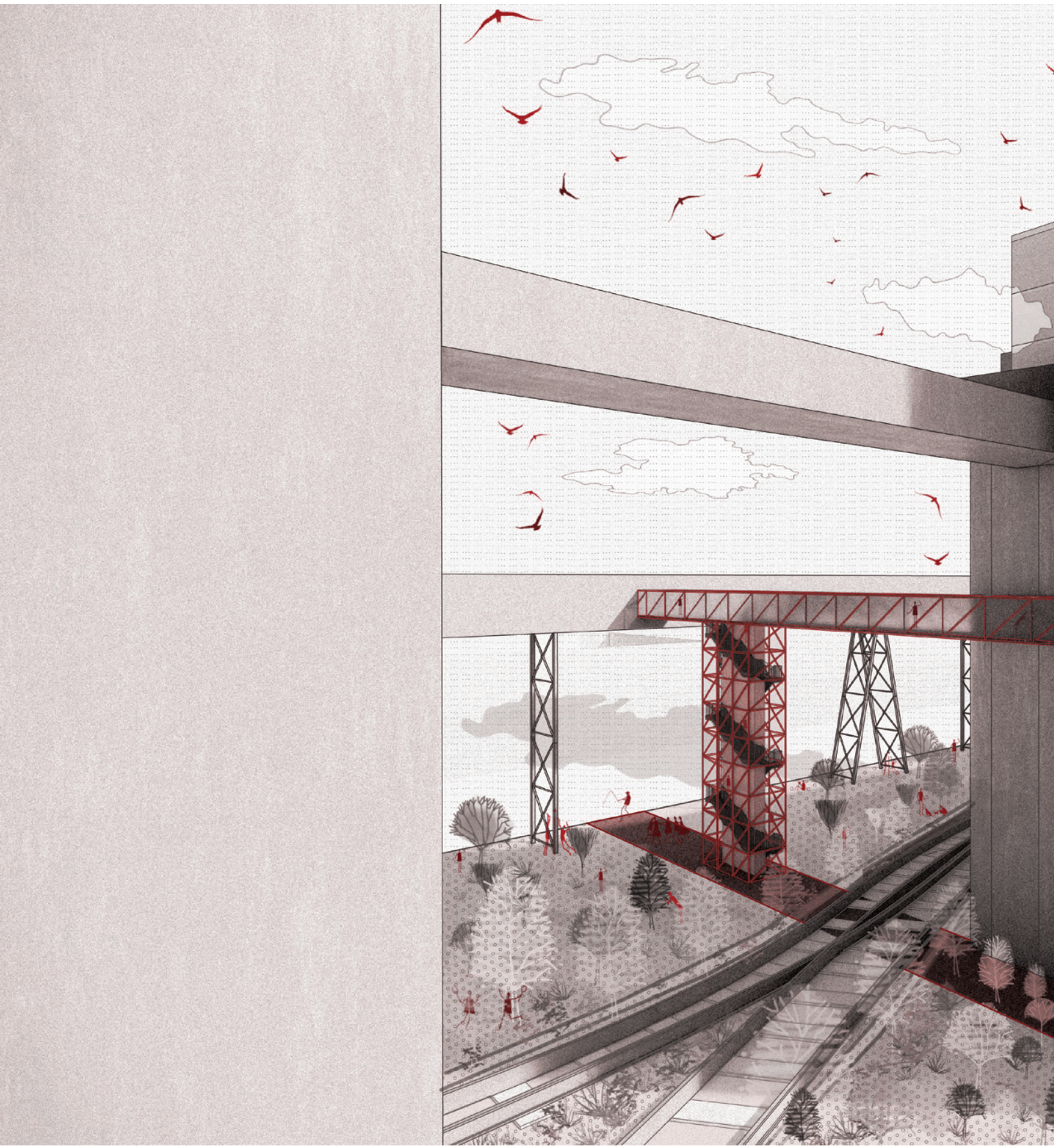
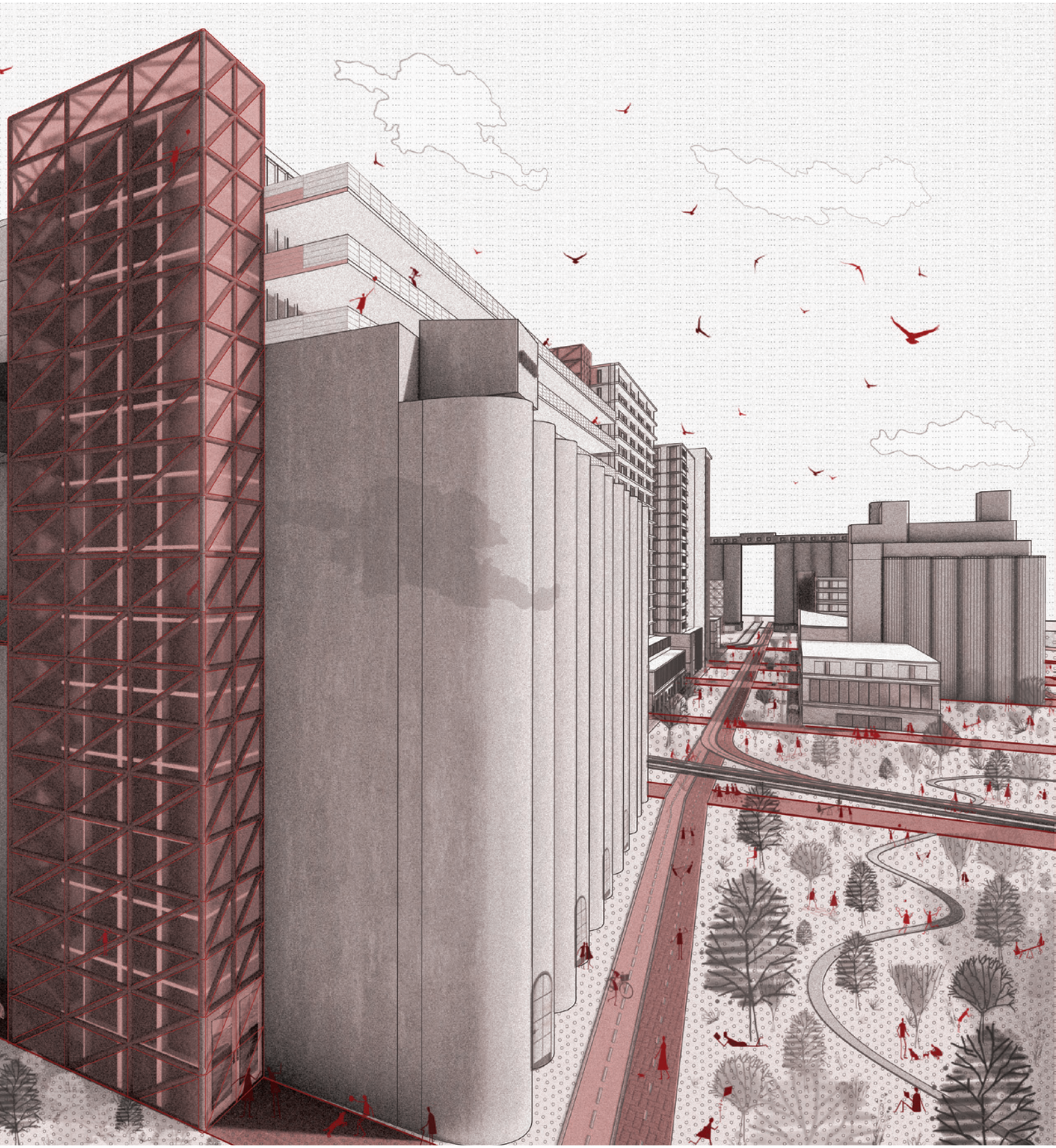


Fig. 4.73 : ***Exterior Renders of the Luxurious Condos***

Render by Author





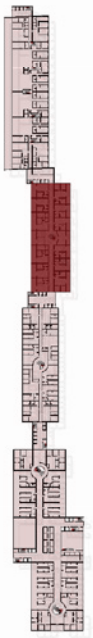


Fig. 4.74 : ***Affordable Condos, Level 06 Plan***

Drawing by Author

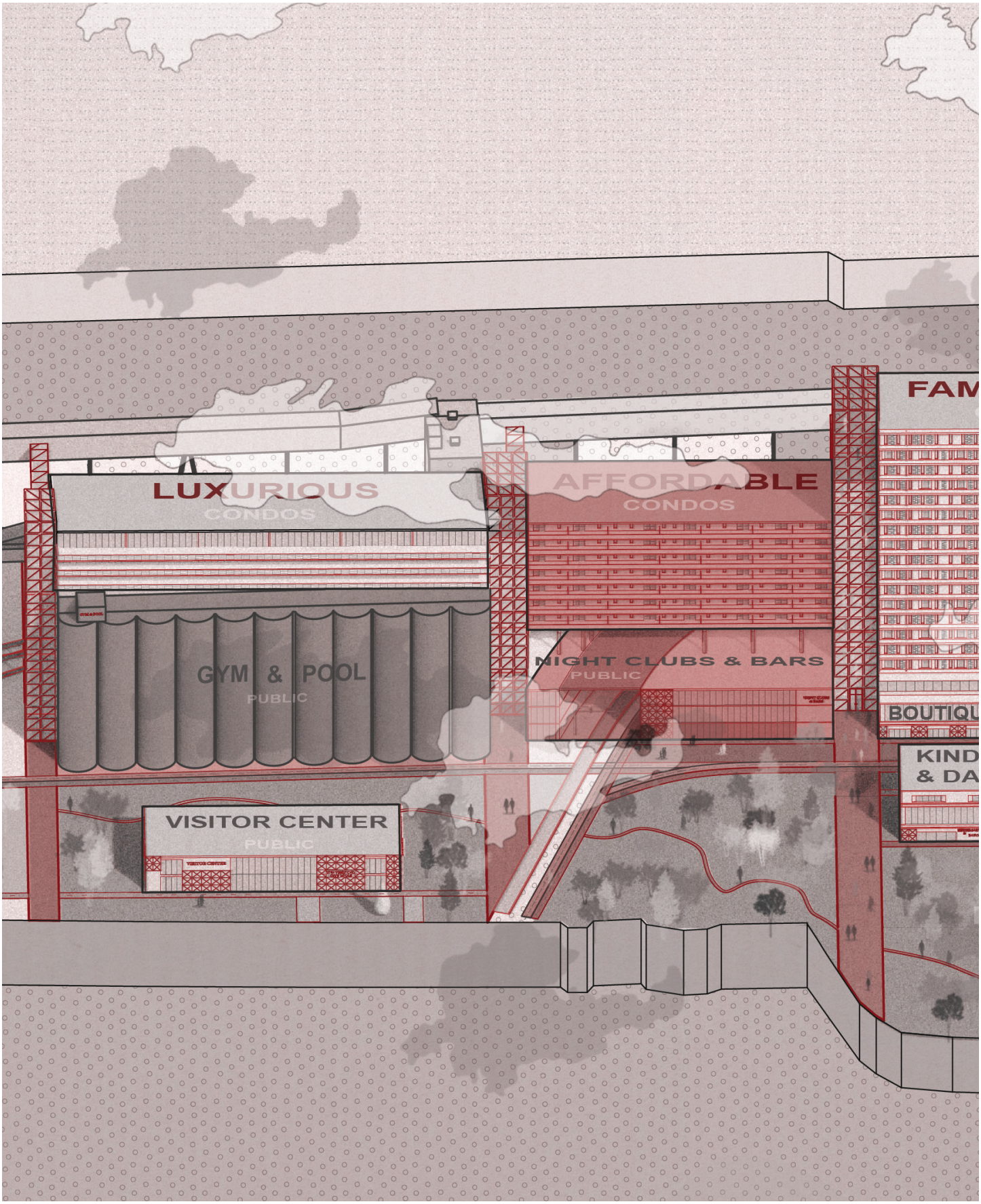


Fig. 4.75 : *Affordable Condos*

Drawing by Author



Fig. 4.76 : *6th Floor of the Affordable Condos*

Drawing by Author



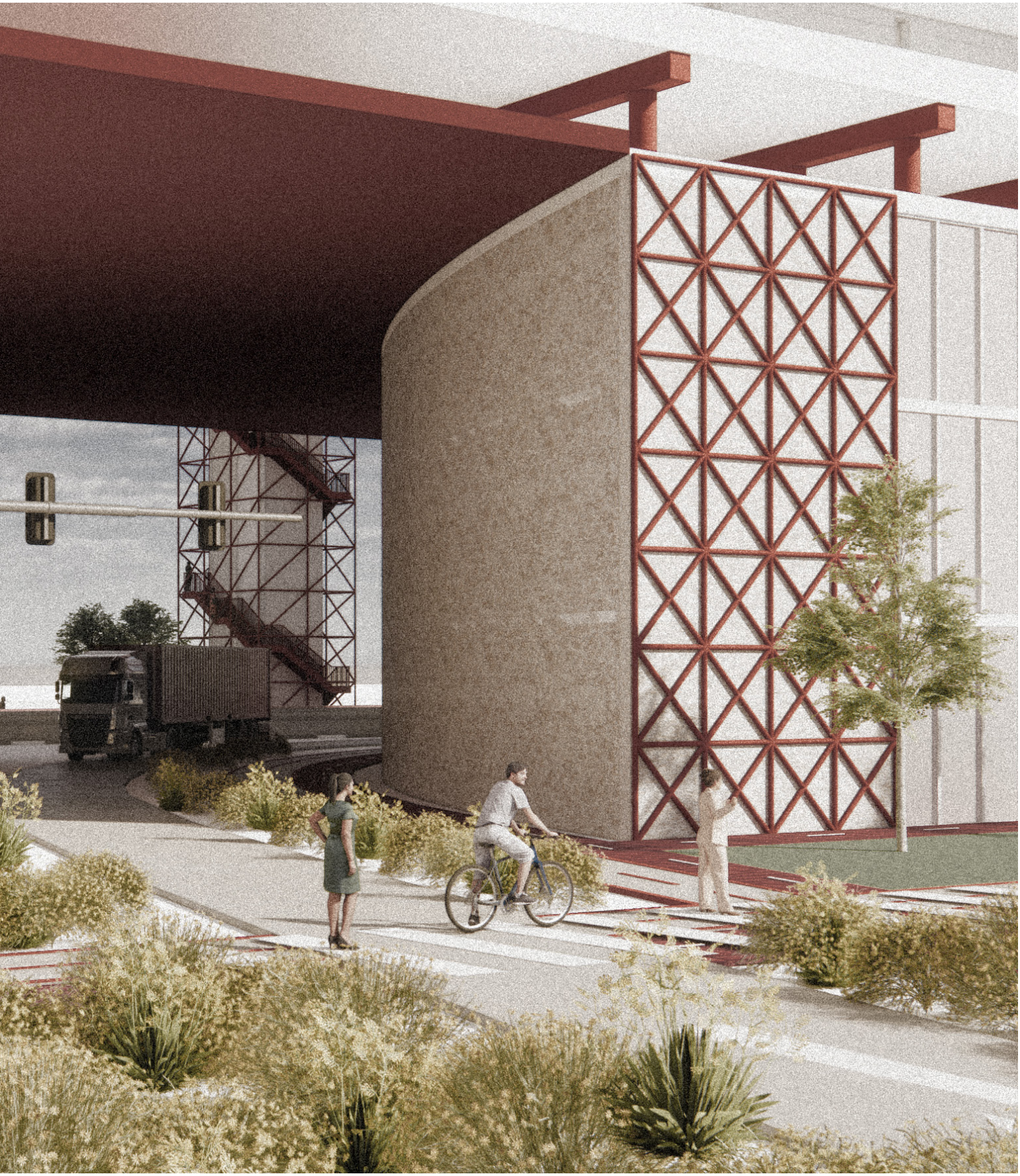
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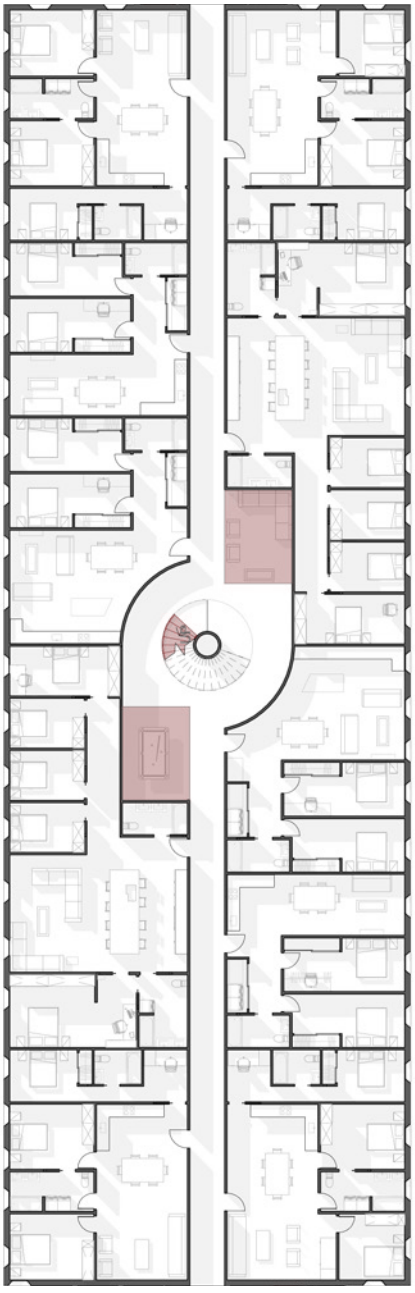
N



Fig. 4.77 : *Exterior Renders of the Affordable Building*

Render by Author





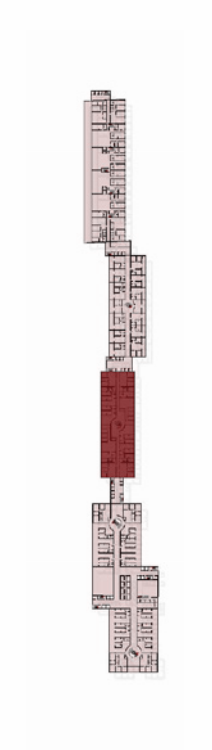


Fig. 4.78 : ***Family-Sized Condos, Level 06 Plan***

Drawing by Author

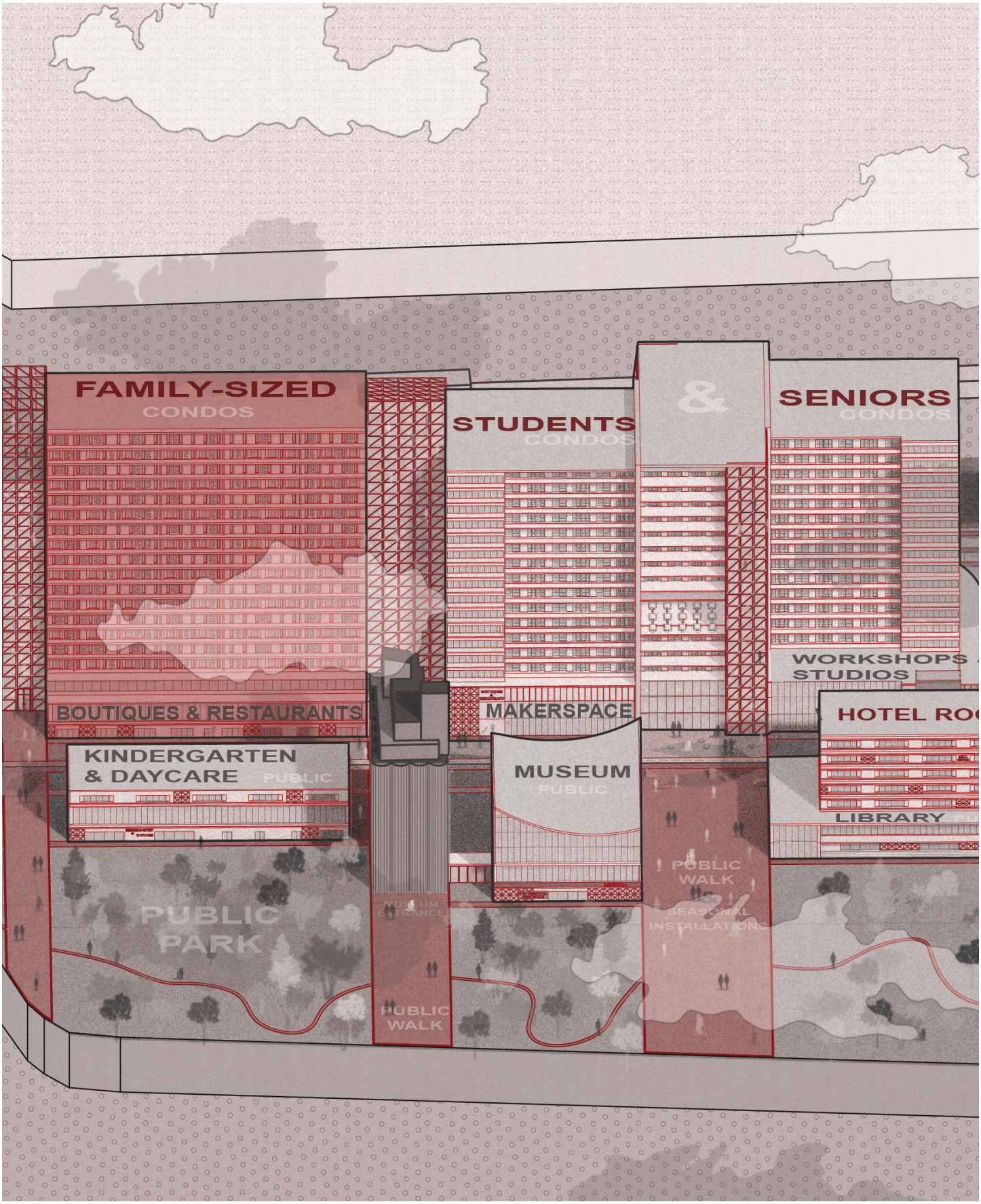


Fig. 4.79 : ***Family-Sized Condos***

Drawing by Author



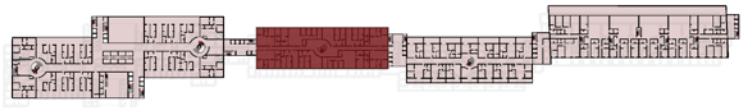


Fig. 4.80 : *6th Floor of the Family-Sized Condos*

Drawing by Author



Scale:
1:250

N



Fig. 4.81 : ***Exterior Renders of the Family-Sized Condos***

Render by Author


FARINE
FIVE ROSES

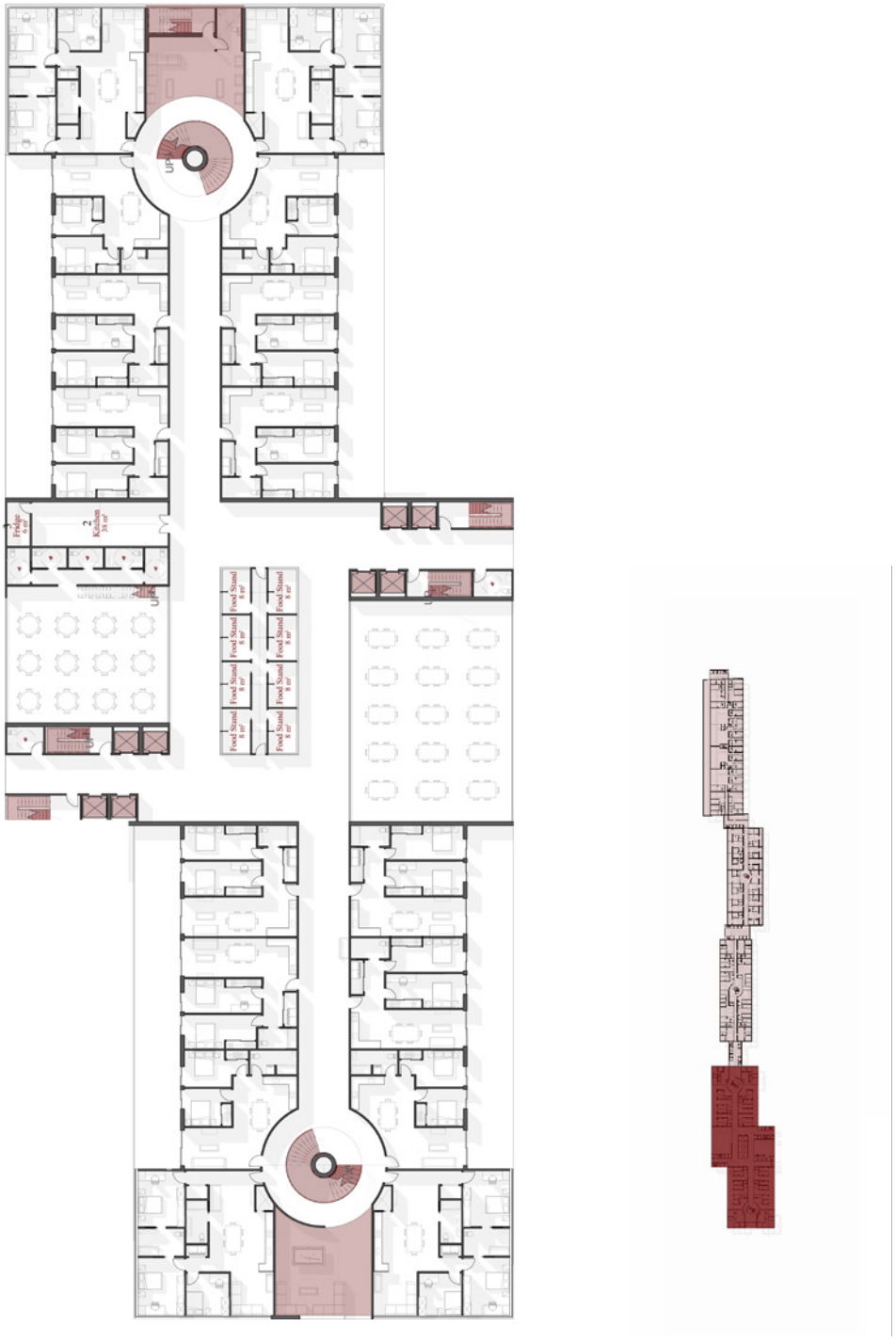


Fig. 4.82 : ***Students and Seniors Condos, Level 06 Plan***

Drawing by Author

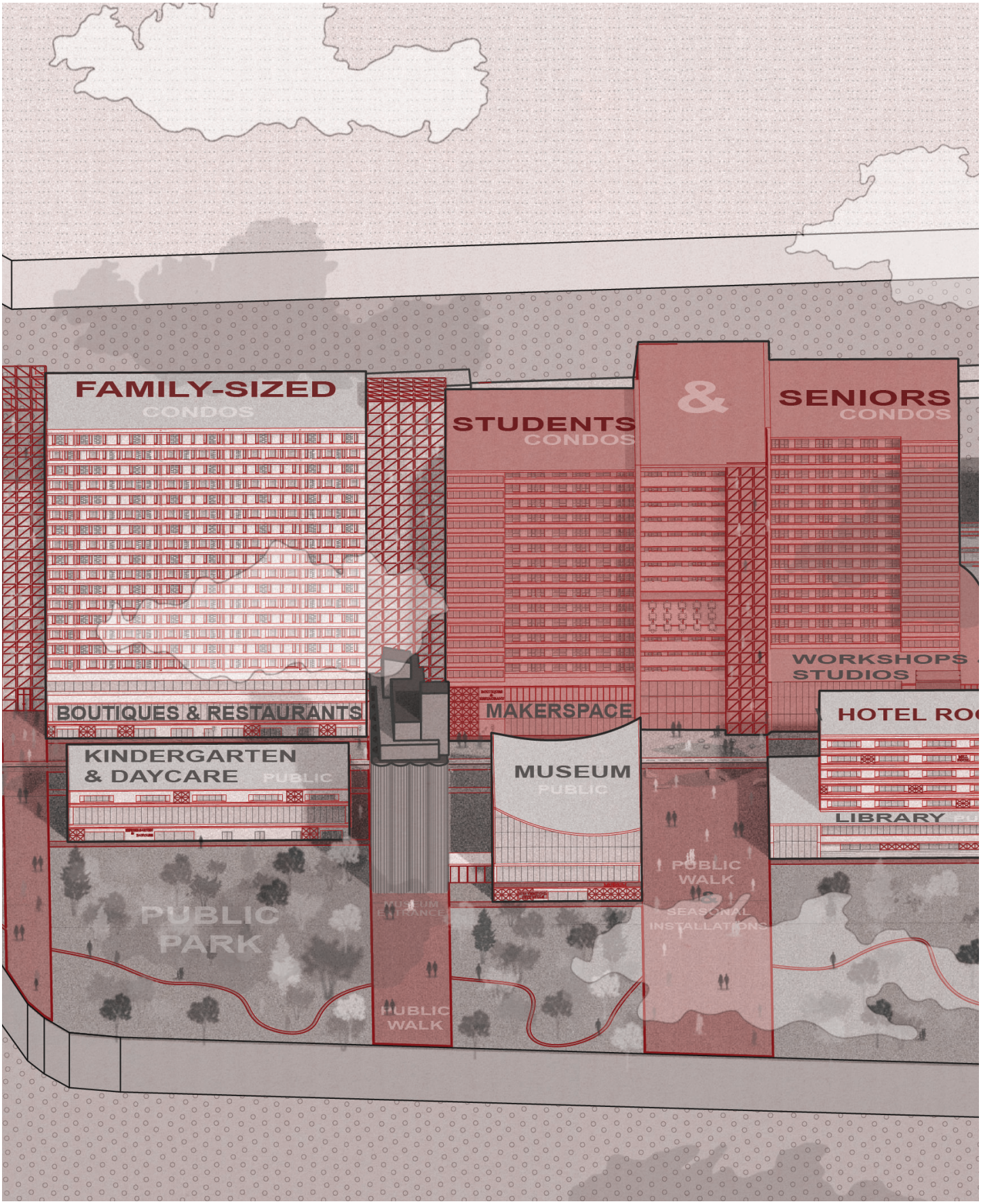


Fig. 4.83 : *Students and Seniors Condos*

Drawing by Author



Fig. 4.84 : *6th Floor of the Housing and Seniors Condos*

Drawing by Author


3
Fridge
6 m²
2
Kitchen
38 m²
UP
UP
UP
Food Stand
8 m²
Food Stand
8 m²
Food Stand
8 m²
Food Stand
8 m²
Food Stand
8 m²
Food Stand
8 m²
Food Stand
8 m²
Food Stand
8 m²
UP

Scale:
1:300

N



Fig. 4.85 : *Exterior Renders of the Housing and Seniors Condos*

Render by Author



Circular Stairs

The circular staircases are a recurring feature in the proposed building plan, serving as a key vertical connection. Each staircase signifies the presence of a common area, encouraging movement and interaction. Additionally, the circular form of these stairs evokes the shape of silos, reinforcing the industrial heritage while encouraging social engagement among neighbors.



Fig. 4.86 : *Circular stairs are featured in most housing buildings at Vertical City Mills to encourage interaction among residents.*

Collage by Author

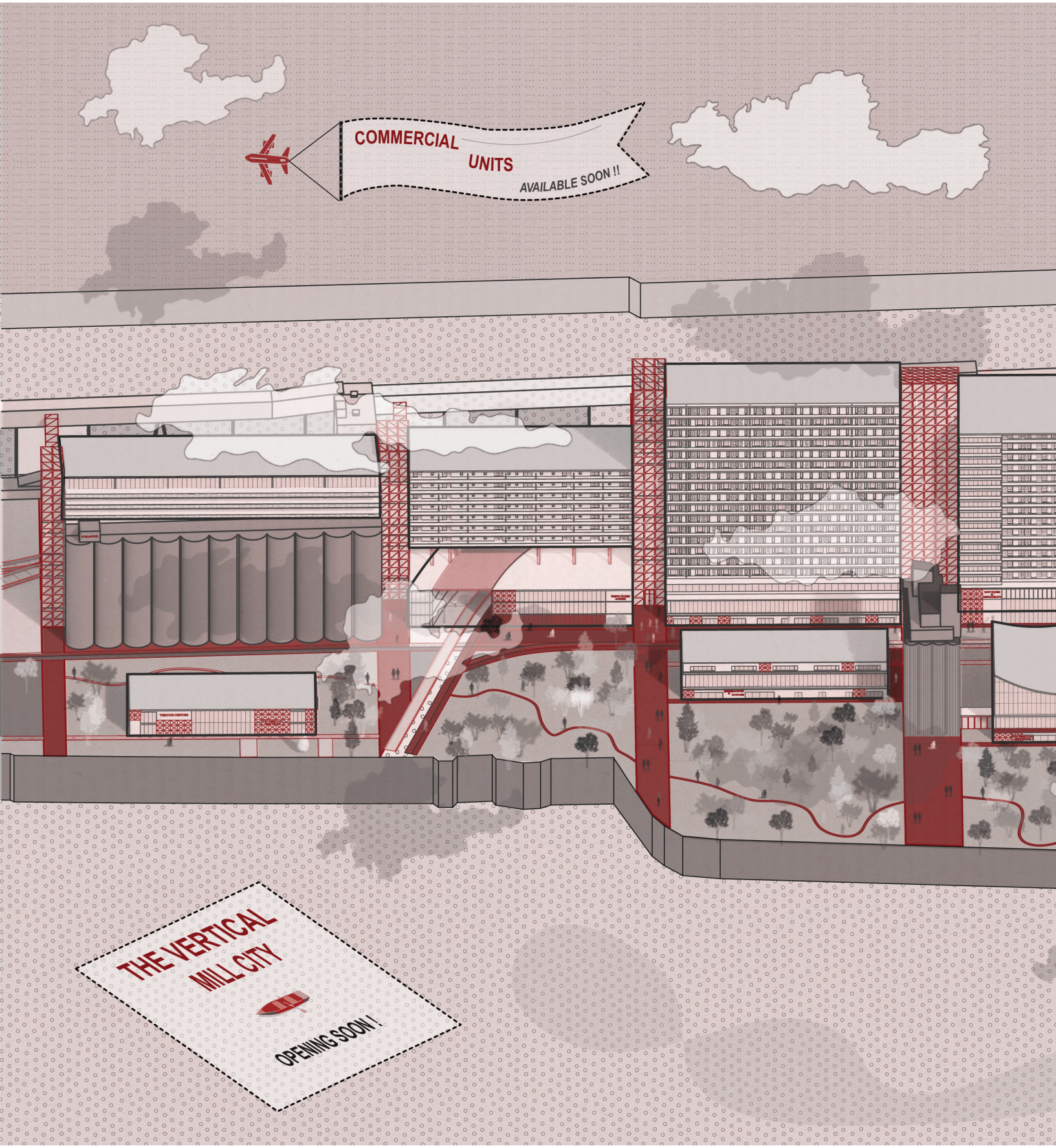
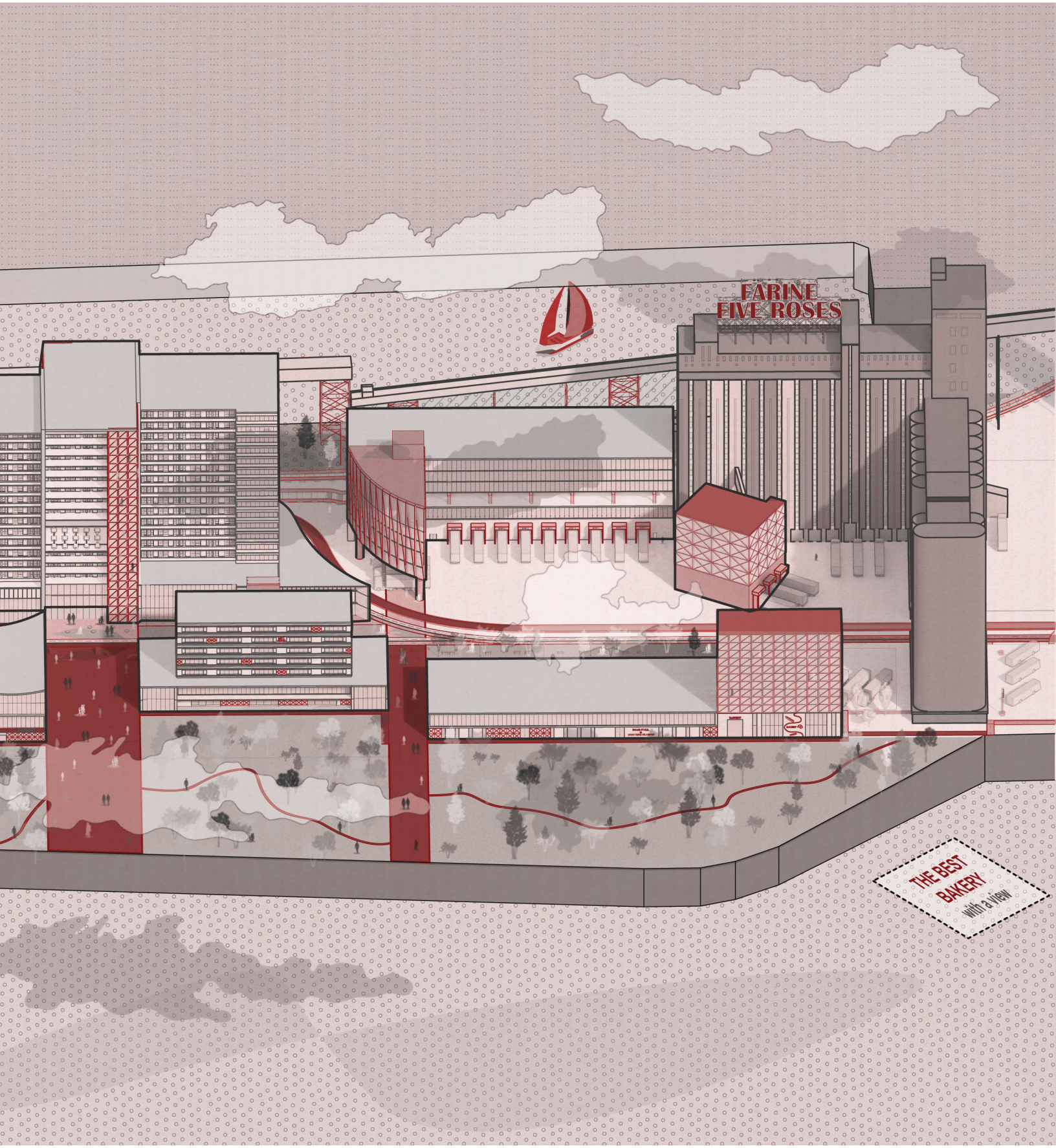


Fig. 4.87 : *Drawing showing Vertical City Mills redevelopment plan facing the West Side*

Render by Author


FARINE
FIVE ROSES
THE BEST
BAKERY
with a view

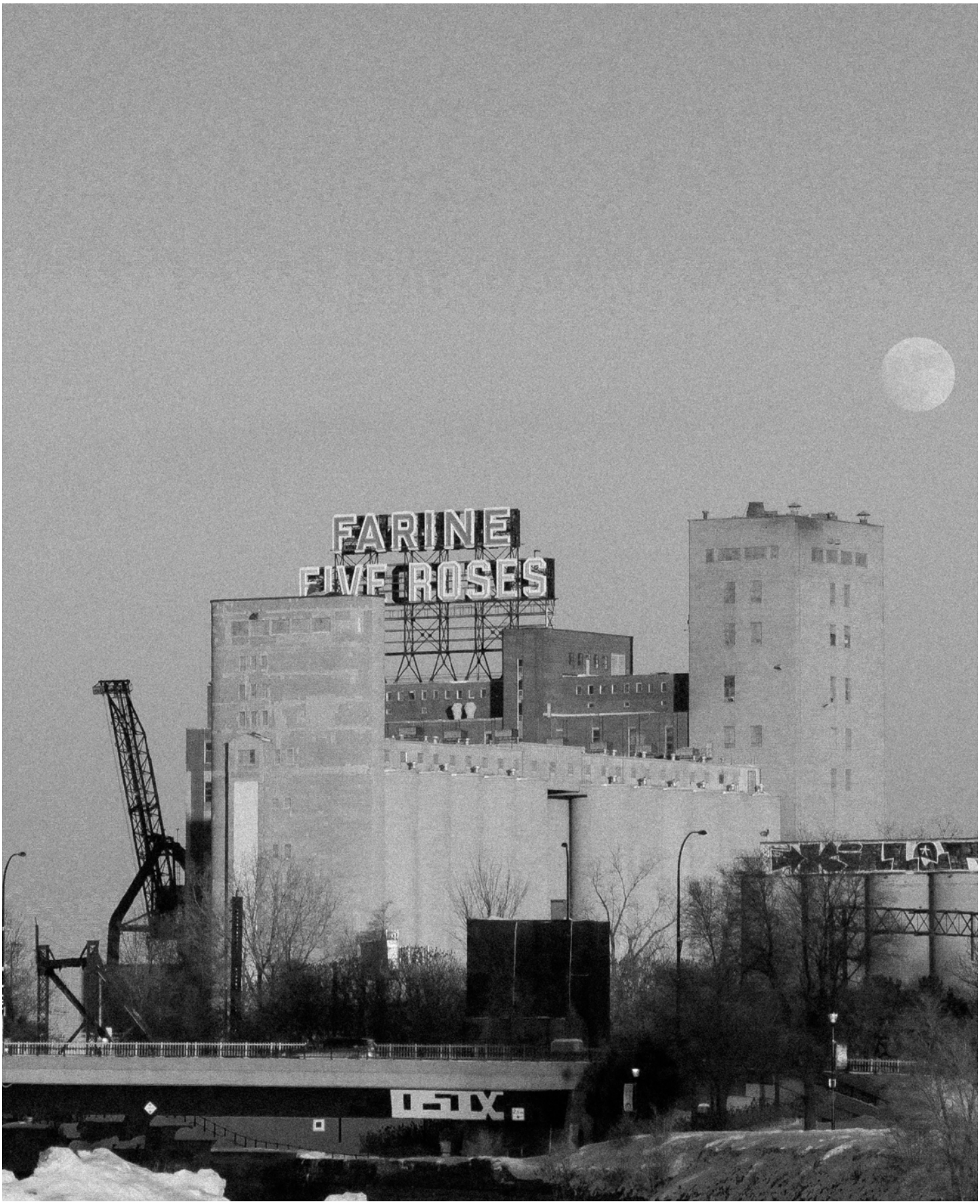


Fig. 4.88 : ***Farine Five Roses and Canal Lachine***

Image by Laure Bardou, 2017

4.10.1 Continue the Canal Lachine Multipurpose path

The red pavement, which is connecting the ground floor of the east and west side as well as the new road are created only for soft mobility. Both paths will help continue the Multipurpose path along Lachine Canal. The main road that crosses the site from north to south is designed to promote walking, cycling, skateboarding, running and roller skating.

Montreal is also known for its many festivals and pedestrian street. It is “one of the most active summer events calendars in the world. Montréal is the place to be for fans of performance, art, theatre, dance, music, comedy and film every summer” (Hamilton 2017). This red pavement will allow space for this season festival and market installation to take place on the site.

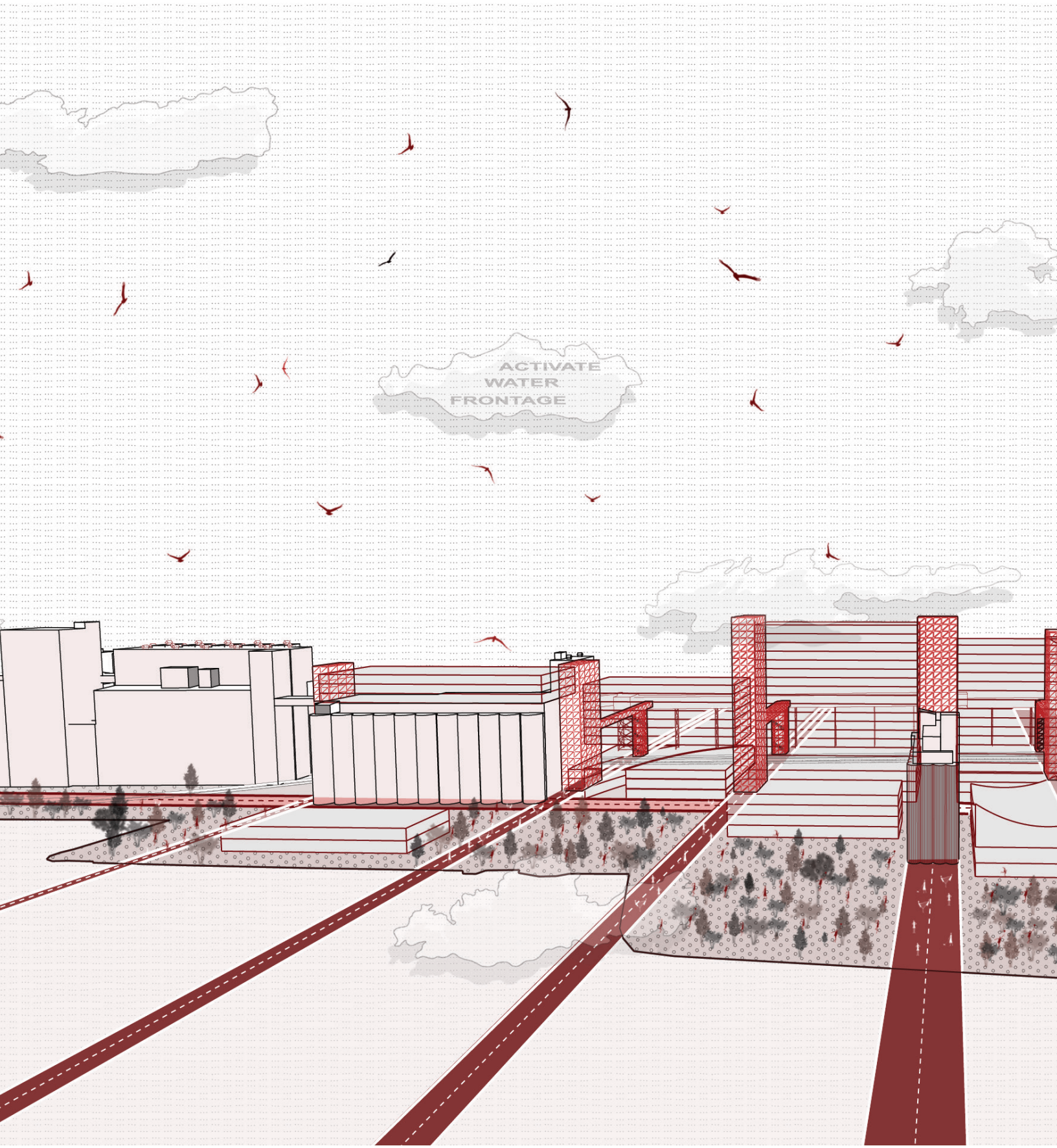
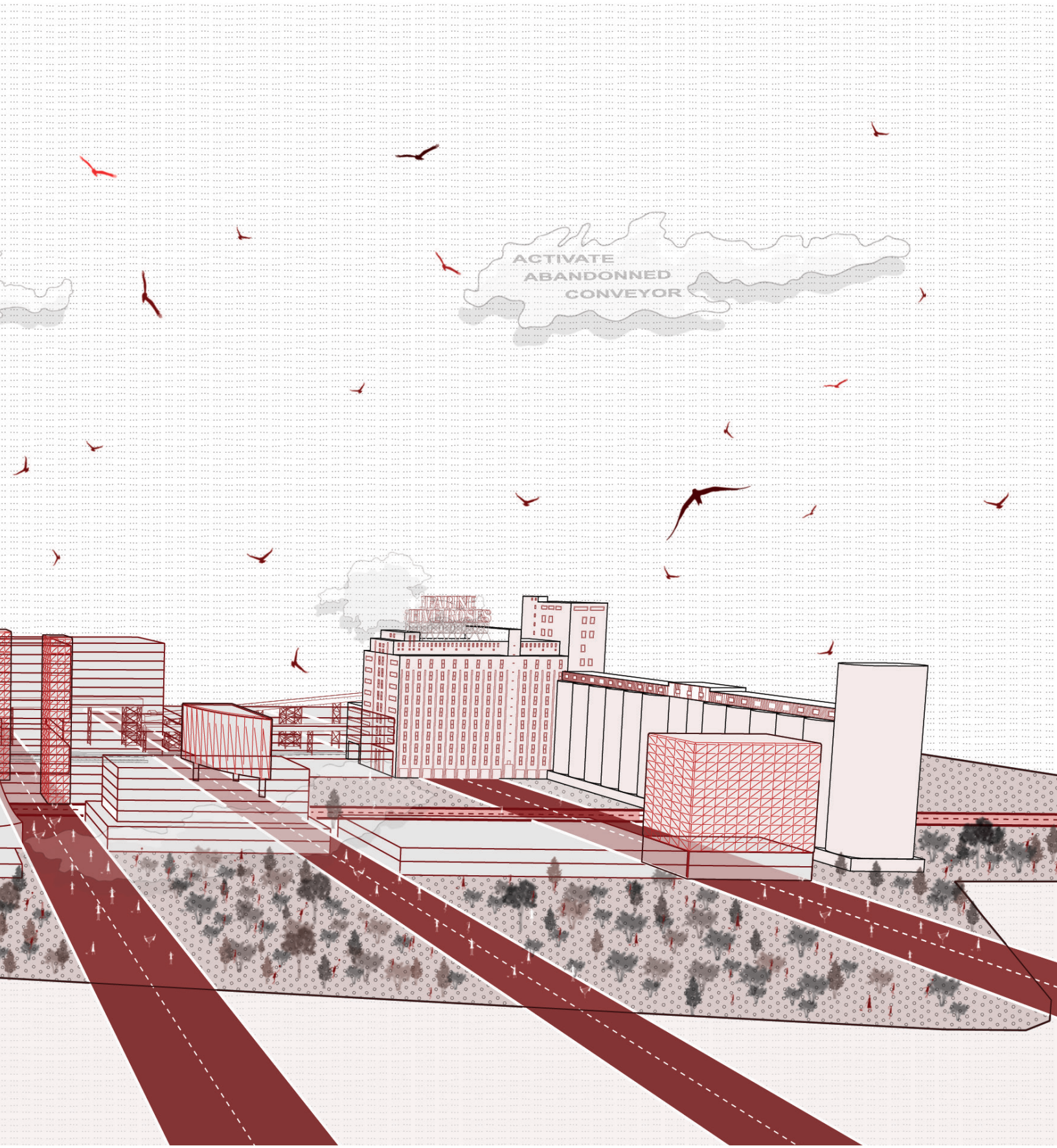


Fig. 4.89 : *The red pavement connects the ground floor of the east and west side*

Drawing by Author


ACTIVATE
ABANDONNED
CONVEYOR

4.10.2 Green space

The proposed plan preserves most of the existing green spaces and extends these green zones to the east, where the conveyors are located. This extension supports the city's 2050 goal of adding 70 km of green corridors (Ville de Montréal and Service de l'urbanisme et de la mobilité 2024, 20).

The red pavement, made from recycled bricks salvaged from future demolished buildings on the Bridge Bonaventure site, will improve soil retention and maximize water drainage, ensuring the plants' long-term health. Gaps between each brick will allow grass to grow and rainwater to drain effectively.



Fig. 4.90 : *Image of the Lanscape taking over the Grain Elevators in Buffalo*

Image by Author

4.10.3 Materiality

For the materials chosen for the site, I followed those traditionally used in the construction of flour mills and their grain elevators.

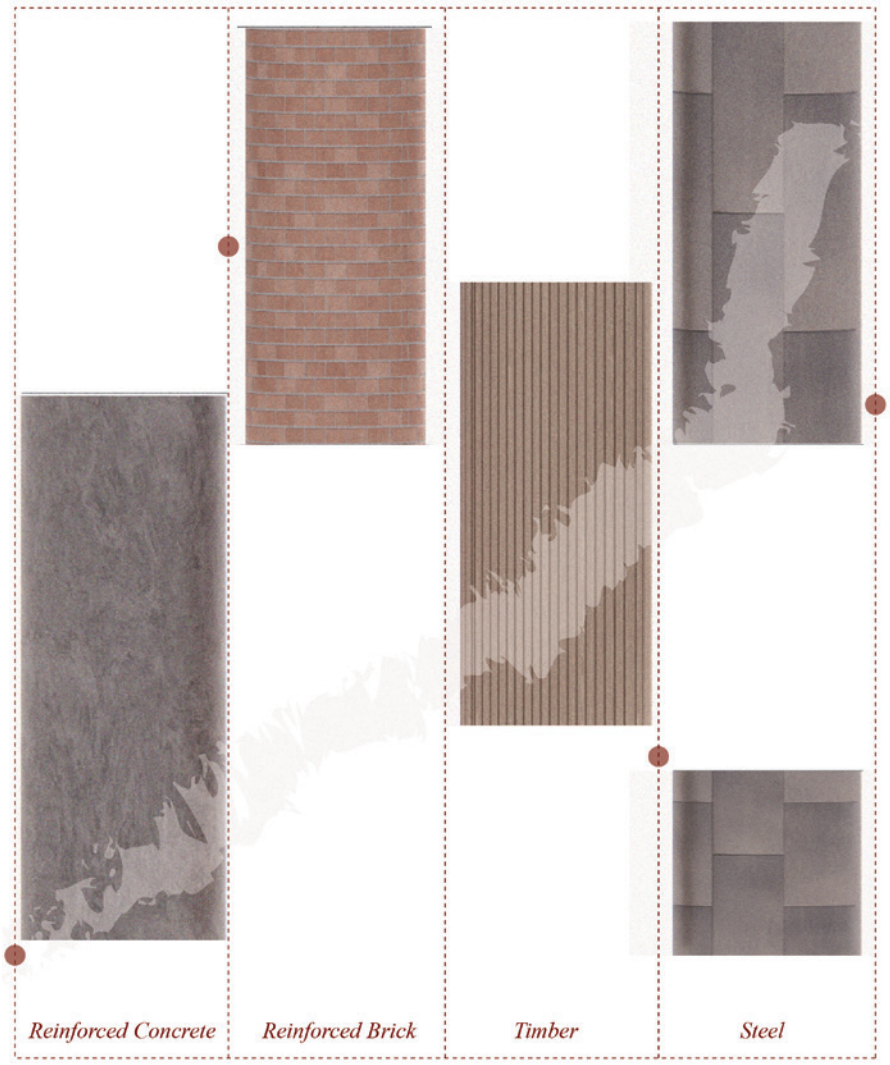


Fig. 4.91 : ***Materials used for proposed urban redevelopment***

Drawing by Author



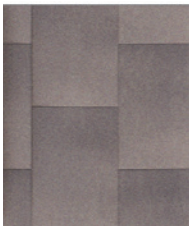
White Brick: ***For commercial facade***
Red Recycled Bricl: ***For pavement and landscape structures***



Reinforced Concrete: ***For structural core of the buildings and crains vertical circulation***



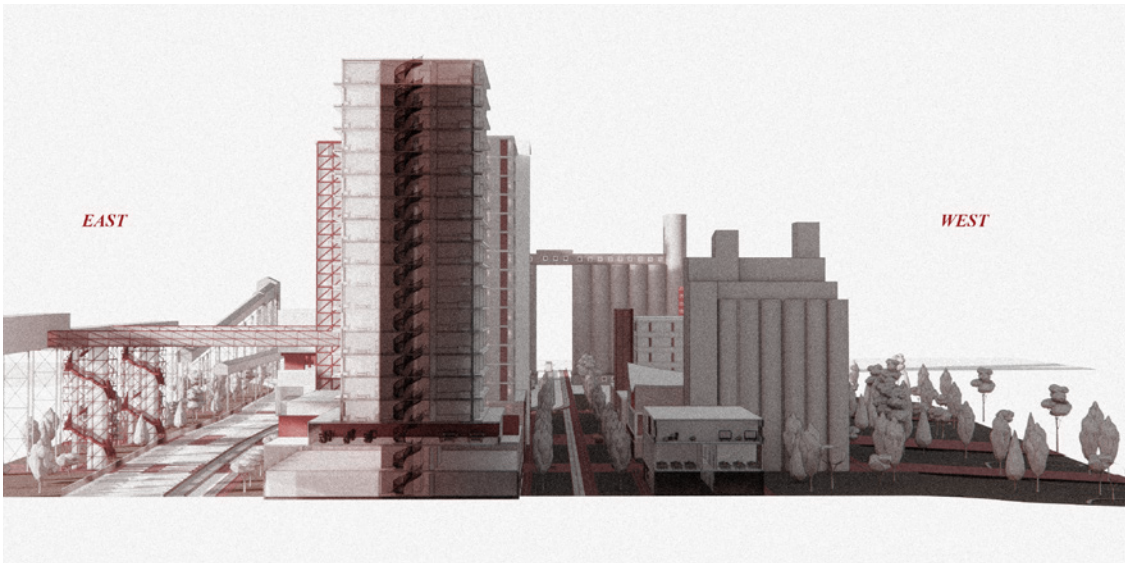
Structural Timber: ***The buildings plan was planned to be rectangular forms with a small grid structures which could allow hybrid construction with concrete and timber.***



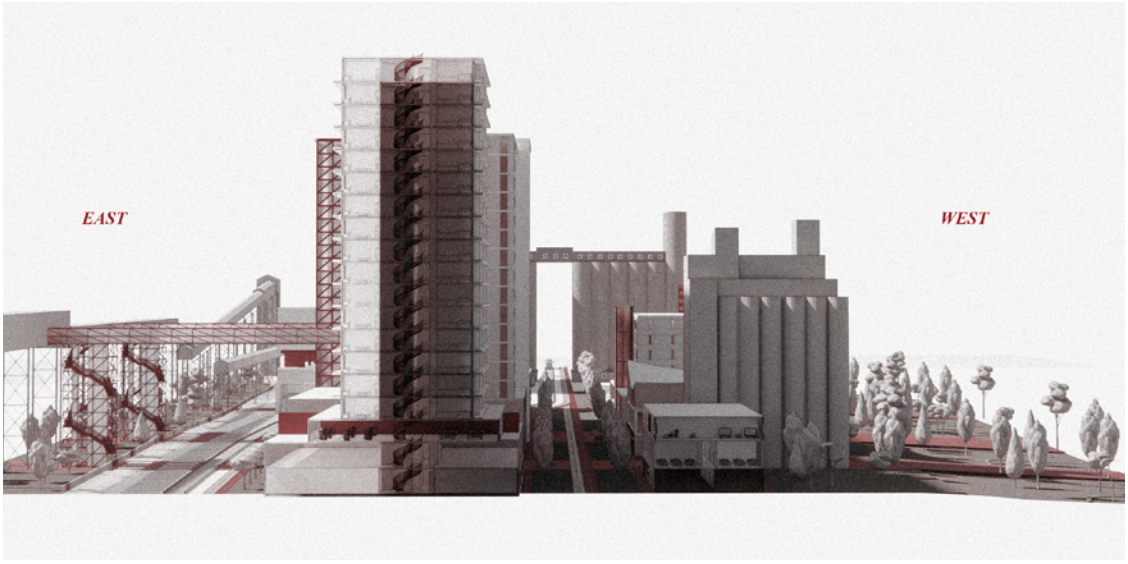
Red Steel: ***The main vertical circulation towers are all built with steel, to bring a lighter visual effect and contrast with the concrete of the silos. At the same time, steel recalls the machine atmosphere of the site.***

4.10.4 Lights & Shadows

This series of photos analyzes the impact of the proposed building height and width on the site's shadows.



6 AM

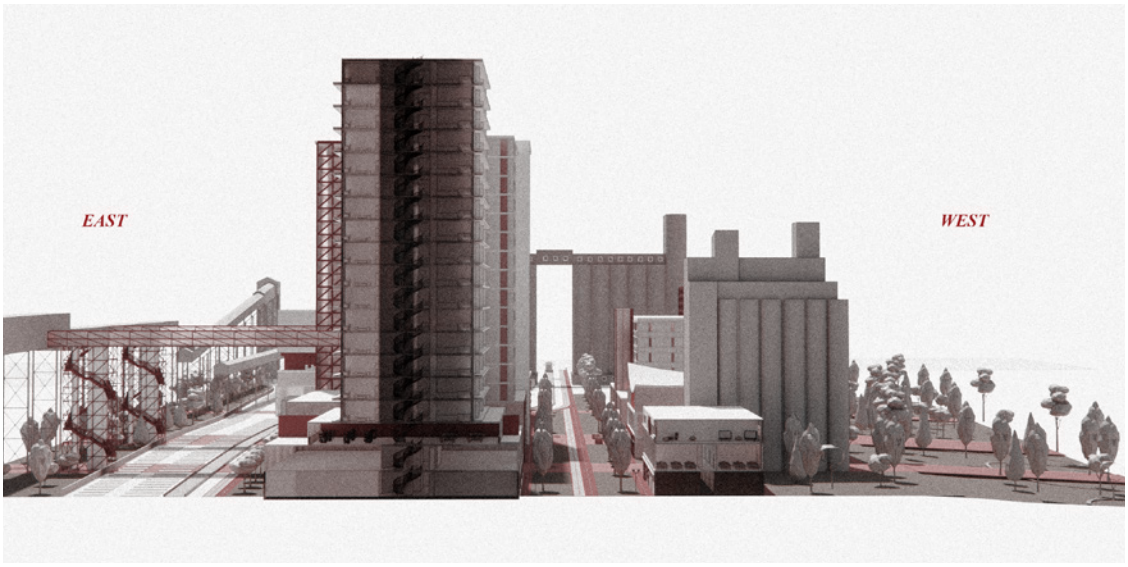


9 AM

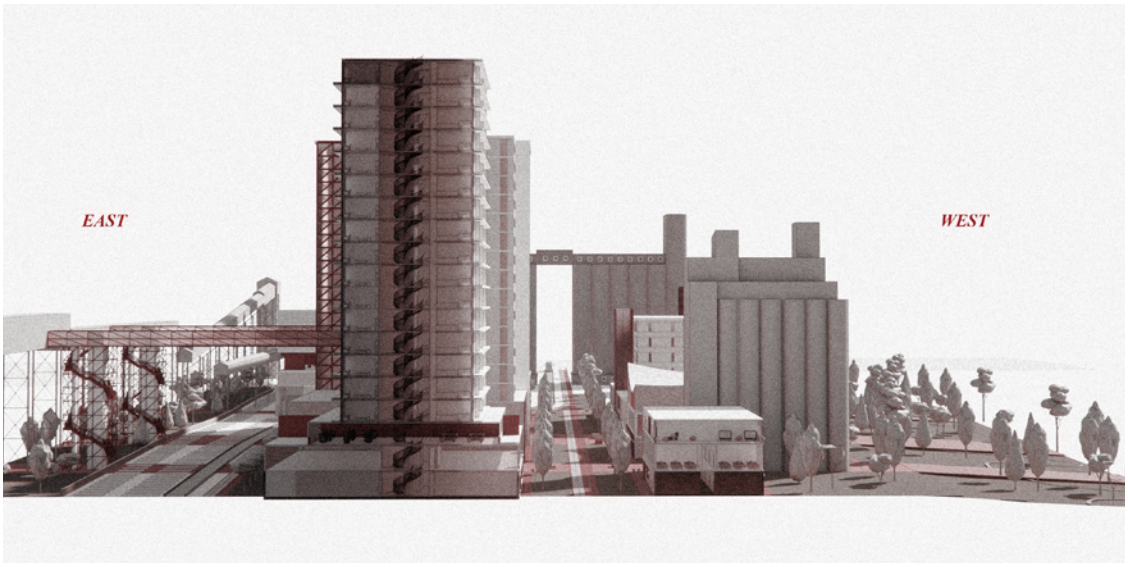
Fig. 4.92 : Lights & Shadows renders

Renders by Author

12 PM



3 PM



6 PM

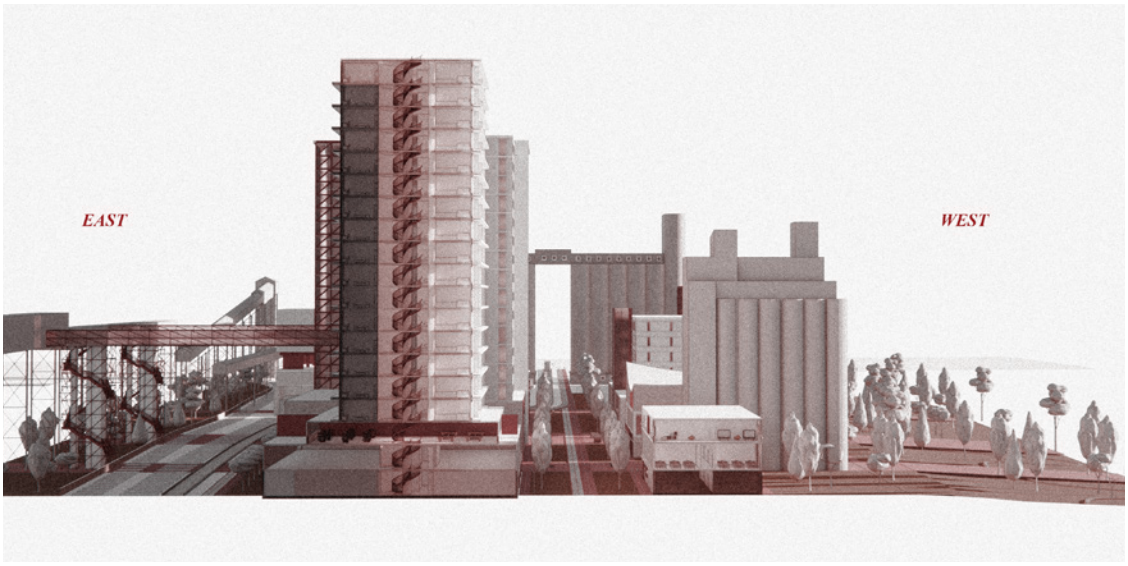




Fig. 4.93 : ***Farine Five Roses and the Existing Conveyors***

Image by Miville Tremblay, 2016

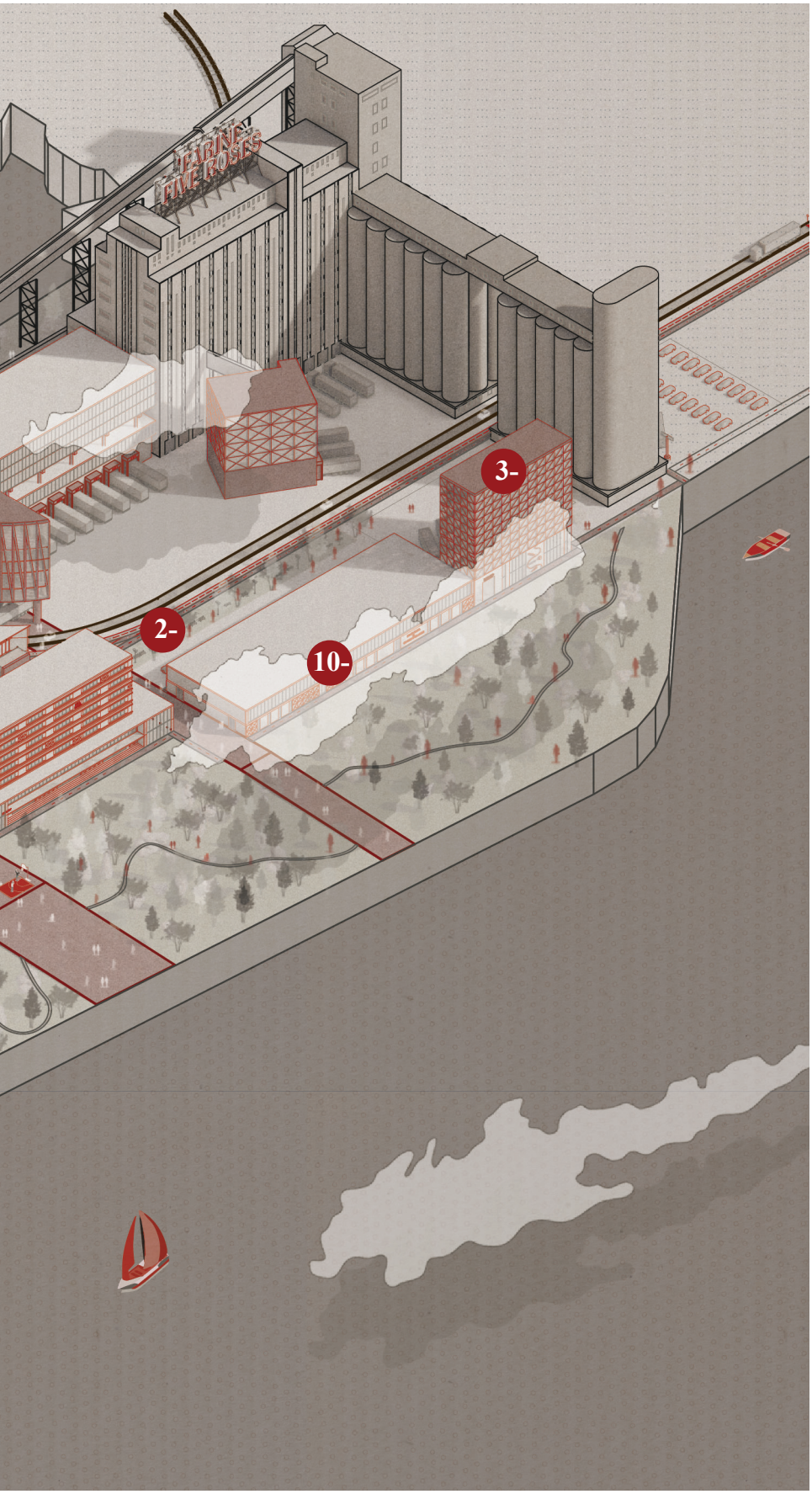
4.11 The Vertical City Mills and Montréal 2050 vision.

To conclude this chapter, the following drawings will show that the 10 points stated in The City Vision: imagining the Montreal of 2050 handbook are answered through this urban proposal plan:



Fig. 4.94 : *Vertical City Mills and Montréal 2050 vision - "Fast forward to 2050: The metropolis"*

Renders by Author text sourced Online



1- “Green streets are living spaces that lend themselves to free play and encourage activity.
They help fight isolation by encouraging social activities such as gardening.” (Ville de Montréal 2022, 35)

2- “Bicycle facilities allow anyone, regardless of age or ability, to travel by bike in a safe and enjoyable manner. Cycling is an easy way to get around any neighbourhood, in any season!” (Ville de Montréal 2022, 35)

3- “The circular economy is taking hold in neighbourhoods and helping to reduce transportation needs. In the morning, a rooftop greenhouse supplies fresh fruit and vegetables to nearby restaurants and businesses, and in the afternoon, it hosts a workshop on urban agriculture for local students.” (Ville de Montréal 2022, 35)

4- “Solutions for combating and adapting to climate change are developed and integrated into buildings while preserving their heritage qualities.” (Ville de Montréal 2022, 35)

5- “New buildings and extra floors are added to the neighbourhood in a way that creates a pleasing environment” (Ville de Montréal 2022, 35)

6- “Cargo bikes are used to deliver goods.They respond quickly to merchants’ needs and are compatible with neighbourhood life.” (Ville de Montréal 2022, 35)

7- “Emblematic buildings are preserved and enhanced. They are put to new uses to meet the needs of the population.” (Ville de Montréal 2022, 35)

8- “Schools are a high-quality focal point of neighbourhood life. Residents use them at different times of the day to learn, to play, to practice sports and to meet each other.” (Ville de Montréal 2022, 35)

9- “Streets are designed for the safety and comfort of pedestrians. They enable everyone to get around, regardless of their ability.” (Ville de Montréal 2022, 35)

10- “Close to home, it’s easy to shop, socialize, go to school or attend a library lecture.” (Ville de Montréal 2022, 35)

Conclusion



Fig. 5.1 : Renders Shows the views towareds the Farine Five Roses Flour Mill

Renders by Author



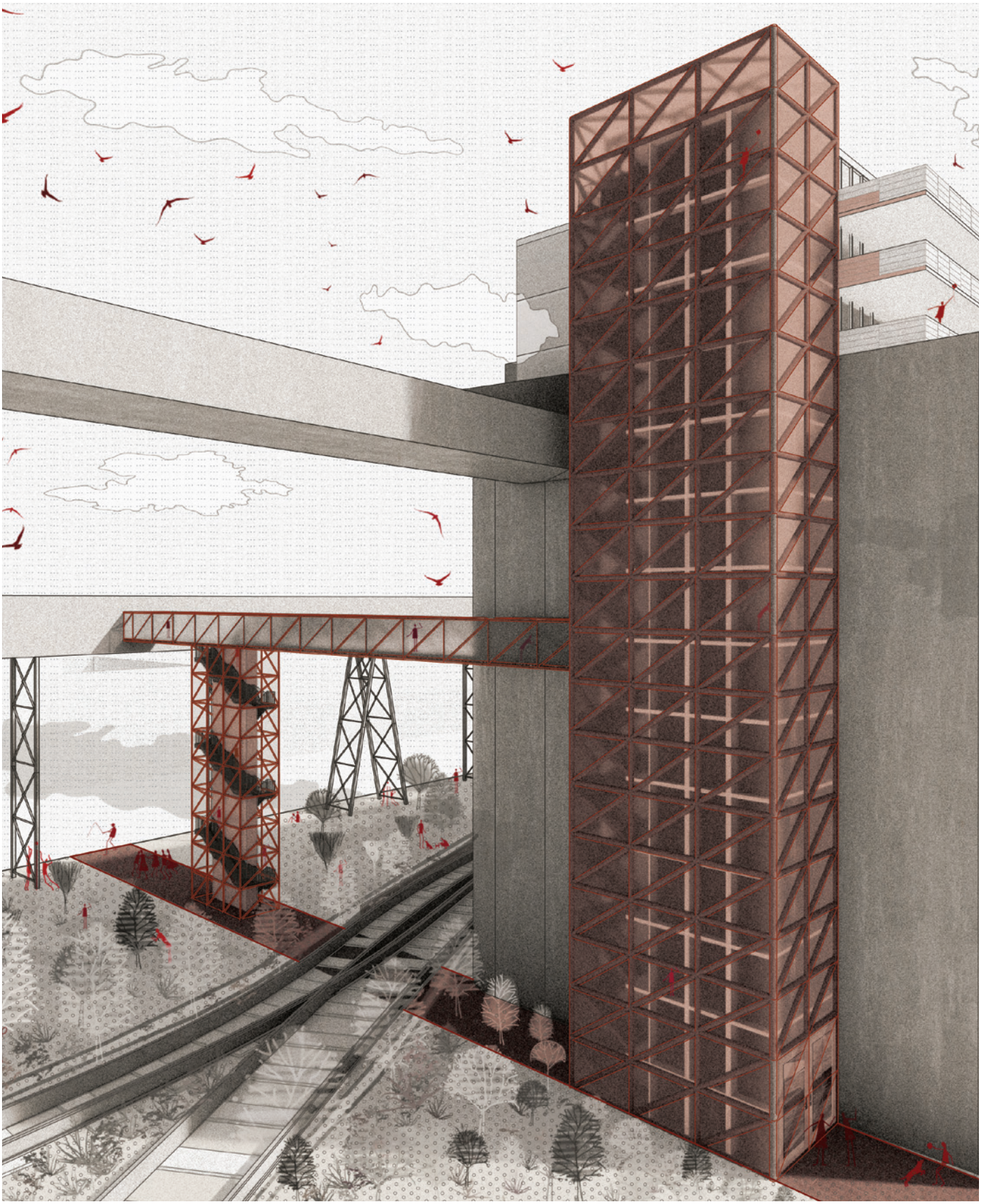


Fig. 5.2 : Renders viewing Annexe 5 and the proposed vertical circulation

Renders by Author

Conclusion

In the end, far from being liabilities to urban development, flour mills are valuable assets to cities. As shown in Chapters 1 and 2, they were key factors in Canada's economic and demographic growth as well as the urban development of multiple communities. When people moved near flour mills, they didn't just see an industry; they saw a drive, an opportunity to build a life and be part of something bigger.

It is true that nowadays, with economic globalization and the expansion of cities, mills have lost a part of their prestige. But that doesn't mean that people no longer value or want them. In Chapter 3, the Farine Five Roses flour mill was used to demonstrate that this industry remains a focus of interest for the Montreal population, which can be shown through the citizens' mobilization to preserve its sign. When residential projects or new owners want to modify the character of the mill, people stand to defend the structure's authenticity, thus corroborating the fact that this industry still plays a role in community identity.

While the community's attachment to the Farine Five Roses flour mill is evident, maintaining the mill and its components unchanged is a veritable challenge in the face of changing economic and urban conditions. The world is changing, and urban areas are becoming denser, requiring industrial buildings to adapt to a certain degree of change. This is why Chapter 04 proposed that the Pointe-du-Moulin district be redeveloped in such a way as to retain the original function of the flour mill and its authentic character while at the same time reconfiguring the flour mill's components to create a space more suited to the new dense urban fabric.

Of course, this proposed urban plan, which aims to find a delicate balance between maintaining the mill's operation and the demand for housing, comes with its own challenges. For instance, the owner of the Farine Five Roses flour mill, ADM, will have to accept and be convinced that opening a part of their site to the public will bring a better and long-term viability plan for their company. Adding public activities and blending the industrial structures into the area will help residents see this mill as an asset to their future neighbourhood rather than an unpleasant building.

Future industrial revitalization projects should carefully consider this balance, underscoring the importance of the economic viability of existing industries, requiring more flexible and innovative planning strategies. Urban planners and architects will be crucial in preserving the city's heritage while adapting to the changing urban landscape. Indeed, the main purpose of architects and urban planners is to build projects that are in line with the human condition. But what is the human condition? These days, we seem to reduce human beings to a kind of rational, individual consumer. But human beings are much more than that: they belong to a community. Designing an urban project requires considering the community's roots to avoid projects that fail to reflect the need to gather citizens around a vision in which they identify.

Thus, the duty of urban planners and architects is not just to satisfy housing demands; they have the duty to revive this sense of collective Canadian identity through a cultural attachment. That requires conceiving buildings with the potential to be integrated into urban projects to maintain their authenticity and original character. Let's also add that architects must adapt their projects to the challenges of today. One of the main challenges (if not the biggest one we face) is to find a way to build sustainable projects. Yet, it turns out that preserving existing buildings is the most ecological way to redevelop urban land.



Fig. 5.3 : Illustration showing the Linearity of Pointe du Moulin

Renders by Author



Fig. 5.4 : Renders Zoomed on the new Ground Floor Circulation

Renders by Author

While sustainable redevelopment is essential, it is important to recognize the challenges inherent in preserving industrial areas and their distinctive "machine site" aesthetics while meeting current environmental standards. This aesthetic, characterized by materials from the Industrial Revolution, mainly steel and concrete, poses environmental problems due to their production, which releases significant carbon dioxide into the air. Future work for the *Vertical City Mills* proposal should explore more advanced methods of creating a "machine" and industrial look without relying on steel as the primary material for emergency staircases and central circulation. These structures are intended to ensure accessibility to the entire site and use metal to create a light visual impact to blend with the mass of the imposing grain silos. Yet, this reliance on steel reveals the need for future exploration of more innovative materials and construction techniques that could match the desired aesthetics of these "crane" circulation structures while minimizing their impact on the environment.

Reflecting on past mistakes, many historically praised monuments were considered obsolete. They thus were destroyed or completely denaturalized to give birth to "modern" complexes that were believed to better meet the needs of the time. Today, we can only appreciate the beauty and prestige of these lost monuments through historical images. Even if some buildings seem "out of date" today, we can never know how the future generation would appreciate it. To adapt them according to their original purpose while meeting today's needs might be the only way to accommodate the interests of the past with those of the present.

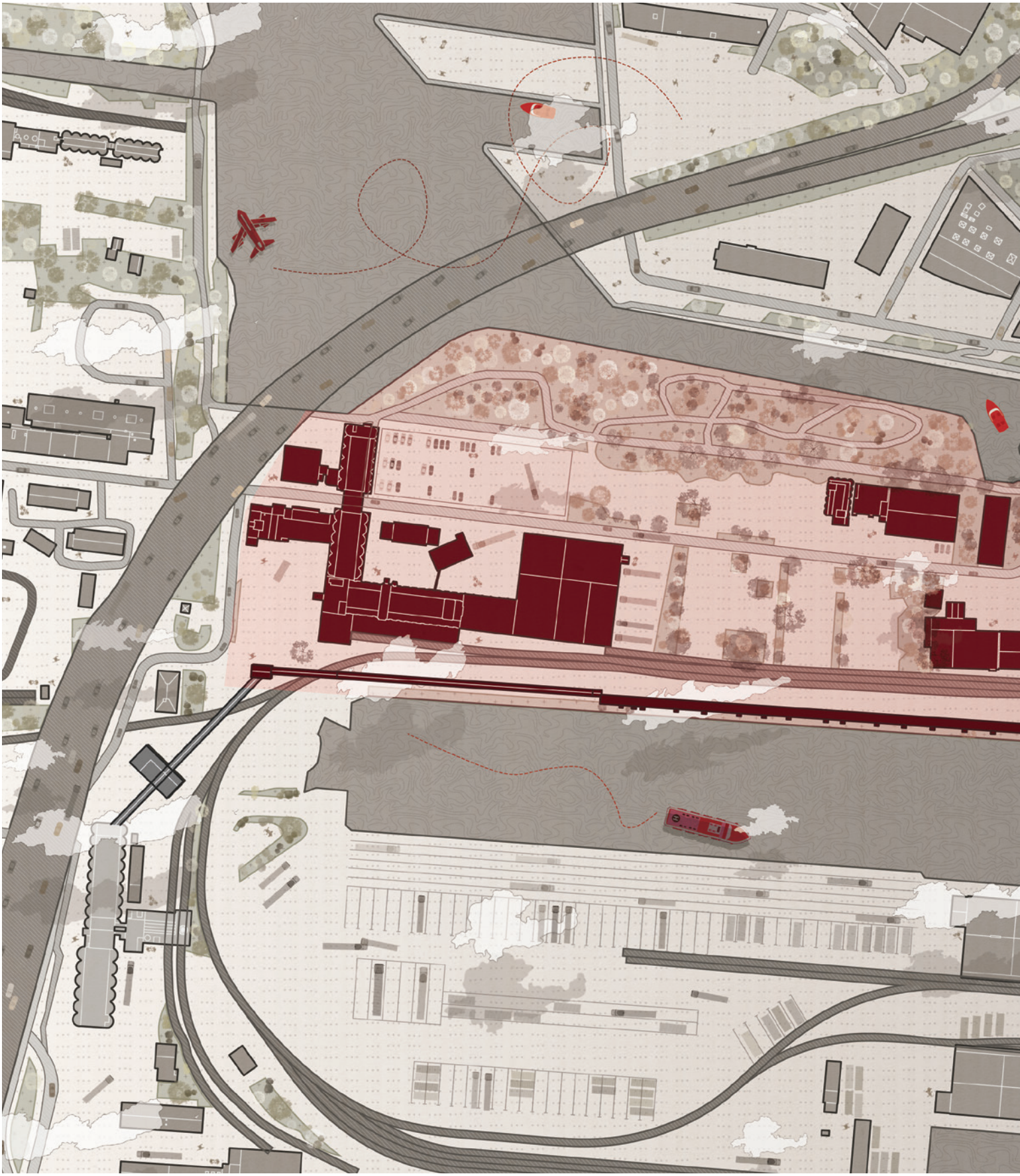


Fig. 5.5 : Conclusion: Site Plan Existing Condition

Renders by Author



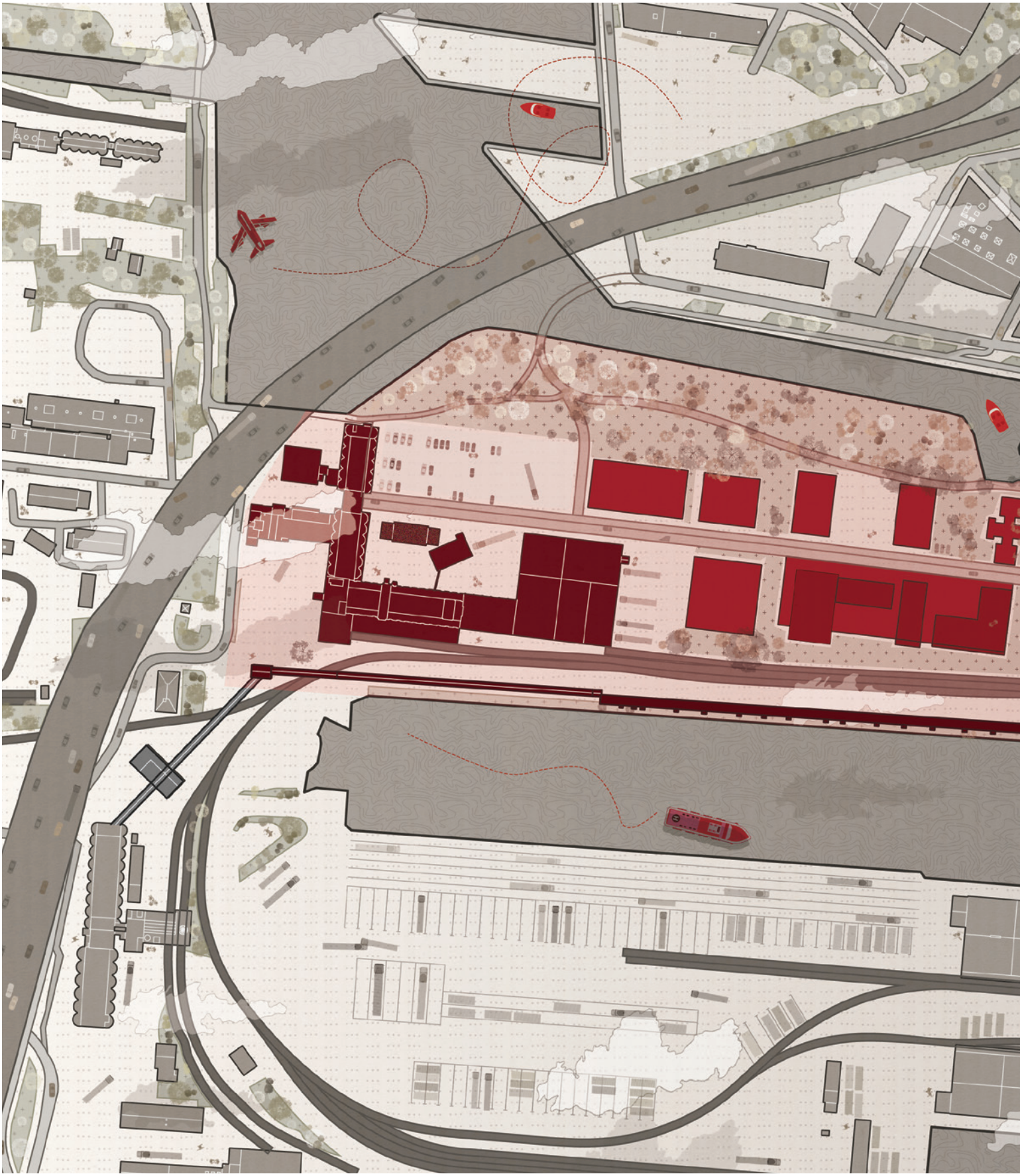


Fig. 5.6 : Conclusion: Site Plan Bridge Bonaventure

Renders by Author



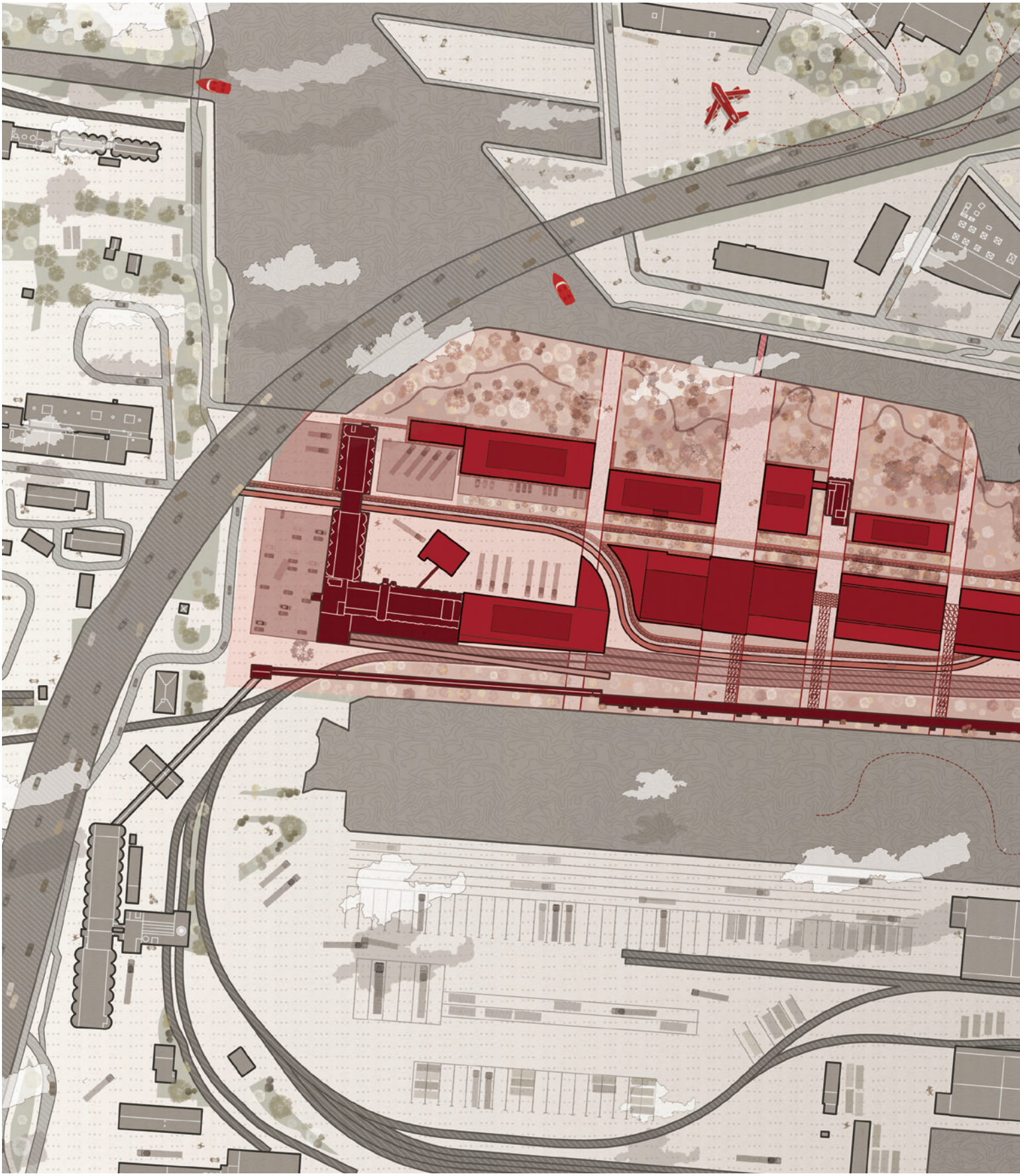


Fig. 5.7 : Conclusion: Site Plan The Vertical City Mills

Renders by Author



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Fig. 6.1 : Author inside of a Flour Mill, Buffalo

Image by Likhitha Varikuti, 2024

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