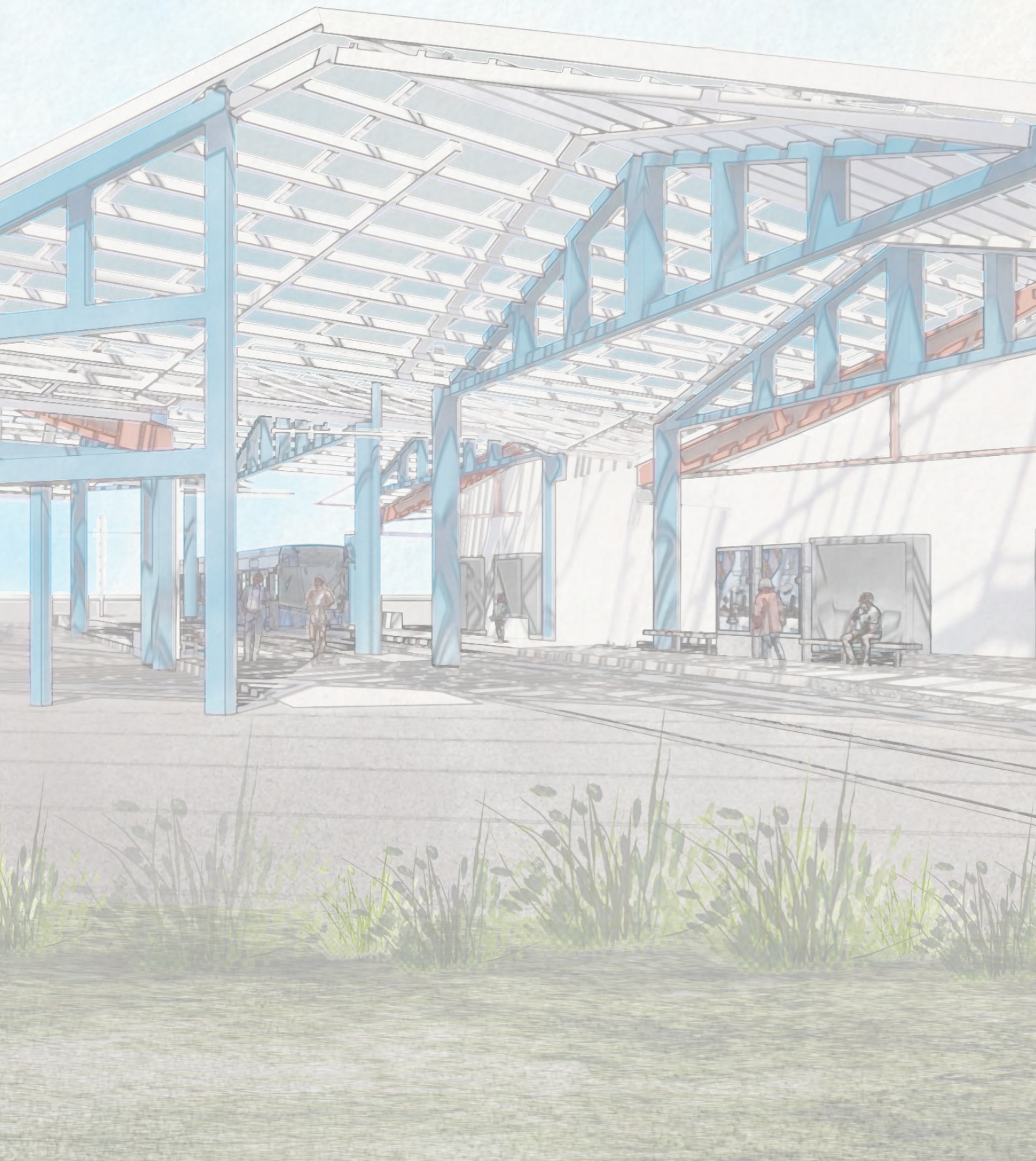


RE IMAGINE THE FUTURE

TRANSFORMATION OF MAGASIN E CONSIDERING THE FUTURE TRAM LINE IN FRIHAMNEN





Title: Reimagine the future
Transformation of Magasin E considering the future tram line in
Frihamnen
Thesis direction: Urban Challenges
Author: Seyedehmahdis Mirsadeghi
Year: 2023
School: Chalmers School of architecture
Master's Programme in Architecture and Urban Design (MPARC)
Examiner: Joaquim Tarrasó
Supervisor: Joaquim Tarrasó, Carl-Johan Vesterlund

Abstract

This study addresses the problem of abandoned buildings no longer being used as intended and scheduled for demolition. The focus is on transforming contemporary industrial spaces in urban areas into spaces suitable for human use. In addition, the research looks into the possibility of relocating industrial areas Historically located on the outskirts of cities to more central urban locations.

Adaptive reuse offers a practical approach to promoting neighborhood revitalization and preserving cultural heritage. This approach involves reusing industrial structures by recycling their functional components and potentially relocating them to other sites, allowing these structures to serve new programs and functions. The benefits of adaptive reuse include mitigating the accumulation of abandoned and unused industrial structures and modifying them to meet current needs while safeguarding critical cultural assets from demolition.

This study seeks to investigate the project's narrative through multiple modes of representation, which are expected to act as the primary driver of change at the project site. Specifically, the study explores diverse approaches for establishing connections between historical layers and contemporary realities, particularly concerning the human experience. Additionally, by examining various scenarios for the building's functional and expressive transformation, this research offers a fresh perspective on engaging with a site's history in future development.

Keywords : adaptive reuse, transformation, abandoned space.

Acknowledgment

First and foremost, I would like to extend my heartfelt gratitude to Joaquim Tarrasó and Carl-Johan Vesterlund my supervisors, for their unwavering enthusiasm, constructive guidance, and continuous support throughout this journey.

I am deeply grateful to my friends for their invaluable feedback on my work and their constant encouragement, which has motivated me to persevere.

Above all, I am profoundly thankful to my family for their immense love, unwavering support, and trust in my abilities. Their presence and belief in me have been the driving force behind my achievements.

At the very beginning fantasy is not a substitute for reality but the first method of finding it.

— Adam Phillips, Winnicott



Student background

Bachelor of Architectural Engineering from Mazandaran Institute of Technology (2012-2016)

Chalmers University of Technology (MPARC)

Studios taken during master degree:

Matter Space Structure 3, ARK258 (fall 2022)

Social, ecological urbanism, ARK142 (spring 2022)

Design and communication tools, ARK442 (spring 2022)

Architecture and urban space design, ARK128 (fall 2021)

Content

Background	08
Aim and research question	09
Method	10
Time line	11
Literature review	12
Method for locating a site	15
Site	22
Magasin E	23
Future development	29
Case study	32
Design proposal	40
Reflection	62
Bibliography	63

Background

Cities are constantly changing, and urban progress leaves its stamp on metropolitan areas. Urban spaces in the built environment are left behind when industries fail or a city's population moves away from specific areas. "Following the precepts of smart growth, old structures, rather than being razed, can be incorporated into plans for development. Demolition of existing structures in the center of an established city is difficult for several reasons. the preservation movement has made people aware of architectural heritage; a permit is required in most cities to tear down a building, accompanied by an often cumbersome and expensive review process, and, finally, demolition." (Bloszies, C, 2013)

A city will permanently lose space since it constantly changes and grows. What is meant by lost spaces is that the space one was built with a specific role, but nowadays, it is not going to take its role, and usually, they just randomly functioned and appeared for it. Especially industrial buildings will experience further modification due to social and technical change, losing their original function.

"Lost space might be viewed as an inefficient use of available space in an urban setting that is cut off from the pedestrian movement. It is a neglected region that no longer serves any purpose." (Trancik R, 1986)



Fig 01. Images of Frihamnen Area

Aim and research question

The main focus of this design project is to address the issue of abandoned buildings that are no longer utilized as intended and are scheduled to be demolished. The objective is to convert modern industrial spaces in urban areas into suitable environments for human use. Additionally, the research investigates the potential of relocating historically situated industrial areas from the outskirts of cities to more central urban locations.

Adaptive reuse presents a practical approach to promote the revitalization of neighborhoods and protect cultural heritage. This approach involves repurposing industrial structures by recycling their functional elements and potentially relocating them to different sites, enabling these structures to serve new purposes and functions. The advantages of adaptive reuse include reducing the accumulation of abandoned and unused industrial buildings and adapting them to meet current needs while preserving valuable cultural assets from being demolished.

This study aims to examine the project's narrative through various forms of representation, which are anticipated to be the primary catalyst for change at the project site. Specifically, the research explores diverse methods to establish connections between historical layers and present realities, particularly focusing on the human experience. Additionally, by exploring different scenarios for the functional and expressive transformation of the buildings, this research provides a fresh perspective on effectively engaging with a site's history in future development.

Question:

-How can the Magasin E building be adapted to fit the future development of Frihamnen?

Subquestion:

-How can adaptive reuse keep the building's identity in the post-industrial area?

-How can adaptive reuse of the industrial building become a future vision for the area?

Keywords: adaptive reuse, transformation, abandoned space.

Methods

Extensive research was undertaken as the initial phase, including examining relevant literature, site studies, and reference projects. This research aimed to establish a strong foundation upon which design choices could be based, enabling the creation of a comprehensive plan for the project. Site and building investigations were conducted at various scales, from the urban to the building level, covering the historical and present contexts. The building's strengths and weaknesses were identified, and an inventory of its values was compiled, informing the subsequent transformation of the building into a new space.

Extensive research was the starting point for this project's conception.

The first phase thoroughly explored and documented useful references, case studies, and site analysis. The utilization of photography as a tool for documentation proved to be particularly beneficial in capturing the potential of abandoned buildings. The archival data collected served as the foundation for the subsequent phases.

In the second phase, proper interpretation of the data collected in the previous step was undertaken, with various tools employed to facilitate the proj-

ect's production. These tools included representing old building documents, model-making, sketching, diagramming, and digital software. The synthesis of these tools resulted in the realization of the project's design.

The third and final phase focused on refining the design ideas and determining the most effective way to present them. Again, narratives, representations, and models were utilized to articulate the project's conceptual framework and communicate its design features.

The interrelation of the project's phases was characterized by a back-and-forth process with no fixed order for completion. The iterative nature of the project's development process allowed for incorporating new ideas and feedback, resulting in an enriched and refined final product.

Delimitation:

The main purpose of this thesis is to explore a concept for the Magasin E building and its surroundings in the area's future development rather than provide solutions to every technical detail design of structure and buildings elements.

Tools = Photography + Sketching + Model + Drawings

Timeline

January	W 03	Project plan Final version
	W 04	Testing models: Model of existing situation
February	W 05	Prototype
	W 06	Context: Background with site exploration, creating maps and diagrams, Sketches materials for INTERIM 1
	W 07	INTERIM 1 (concept design) Visualization of concept design working with 3D models, Sketches
	W 08	Narrative: Defines what I am going to demonstrate in this project with diagrams, sketches, photography, collages
March	W 09	Key drawing: Edite Visual materials in 3D model and drawings like plan section elevation
	W 10	Refinement: Define unwanted materials , materials for MIDTERM
	W 11	MIDTERM (schematic design) Based on the feedback it is time to have a revision on my project and
	W 13	materials focusing on solving issues
April	W 14	Focus: Applying adaptive reuse in the space in a precise and detailed manner. What relationships do these interventions have with the
	W 15	function? Making things physically and digitally.
	W 16	INTERIM 2 completing the design idea and assessing the unique features it
	W 17	adds. What has been previously misunderstood that can now be understood? Developing a storytelling form
May	W 18	Creating materials for final seminar presentation
	W 19	and the booklet
	W 20	FINAL SEMINAR finalize material, booklet
	W 21	
June	W 22	OPEN SEMINAR

Literature review

I started reading about adaptive reuse and transformation and questioning the difference between them. Transformation and adaptive reuse are related concepts in architecture, but they differ in their approach to repurposing existing structures. While both ideas involve repurposing existing buildings, transformation typically involves a more radical process, where the current form is heavily modified or even completely demolished to create something new. In contrast, adaptive reuse consists of repurposing the existing building to preserve its character and history while accommodating new uses.

In the book “Adaptive Reuse: Extending the Lives of Buildings” by Jennifer Barnes and John Penny, the authors explain that adaptive reuse involves a “sensitive and thoughtful approach to the re-use of existing buildings that seek to maintain the essential qualities of the original structure, while also accommodating contemporary requirements” (Barnes & Penny, 2019, p. 4). This approach involves preserving vital elements of the existing structure, such as the building’s character, history, and architectural features while making necessary modifications to accommodate new uses.

Adaptive reuse also has the potential to revitalize urban areas by repurposing underutilized or abandoned structures. This can promote economic development and create new opportunities for social interaction. For example, the High Line in New York City, repurposed from an old railway line into a public park, has become a significant attraction and a catalyst for development in the surrounding area (Barnes & Penny, 2019).

In contrast, transformation involves a more radical approach to repurposing existing buildings. This approach may apply significant modifications to the existing structure, such as demolishing portions of the building or adding new elements that completely change its character. For example, a historic factory building might be transformed into a modern office building, with extensive modifications to the building’s façade, interior layout, and mechanical systems.

The book “Transforming Architecture: A Critical Guide to the Theory and Practice of Adaptive Reuse” by Elizabeth Golden provides a comprehensive analysis of the various approaches to architectural transformation. Golden argues that change involves a “critical rethinking of the relationship between past and present and a willingness to engage with the complexities and contradictions of the built environment” (Golden, 2008, p. 2). This approach involves a deep understanding of the history and context of the existing building, as well as a willingness to explore new design possibilities that respect the building’s history and character.

In the book several examples of building transformations, including the Tate Modern in London, and the High Line in New York City. These examples illustrate how transformation can be used to repurpose existing structures, preserve their historical significance, and create new and exciting public spaces.

In summary, while transformation and adaptive reuse involve repurposing existing buildings, they differ in their approach to this process. Adaptive reuse involves a sensitive and thoughtful approach to repurposing existing buildings that seek to maintain the essential qualities of the original structure. In contrast, transformation involves a more radical process that may include significant modifications to the existing system to create something new. Both approaches have their place in architecture and urban design. Their success depends on a range of factors, including the history and character of the existing building, the community’s needs, and the project’s goals.

Based on Sto Americans-based architect company, “adaptive reuse” describes changing an existing structure for a new function or objective. The level of modification, replacement, and general alterations to the original design determines the type of adaptive reuse. In this regard, during my exploration of a different project that has been built, I tried to divide some of them based on these categories.

1. Adaptive Reuse Historic Preservation

Utilizing modern, practical architectural elements that adhere to current building requirements while still paying attention to the structure’s history is possible thanks to historic preservation.



Fig02. Santa Caterina market, Barcelona.

SANTA CATERINA MARKET

Designer: studio Miralles Tagliabue EMBT

Location: Barcelona, Spain

The concept keeps some of the original building, and the architects suggested a fresh display of the area that respects the context and history of the place.

2. Adaptive Reuse Renovation

Renovation often entails maintaining the building’s original function while repairing and finishing the structure.



Fig03& 04. Argo factory (Before and after), Tehran, IR

Argo Factory art museum

Designer: ASA North

Location: Tehran, Iran

“Our architectural response to Argo Factory was to offer it a ‘second chance’ as opposed to ‘preservation,’” explained the studio’s founder Ahmadreza Schricker. The first step of ASA North’s intervention was to underpin the existing building without disturbing its original brick walls.

3. Adaptive Reuse Integration

Adaptive reuse By enclosing the original structure inside a new building, integration entails maintaining the original structure.



Fig05. Tate modern art museum

Tate modern

Designer: Herzog & de Meuron

Location: London

The museum was originally a power station designed by Sir Giles Gilbert Scott and completed in 1963 which converted into a museum in 2000. The architects maintained the original structure and industrial character of the building, while enclosing the old power station in a new glass and steel structure. The old power station's massive brick chimney was also preserved as a part of the building's history and identity.

4. Adaptive Reuse Facadism

Facade modernization protects a building's facade while dismantling and updating the interior. The ancient footprint of the town is still visible from the curb after a fasciectomy. without the need for exterior modifications.



Fig06. Smederij NDSM completed faced

Smederij NDSM

Designer: GROUP A

Location: Amsterdam, Netherland

the transformation take place and turn the complex into a work environment for a variety of companies was commissioned by mediawharf monumenten B.V. The old columns and trusses were only sandblasted and received no further treatment, which gives them a striking contrast to the clean, white elements that were added.

5. Adaptive Reuse Infrastructure

Mainly adaptive reuse focuses on buildings, although some creative projects convert underused or old infrastructures into space needed for housing, offices, community centers, and other uses.



Fig07. High line view from above, New York

High Line

Designer: James Corner Field Operations and Piet Oudolf

Location: New York, US

The High Line park built on an abandoned elevated freight rail line on the west side of Manhattan. The original structure of the railway was preserved and transformed into a unique public park, incorporating the original rail tracks and the surrounding historic architecture.

The building industry is forced to adapt and develop ways to accommodate the expanding population in cities while attempting to reduce emissions due to global warming, rising population, and increasing needs. An analysis by the Preservation Green Lab, which looked at the

“Building operations account for approximately 41 percent of the nation’s primary energy consumption, 72 percent of electricity consumption, 38 percent of carbon dioxide (CO₂) emissions, and 13 percent of potable water use,” according to a study on the environmental benefits of building reuse in the US. (Frey et al.,2011)

Dictionary:

Space: /speɪs/

a continuous area or expanse which is free, available, or unoccupied.

Adaptive: /ə'daptɪv/

characterized by or given to adaptation.

Adaptation: /ədəp'teɪʃ(ə)n/

IN BIOLOGY

the process of change by which an organism or species becomes better suited to its environment.

Reuse: /ri:'ju:z/

use again or more than once.

Method for locating a site

Gothenburg

Gothenburg has a rich history, particularly in industry and trade. In 1621, the town was established as a gateway to the West and a trading center for Sweden's growing empire. In the following centuries, Gothenburg became one of Europe's most important ports and a hub of industry and innovation. According to the Gothenburg City Museum, the city's early economic success was built on trade with Europe, particularly the Netherlands and England. In the 18th century, Gothenburg's merchants began trading with China, and the city became Sweden's largest tea importer. The East India Company established a branch in Gothenburg in 1731, and the city's trade with China grew throughout the century. The port of Gothenburg played a vital role in the success of these companies, providing them with access to markets around the world. Today, Gothenburg is still a major center of industry and trade, with the port of Gothenburg remaining one of the most important ports in Europe but has been moved outside the city center. According to the Gothenburg Port Authority, the port handles around 30% of Sweden's foreign trade and is a crucial hub for the Nordic countries, the Baltic states, and the rest of Europe.



The present-day harbors of Gothenburg have been constructed over several epochs. At present, the harbor located in the inner city has ceased to serve as a shipping port.

2001-Arendal harbour



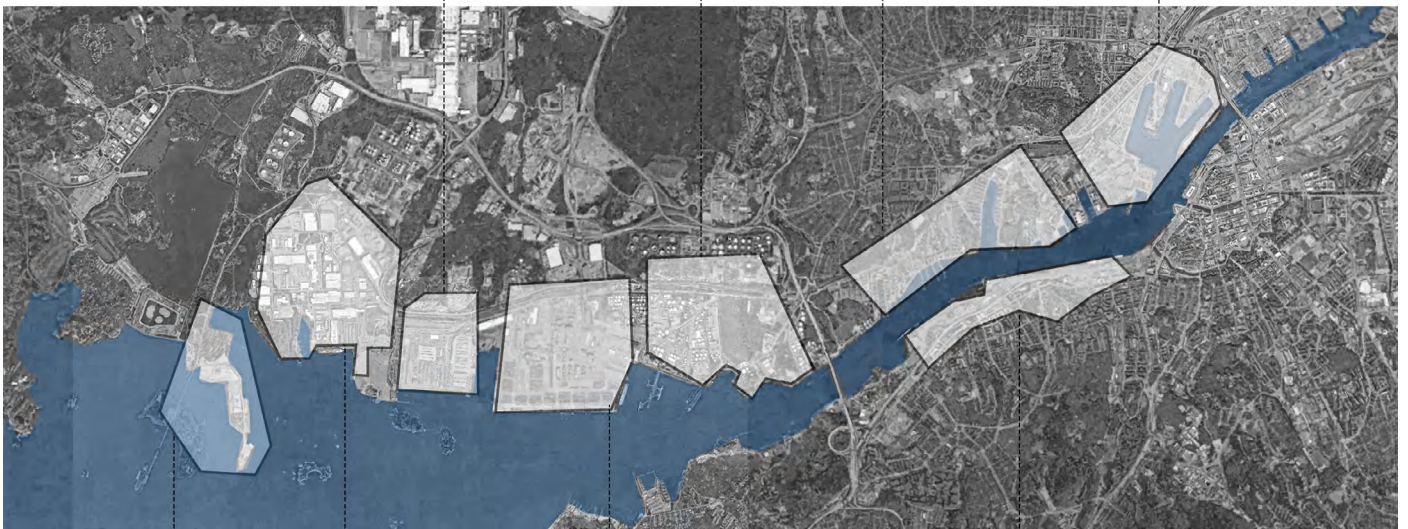
1968-Inner bour north



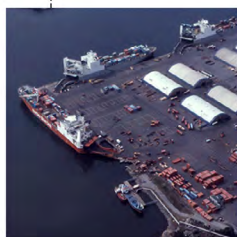
1968-Inner bour north



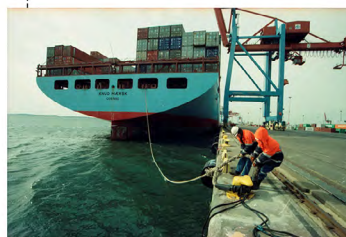
1992-Free harbour(Frihamnen)



1968- Tor harbour



1990-Älvsborg harbour



1998-Skandia harbour



1970-Inner harbour south
Cruise ship berth and other berth

Fig08.Creating map of Gothenburg's harbour based on data from Port of Gothenburg website

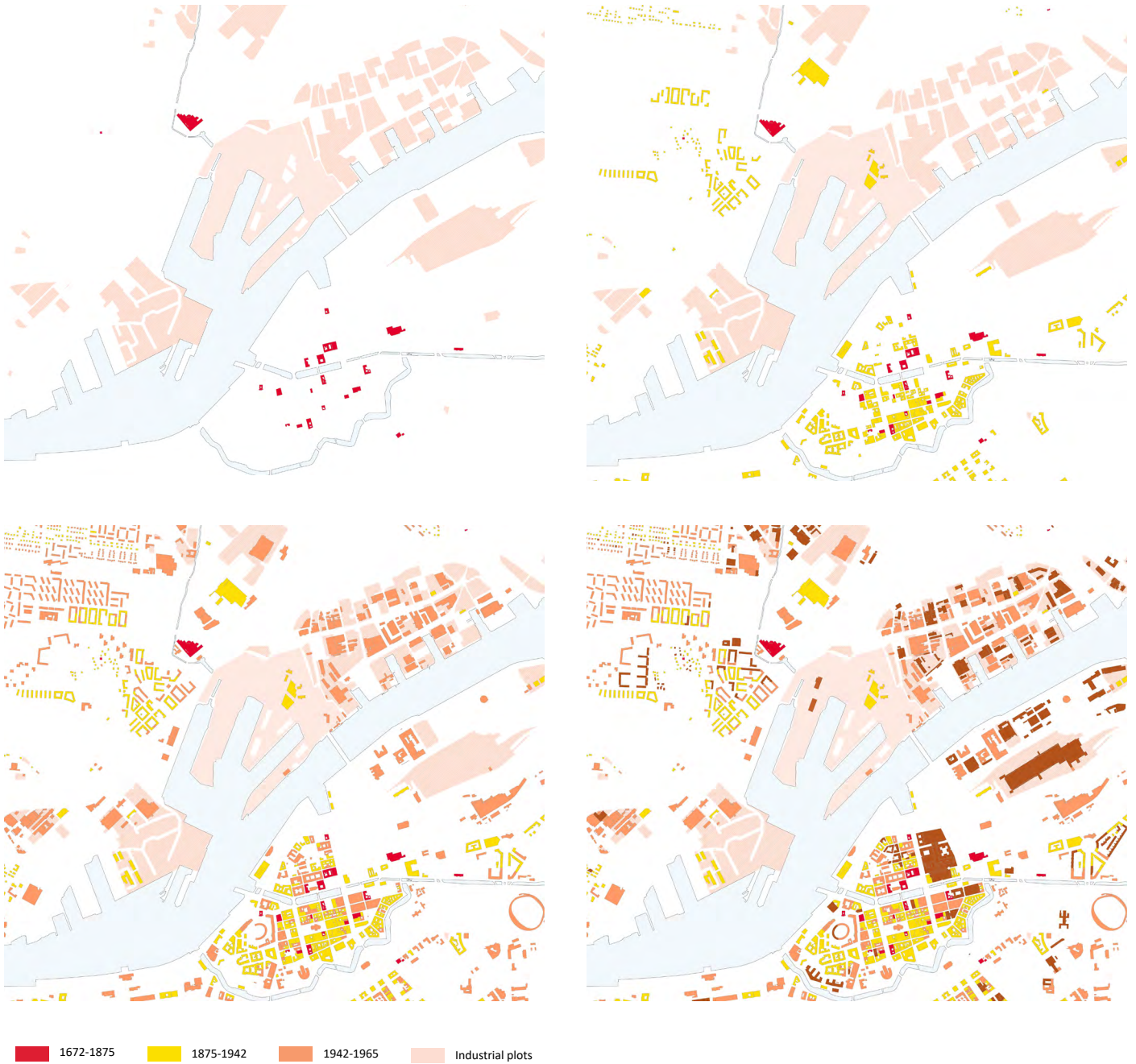


Fig09. Mapping buildings based on years, specifically around Göta älv river and city center, to see how the city has expanded through different years.
. (the years are generated on GIS data)



To begin my project, I needed to find a building that no longer functions in the way it was built or had been abandoned, and I wanted to envision a new purpose for it through my design. To do this, I searched various urban areas and visited different buildings until I found the one that fit my vision. Unfortunately, I discovered that many industrial buildings had become unused. I have provided a map to showcase some examples of buildings I have visited during my search.

1.



Fig 10& 11 A large warehouse (parking lots nowadays)

2.



Fig 12 Plåtverkstaden building

3.



Magasinet buildings in Frihamnen

4.



Fig 13 M-verkstaden

5.



Lyckholms factory



I started my investigation to choose the site by visiting the different industrial areas in Gothenburg. Then, to select the location, I created some criteria to help me figure out which place could be my future site plan.

Site Evaluation Standards:

Finding a site with the appropriate facilities, environment, and cultural value for such a multi-layered design project required a complicated, methodical site selection procedure. The selection of a site for my particular project type required consideration of the following factors.

1. a location with potential connections to trails, greenways, and other public transportation to establish a node for the local area
2. a location focused on the requirement for a neighborhood park with both quiet and active leisure opportunities
3. a post-industrial setting with recognizable structural remains from the past representing industrial heritage.

And Magasinet in Frihamnen was chosen based on the above criteria. Still, it became even more interesting when I heard of the demolition of one of the buildings soon because of the future tram line.



Frihamnen site

Site

Göteborg Frihamnen Harbor is an important node in the city because of its strategic location and historical significance. As Sweden's second-largest city, Göteborg has a long-standing tradition of international trade and maritime activity. Frihamnen Harbor has been a critical gateway for goods and passengers since its inception in the late 19th century. Today, it is a vital hub. The port has been relocated, making the harbor no longer used for trade. The harbor is also a cultural and recreational destination, hosting events and attractions like the Volvo Ocean Race and the Maritime Museum.

Its significance to Göteborg's economy and identity is vital to the city's infrastructure.

Frihamnen in Göteborg was called Bananpiren (the Banana Pier) before because it was primarily used for importing bananas from tropical countries in the early 20th century. The pier was constructed in 1902, and bananas were the essential commodity handled at the harbor for many years.



Fig14 Frihamnen.1998

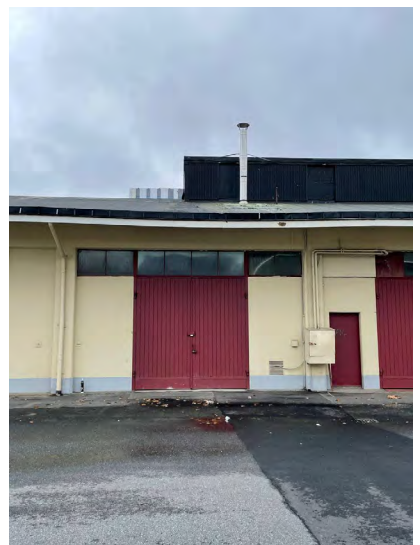
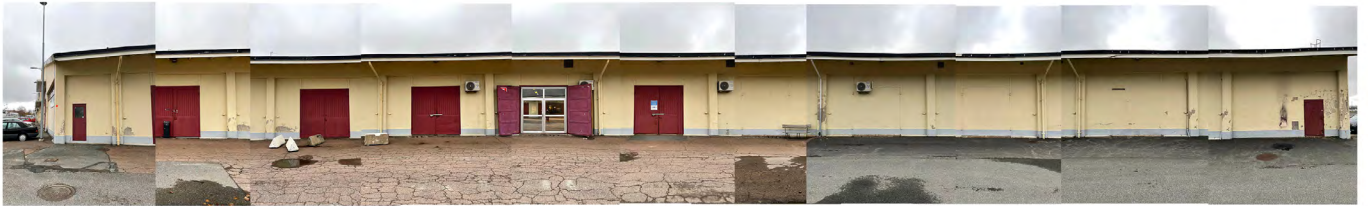
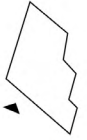
Magasin E

The proposed demolition of the Magasin E building in Frihamnen, Gothenburg, has sparked controversy due to its historical significance as a storage facility for goods transported through the harbor. Constructed in 1907, the building has been a landmark in the region for over a century. The Gothenburg municipality's decision to demolish Magasin E but preserve Magasin D as a heritage program has sparked an interest. This initiative is part of a broader strategy to enhance public transportation and reduce traffic congestion in the city. Implementing a new tram line infrastructure, set to begin construction in

2022 and conclude by 2025, requires the removal of Magasin E to accommodate the tram tracks. Despite the historical and cultural significance of the building, a portion of it currently houses an indoor skate park. In contrast, the remaining parts serve as an auction site for a local company.



Location of Magasin E building in Frihamnen



On-site photography



On-site photography



Fig15. Storage of coffee, Frihamnen, magasin XIX.



Interior photography of Magasin E.



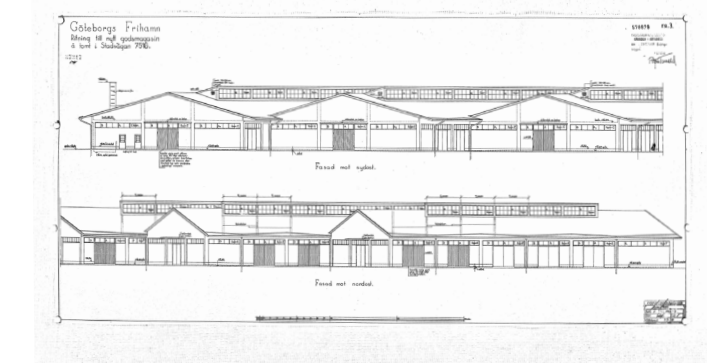
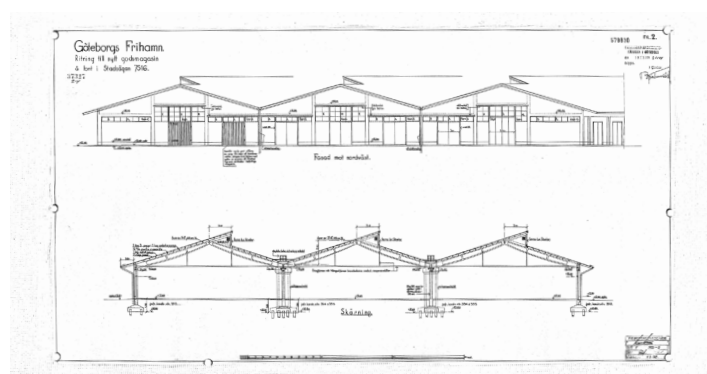
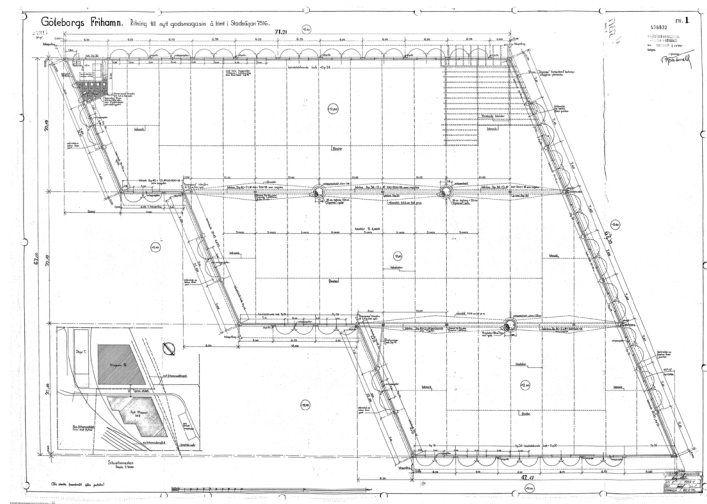
Fig16. Magasin XV in Frihamnen.



On-site photography

Buildings original documents

Magasine E



Magasine D

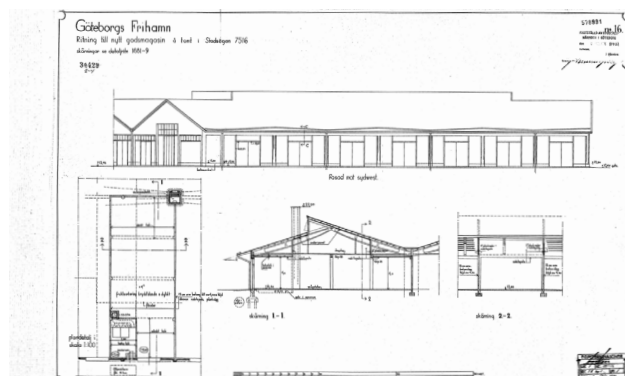
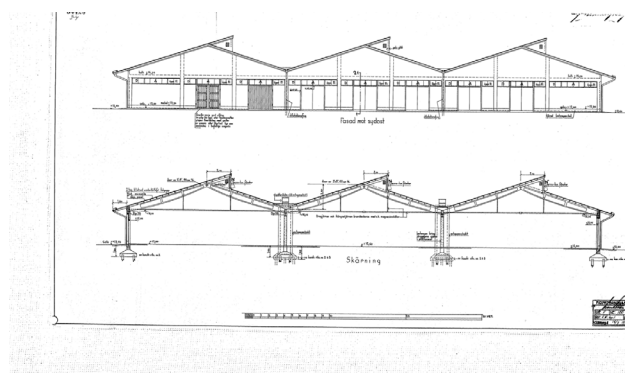
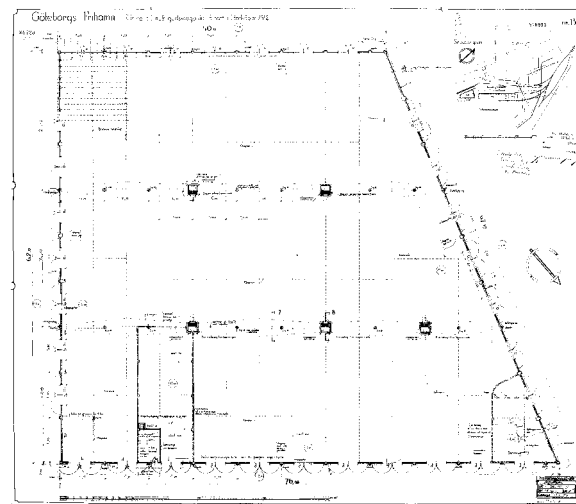


Fig 17. Document of Magasin buildings

Future develoment

Plans to extend the existing tram line to reach Frihamnen, a development area in Gothenburg, have been under discussion. The proposed route will run from Järntorget through Lundby, connecting the site to the city center and other parts of Gothenburg. This extension is expected to enhance public transportation options, offering better access to new housing developments, offices, and commercial spaces being constructed in Frihamnen. Moreover,

the extension is anticipated to promote sustainable transportation, mitigating traffic congestion. To have a better vision, I tried to find some documents showing how it would go through the area; in that sense, I could also illustrate the intersection between the tram and the building

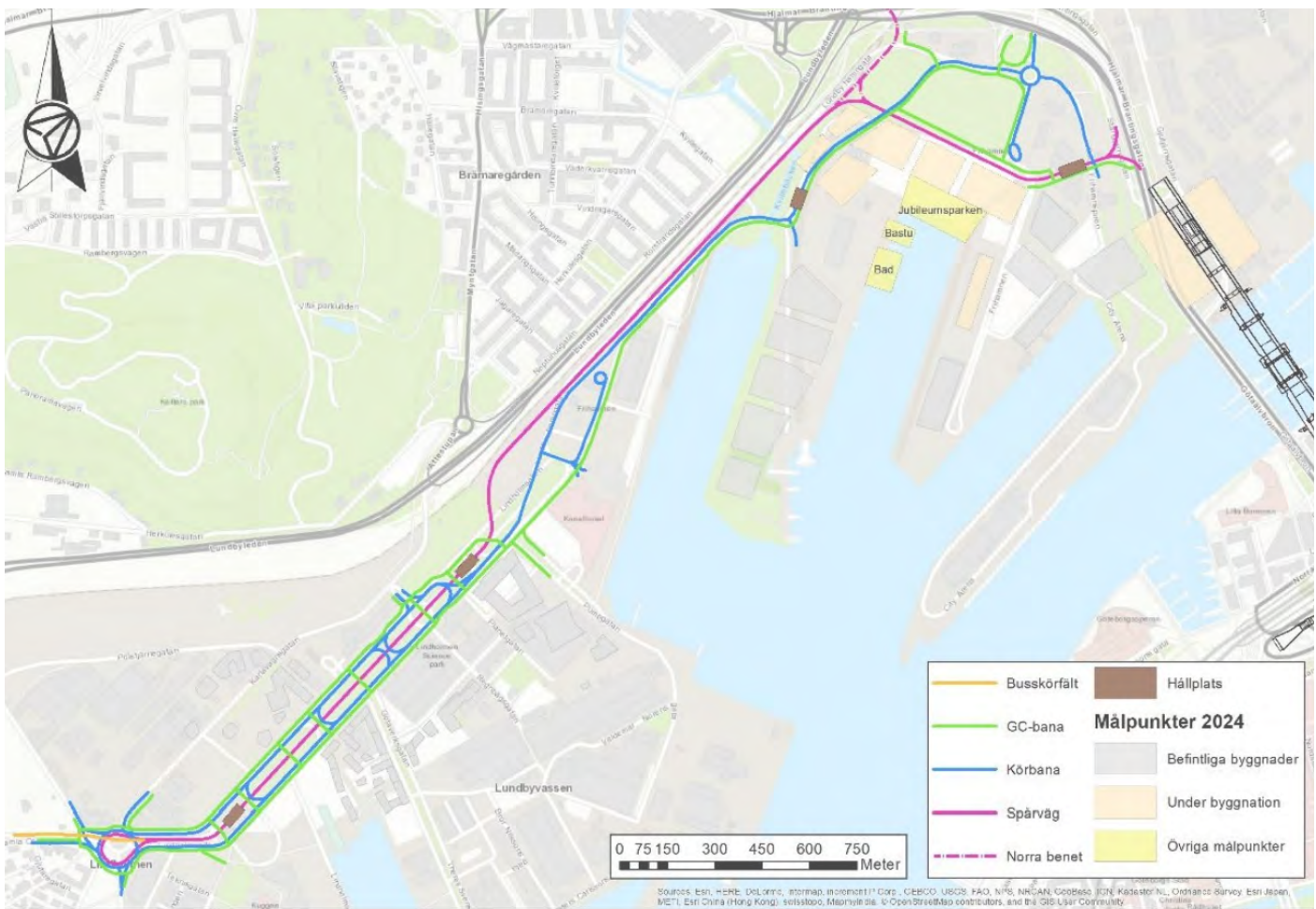
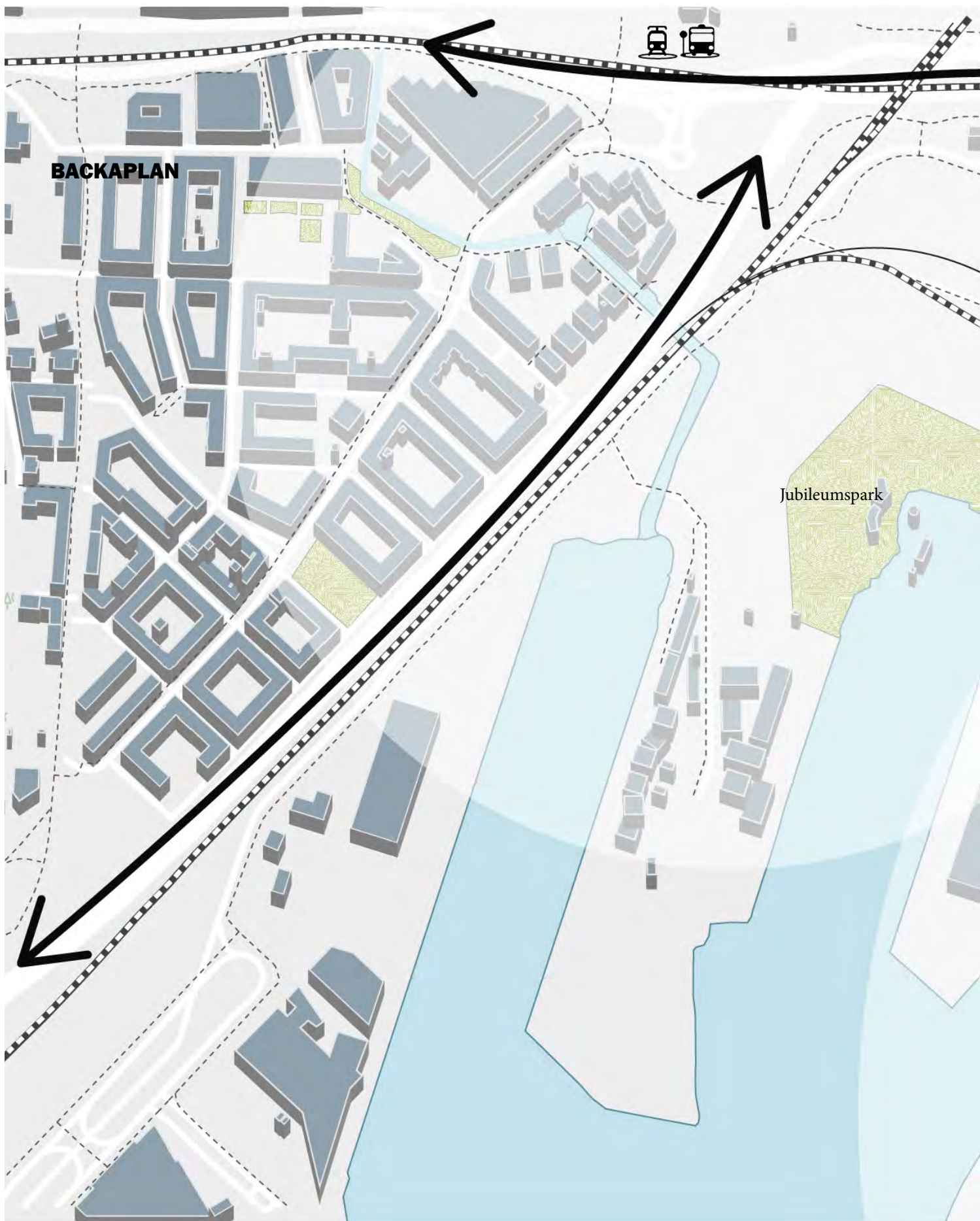
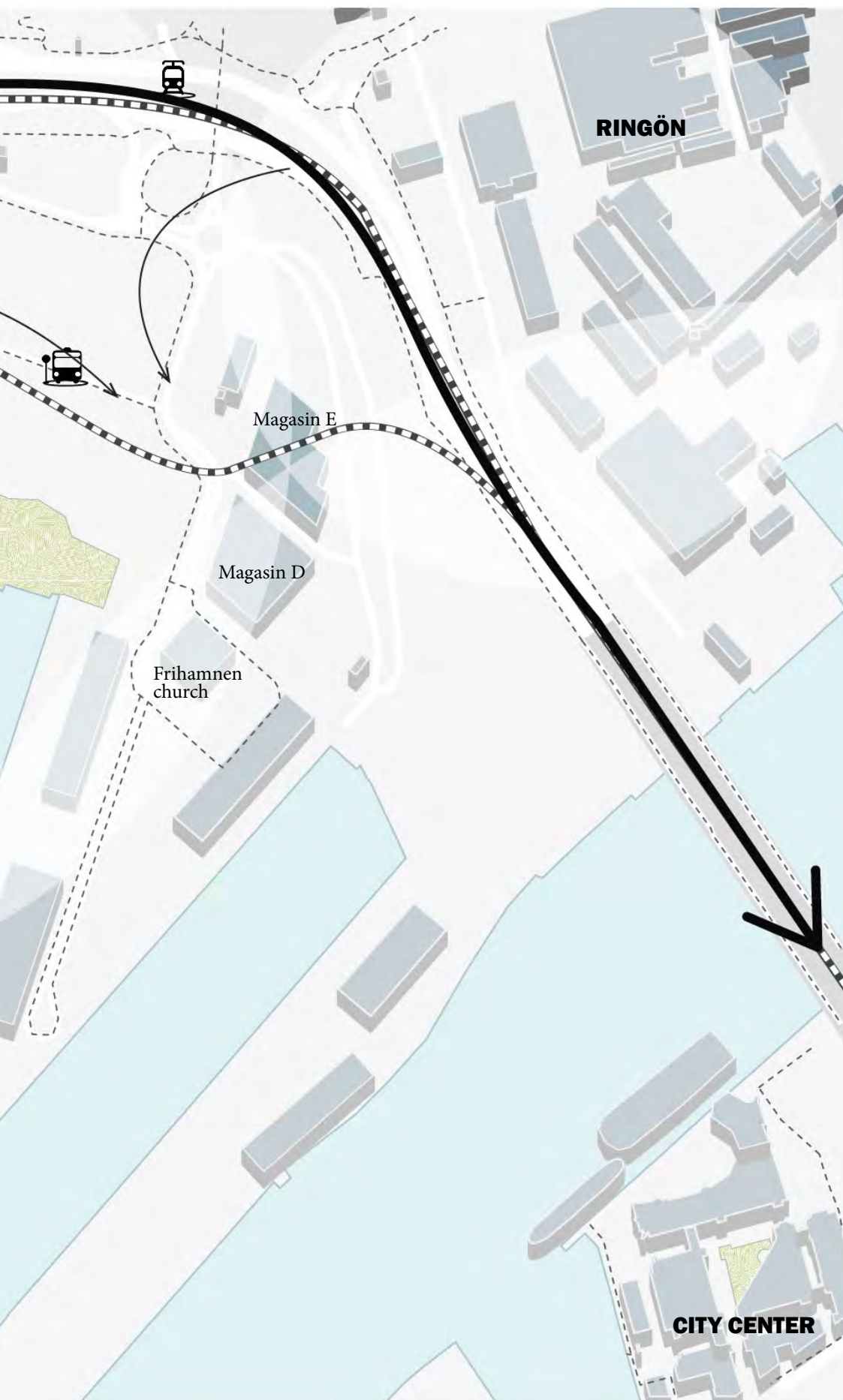


Fig 18. Future tram line in Frihamnen



Site analysis



-  Bus stop
-  Tram stop
-  Pedestrian and cycle
-  Main road
-  Railway
-  Access to site

Case studies

As I began exploring design ideas, I realized the multitude of projects in this field, each with its challenges and opportunities. To streamline my selection process, I decided to prioritize my criteria. One of the key factors was that the building would house a train station, which presented unique challenges and opportunities that I wanted to leverage.

My priority was to focus on projects that would lend themselves well to an industrial space. First, I wanted to create a functional and efficient design that would be visually appealing. Second, I envisioned a space that would provide an engaging experience for users and encourage them to explore. My second priority was ensuring the space could be transformed into a public area once the train station was constructed. Finally, I wanted to create a welcoming, accessible, and inclusive space that would offer plenty of room for people to gather, socialize, and interact with one another.



Fig 19. public space view in MFO park

MFO park (was a factory,now is a park)

Designer: Raderschall

Location: Zürich / Switzerland

For around a century, the Oerlikon Machine Works used the park site (MFO). The property had been contaminated since, during industrialization, the entire grounds were formerly covered with construction debris, foundry sand, and ash. The connected crowns and trunks of innumerable ash trees are now forming a vast woodland region, which is growing alongside the nearby Oerliker Park. The “Park House,” a sizable open hall and a trellis covered in hordes of fragrant, in flower climbers, are MFO Park’s unique responses to this.

*Stripping out the roof but keeping the structure.
opening up the building*

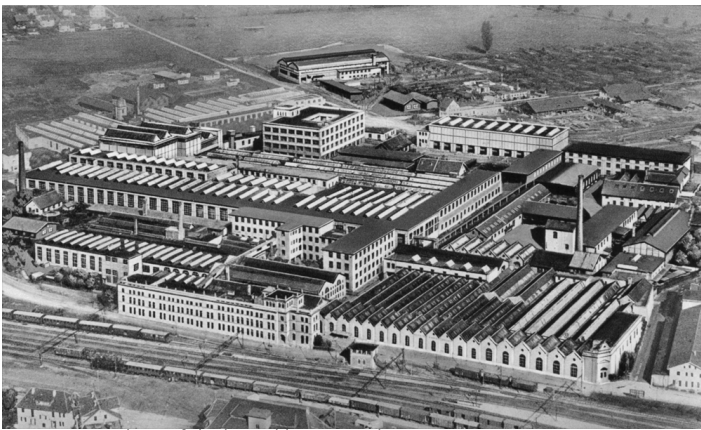


Fig 20. Maschinenfabrik Oerlikon, Zürich

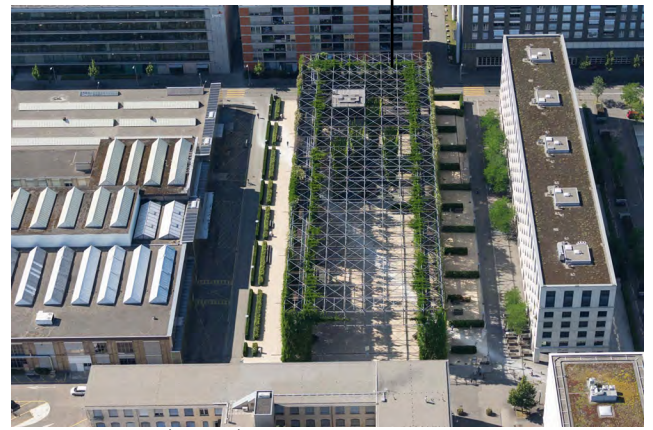


Fig 21. MFO park, Zürich



Fig 21&22. Interior and exterior of building structures MFO Park, Zürich



Creating greenery

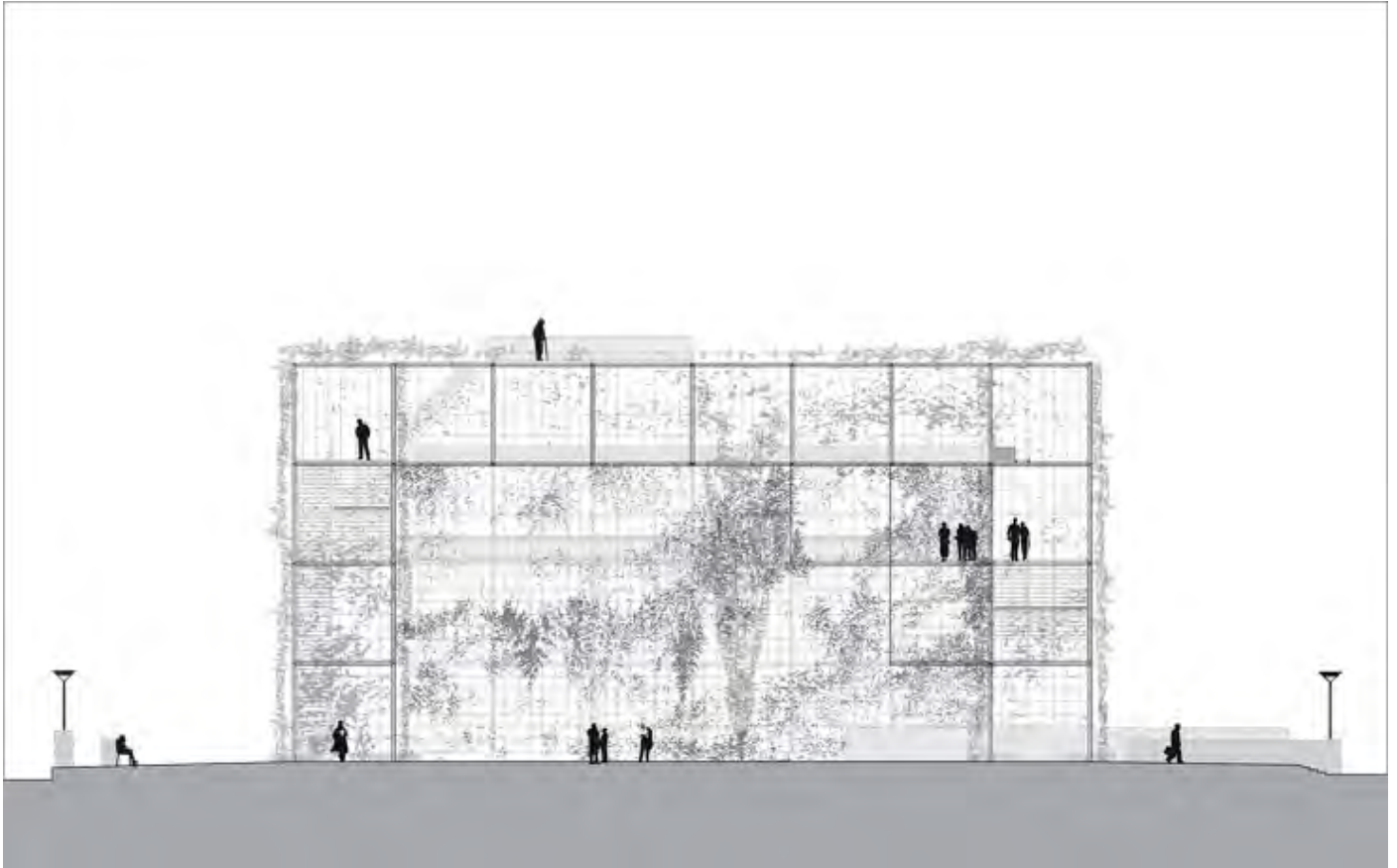


Fig 23. Elevation of MFO park



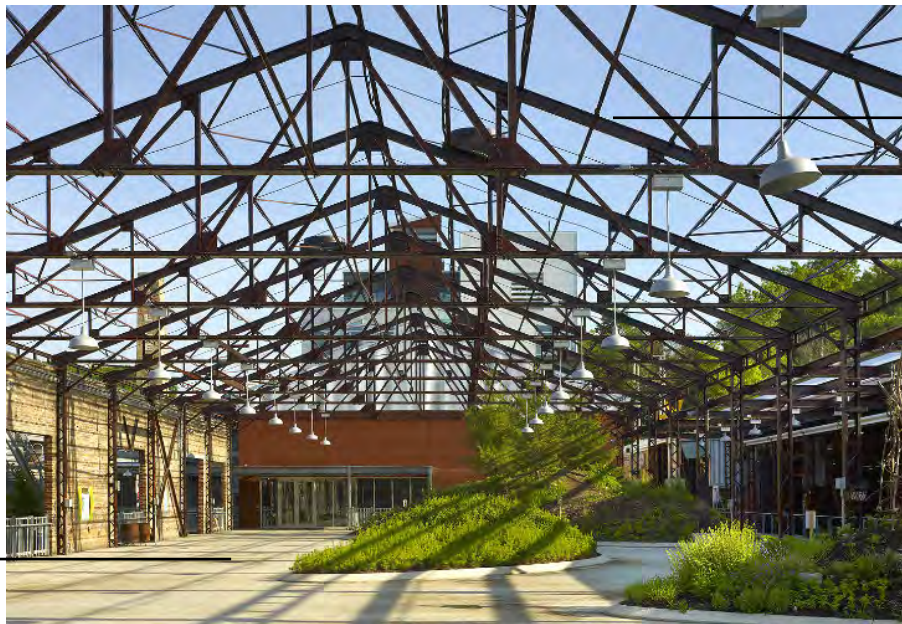
Fig 24. Evergreen Headquarters landscape

Evergreen Headquarters(was a brick factory, now is cultural space)

Designer: Diamond Schmitt Architects

Location: Toronto / Canada

The Evergreen Brick Works project was created by modifying and rehabilitating the abandoned brick mill in Toronto's Don Valley. In order to engage people in a variety of experiences related to nature and the city, it is currently a community landmark with an environmental focus.



Roof structures left
as it was

New landscape
added



Fig 25. Existing old structure in project



Fig 26. Mill De Porre textile factory after transformation

City park(was a textile factory , now is a mixed-used project)

Designer: VANDRIESSCHE ARCHITECTEN

Location: Ghent/Belgium

The former textile mill De Porre, located in Ghent, served as the center of a prosperous textile industry in the 1930s and was a significant employer for many years. The factory was extensively destroyed during World War II and afterwards rebuilt. The plant had to close its doors in 1980 due to bankruptcy. Significant areas of the facility have become dilapidated and in disrepair due to prolonged abandonment. The factory, which remained unoccupied for many years, deteriorated rapidly and turned into an unsafe and deserted place that was frequently targeted by vandals, causing a nuisance for the surrounding residents. The ancient textile plant will be transformed into a public park as part of the project. The Ghent-based urban development business Sogent commissioned this renovation as a component of a mixed-use development urban redevelopment project.



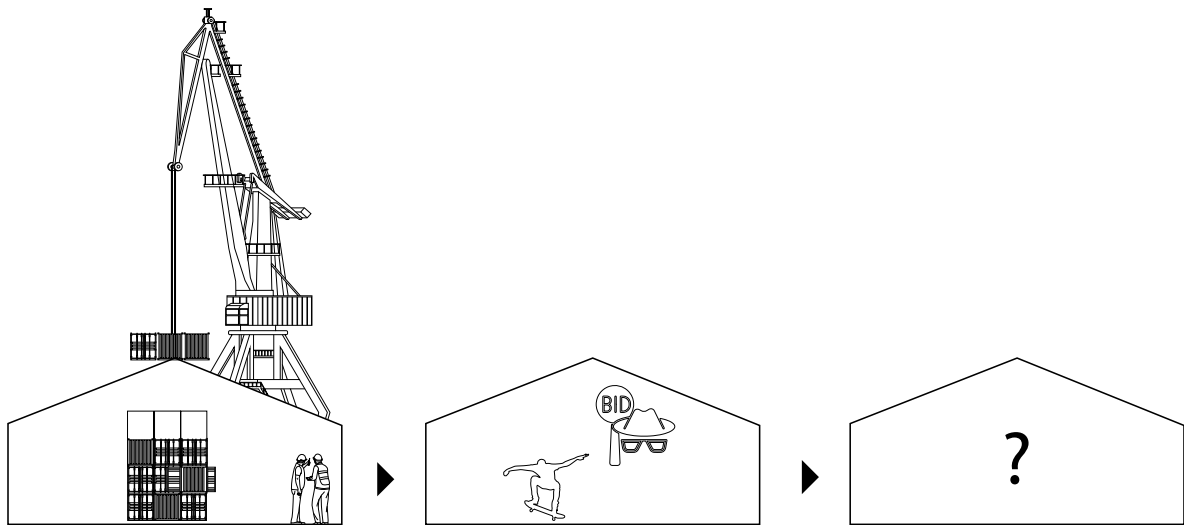
Keeping existing structure to show the identity of space



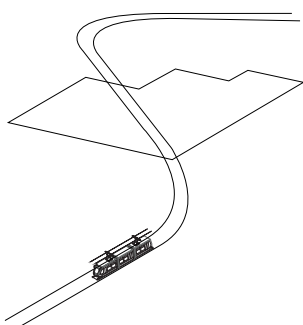
More greenary and New landscape added

Fig 27. The remnants of the underlying structure stand in stark contrast to the network of paths and organic green spaces that now occupy the area.

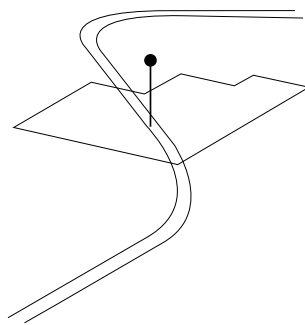
Design proposal



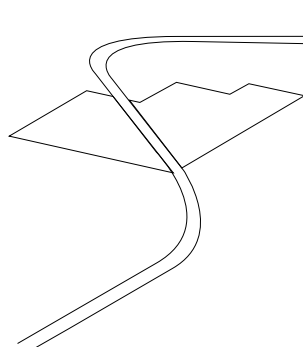
My approach to the design of the space has been influenced by the fact that the document for the future development of the area refers to the location as a “station” and its current use encompasses a skate park and auction hall. In order to transform the space into a public area for individuals, I have commenced an exploration of the implications of the proposed tram line on the existing structure.



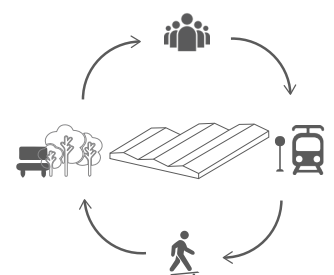
1. Keep the tram line as it is decided to path the building



2. Tram station is considered in the same location

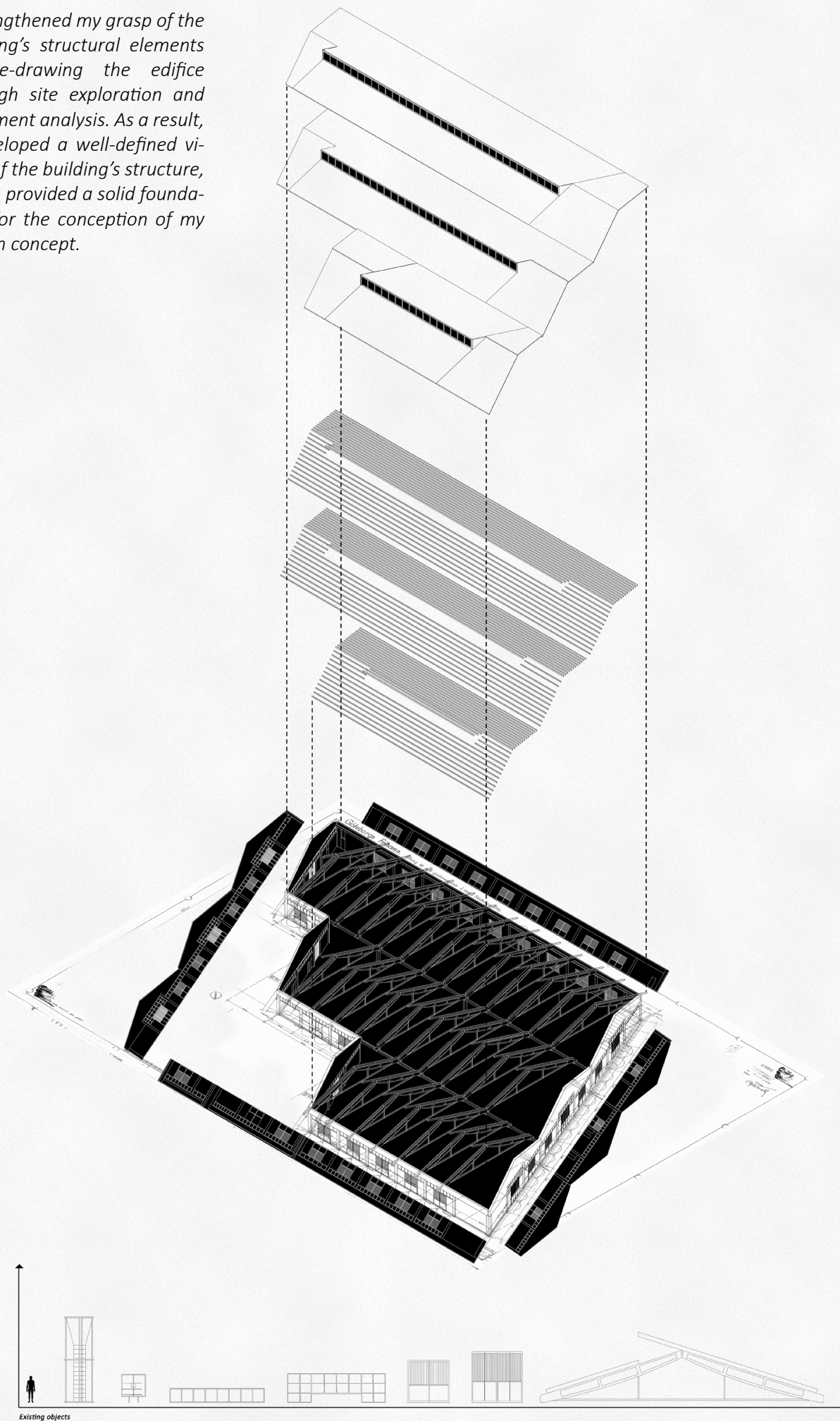


3. Crossing the tram through the building create a gap and divide building into two part



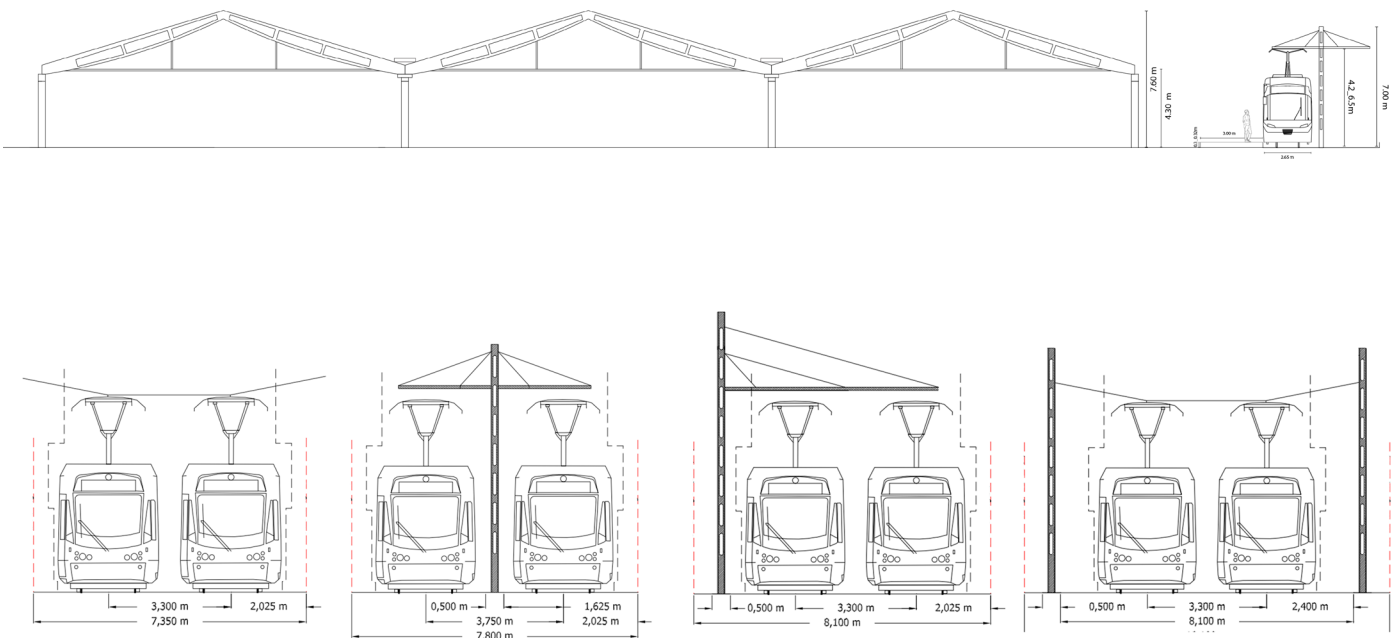
The design proposal is to bring back unity and make it a public space where the Tram line, station, and other activities work together.

I strengthened my grasp of the building's structural elements by re-drawing the edifice through site exploration and document analysis. As a result, I developed a well-defined vision of the building's structure, which provided a solid foundation for the conception of my design concept.

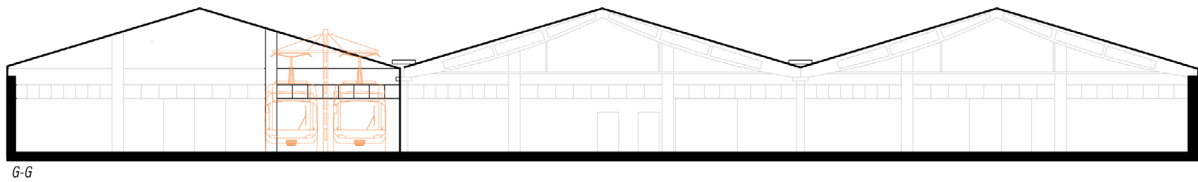




The production of a physical model has proven to be instrumental in augmenting my comprehension of the building's scale and providing insight into the potential impact of the tram line on the structure's different components. To achieve greater precision in the design, I have deemed it necessary to understand the requirements associated with the tram line and station. I have collated and analyzed all relevant information and documentation to pursue this objective.



To minimize the building's impact, I have undertaken a meticulous research endeavor to comprehensively assess various types of trams and cables. Through this exploration, I have identified the most slender option available, thereby facilitating the development of a design strategy that aligns with my objective of minimizing the building's impact.



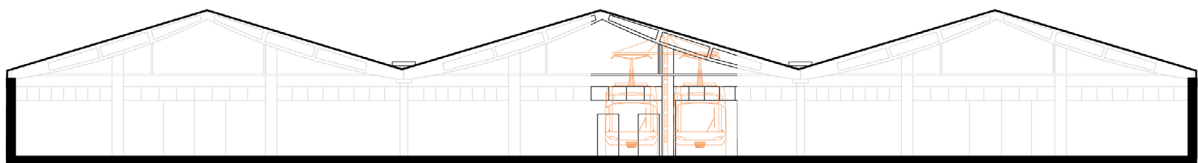
G-G



F-F



E-E



D-D



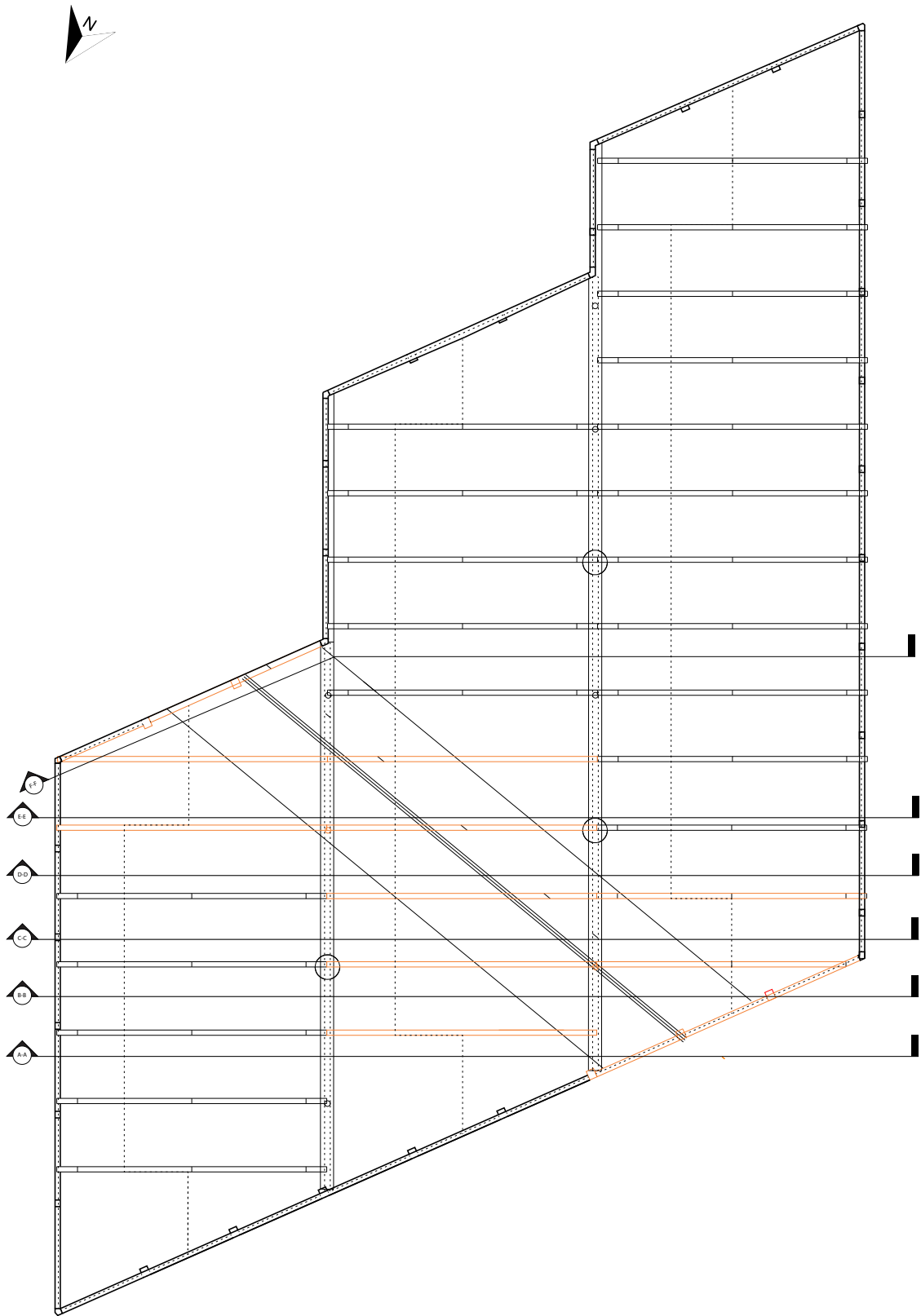
C-C

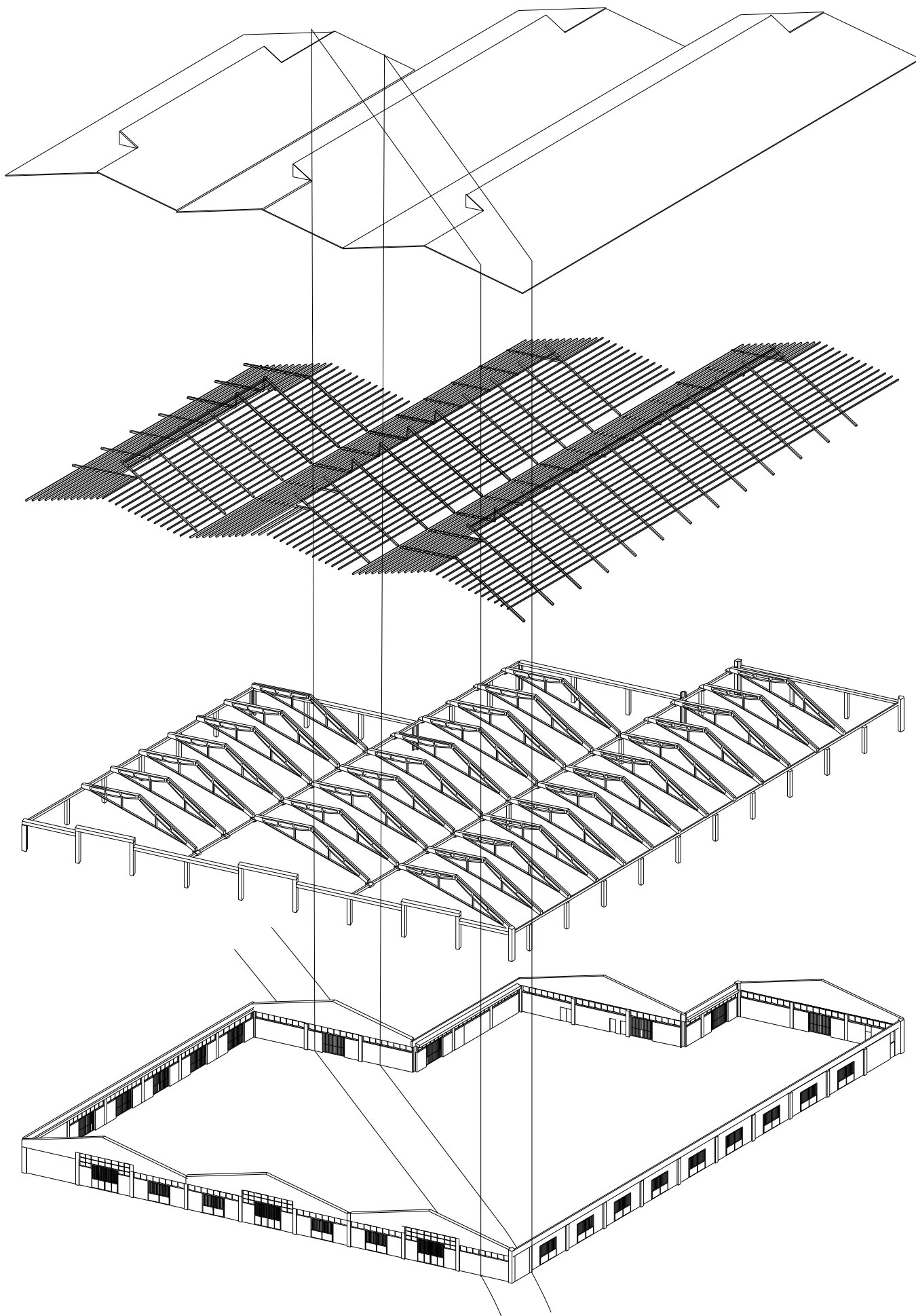


B-B



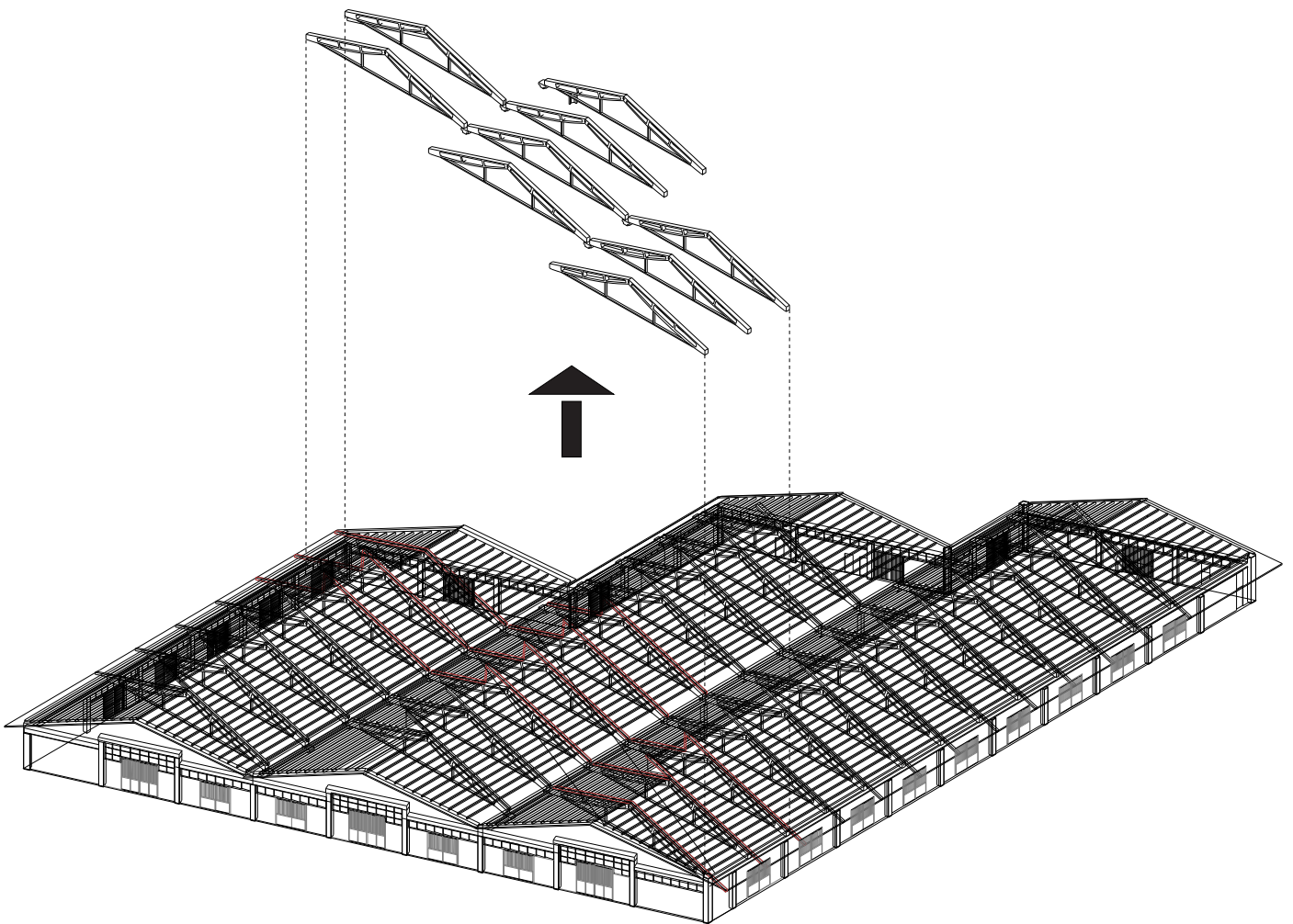
A-A

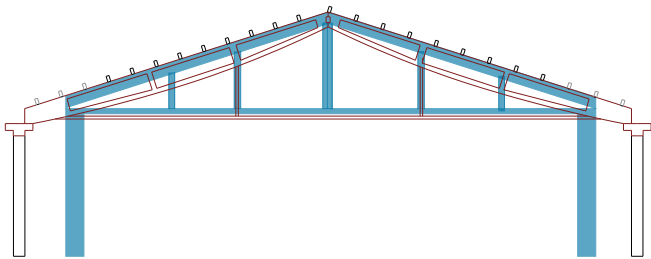
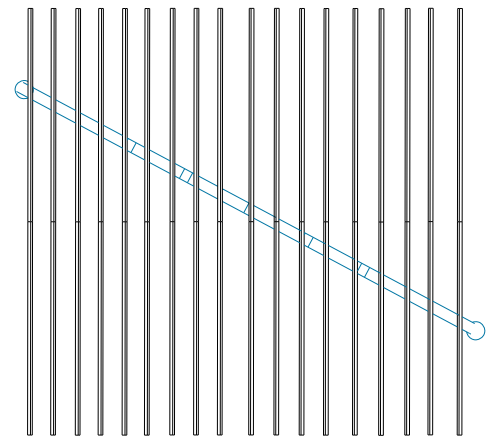
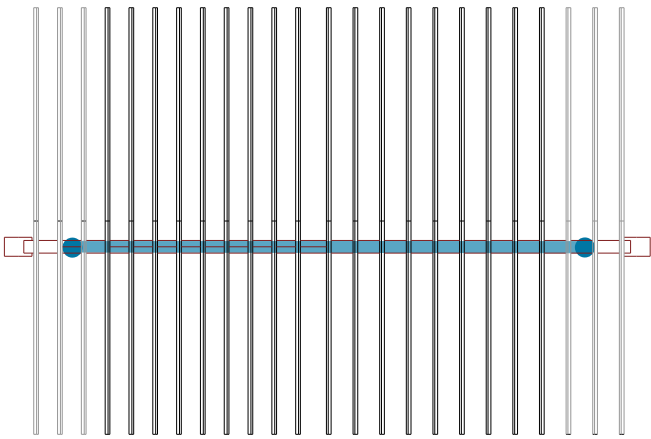




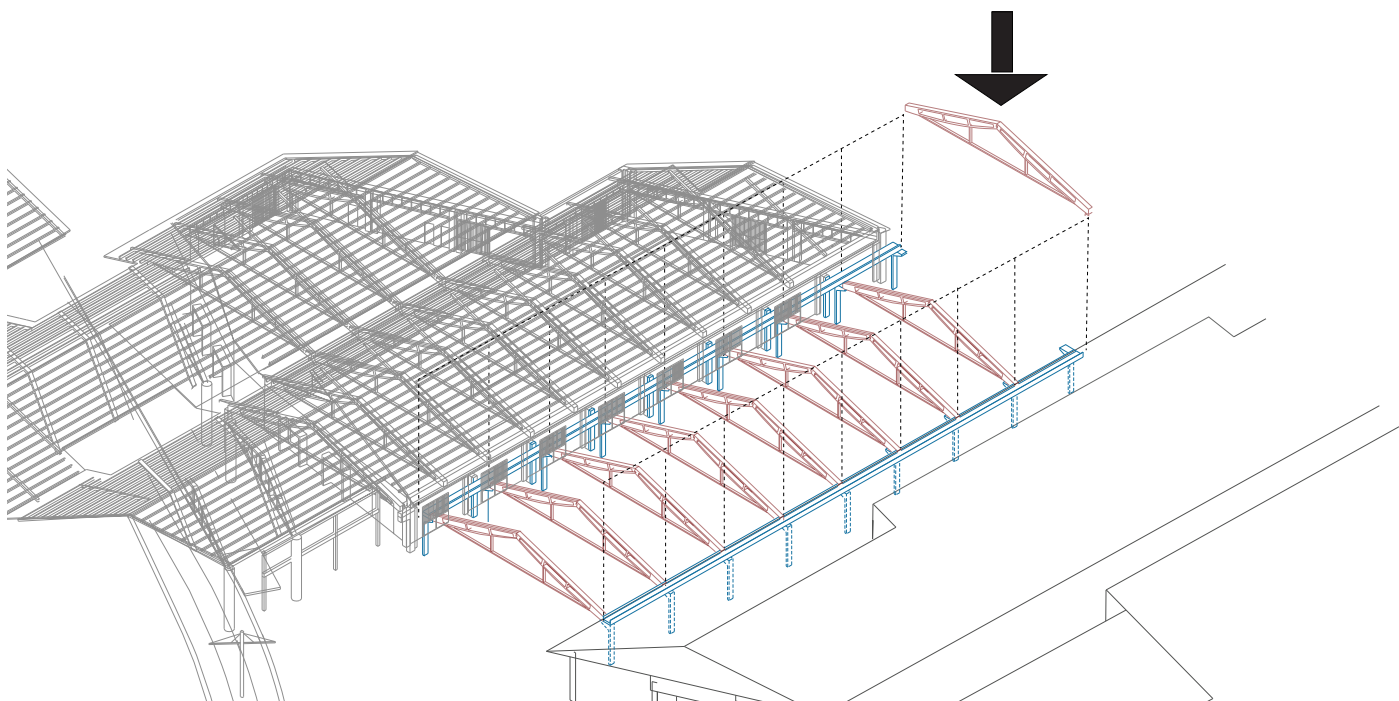
There are intersections between tram movement and structures.

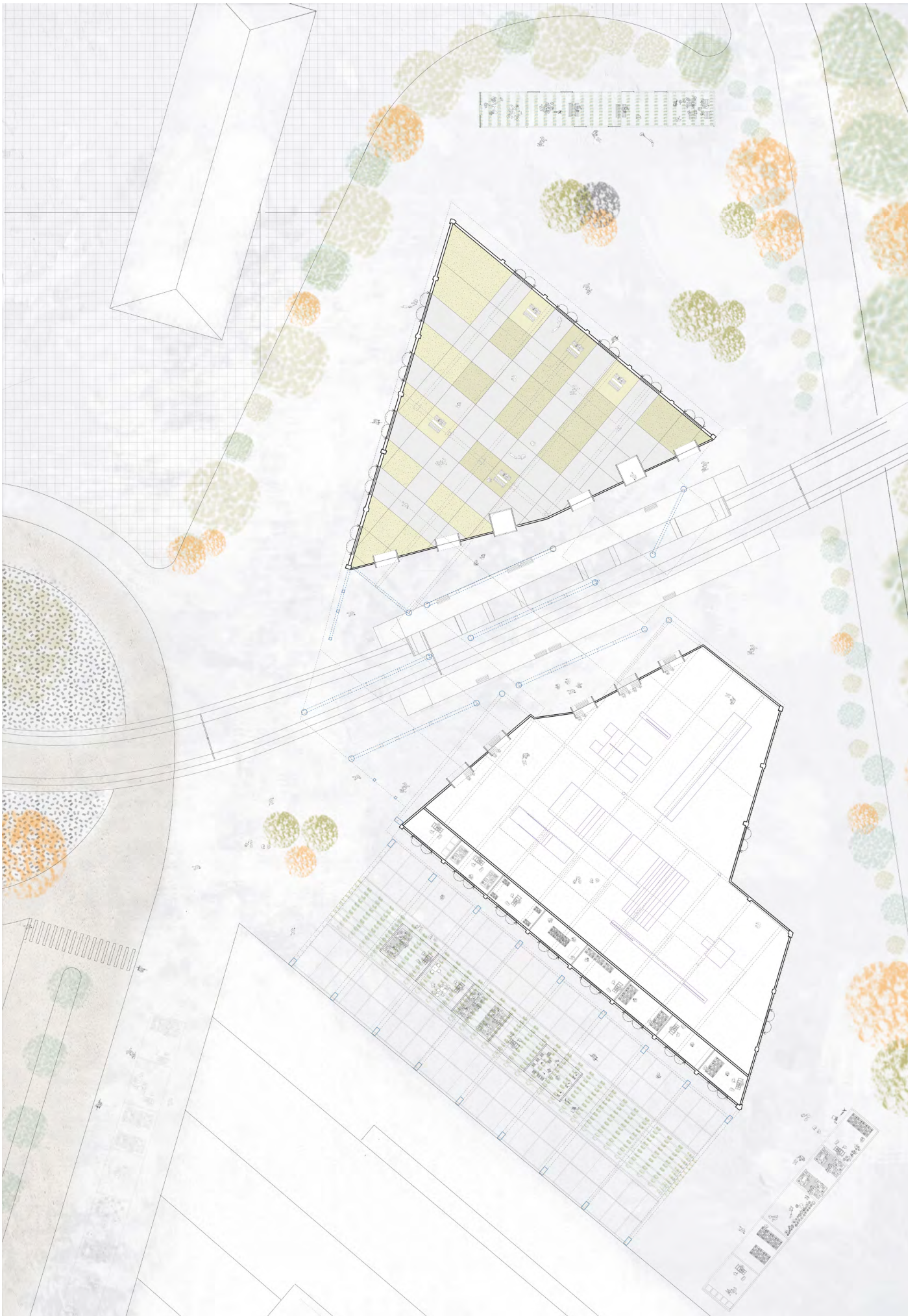
For facilitating the tram movement structure from this part should remove and a new structure is considered to keep the shape of the roof as well as cover the station area.



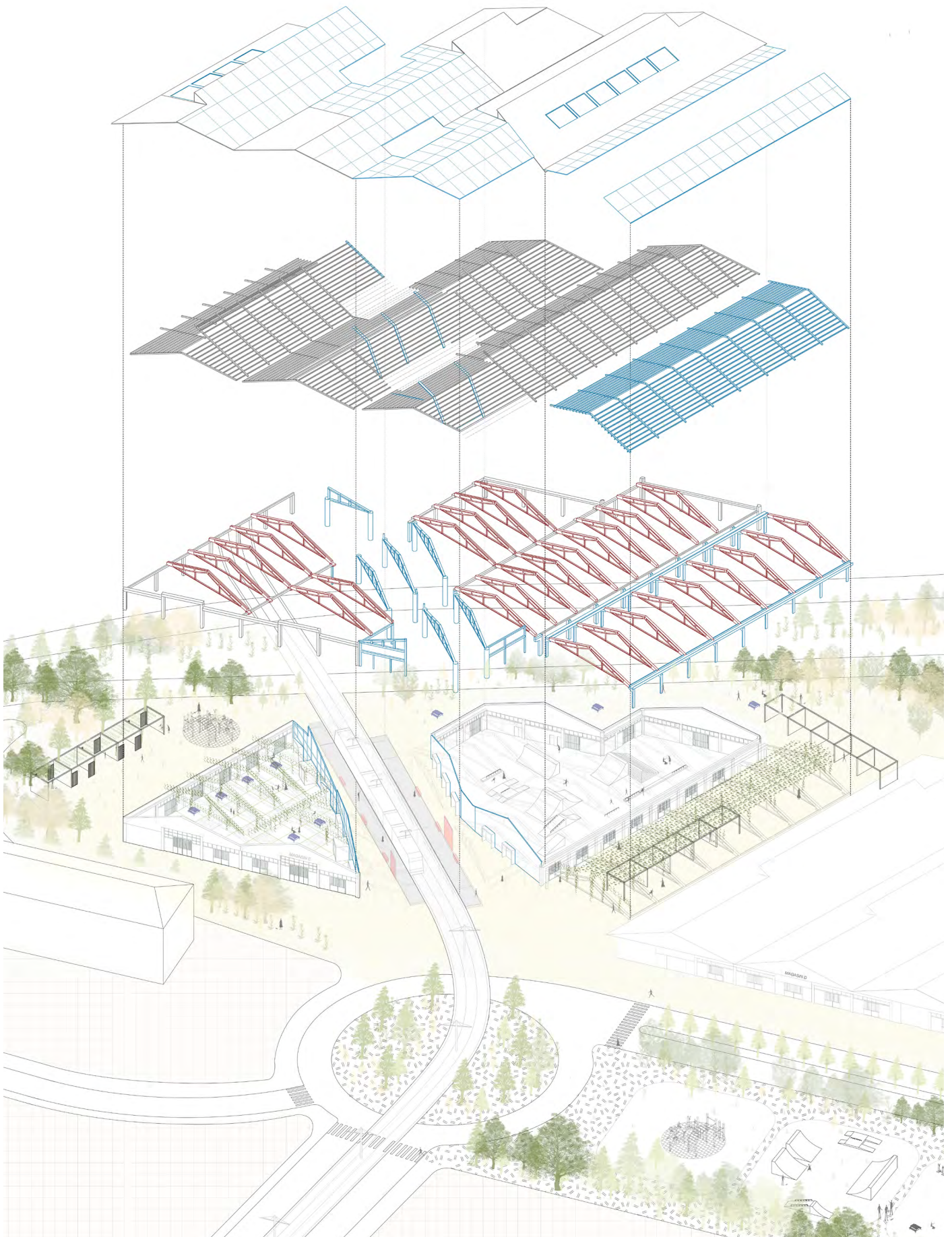


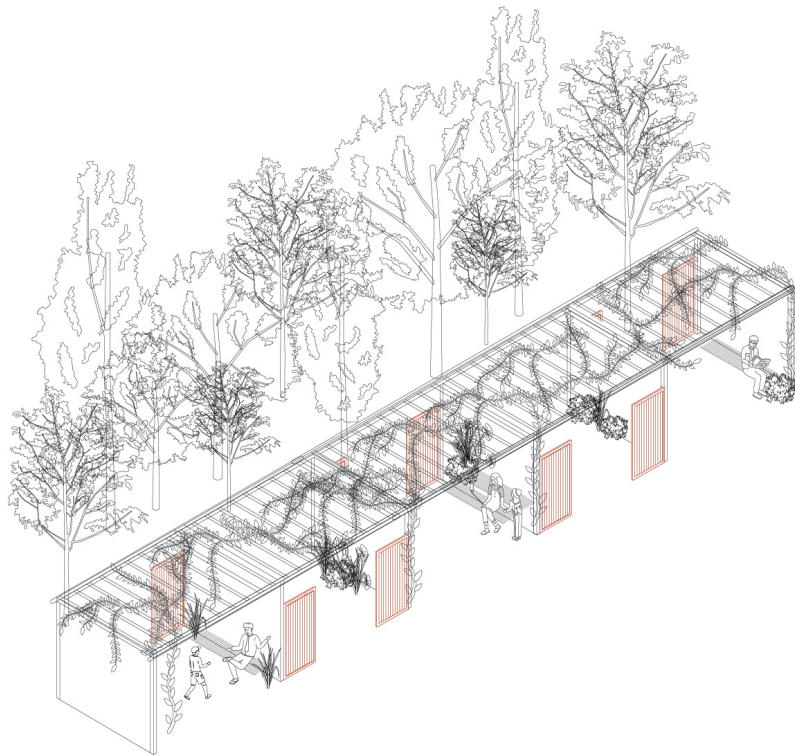
*Solid blue is the new structure and the Red line are old one.
Rafters are above them to work as a base to hold the transparent roof that is added to the station and some parts of the green-house area*



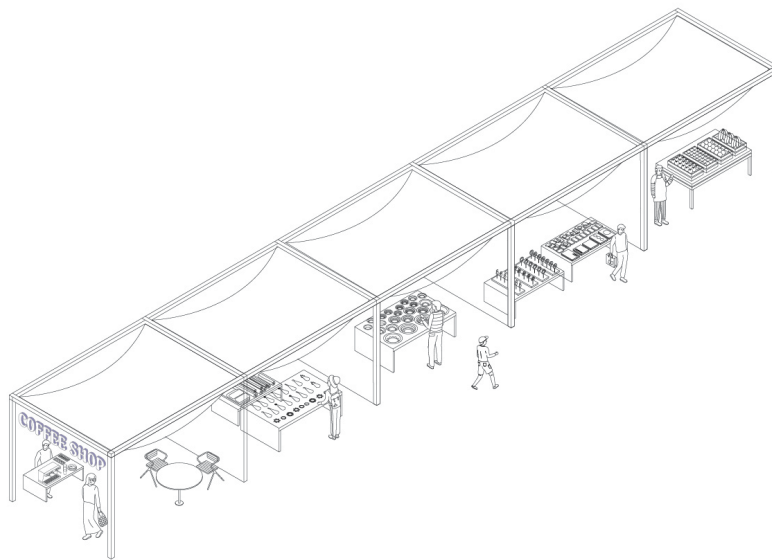








Because of the tram line, some parts of the facade must be removed. However, the doors preserve as an iconic part of the building and are re-used in recreational areas.

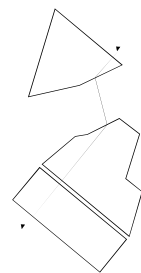


The temporary local market is considered in the new passage (space between two buildings)

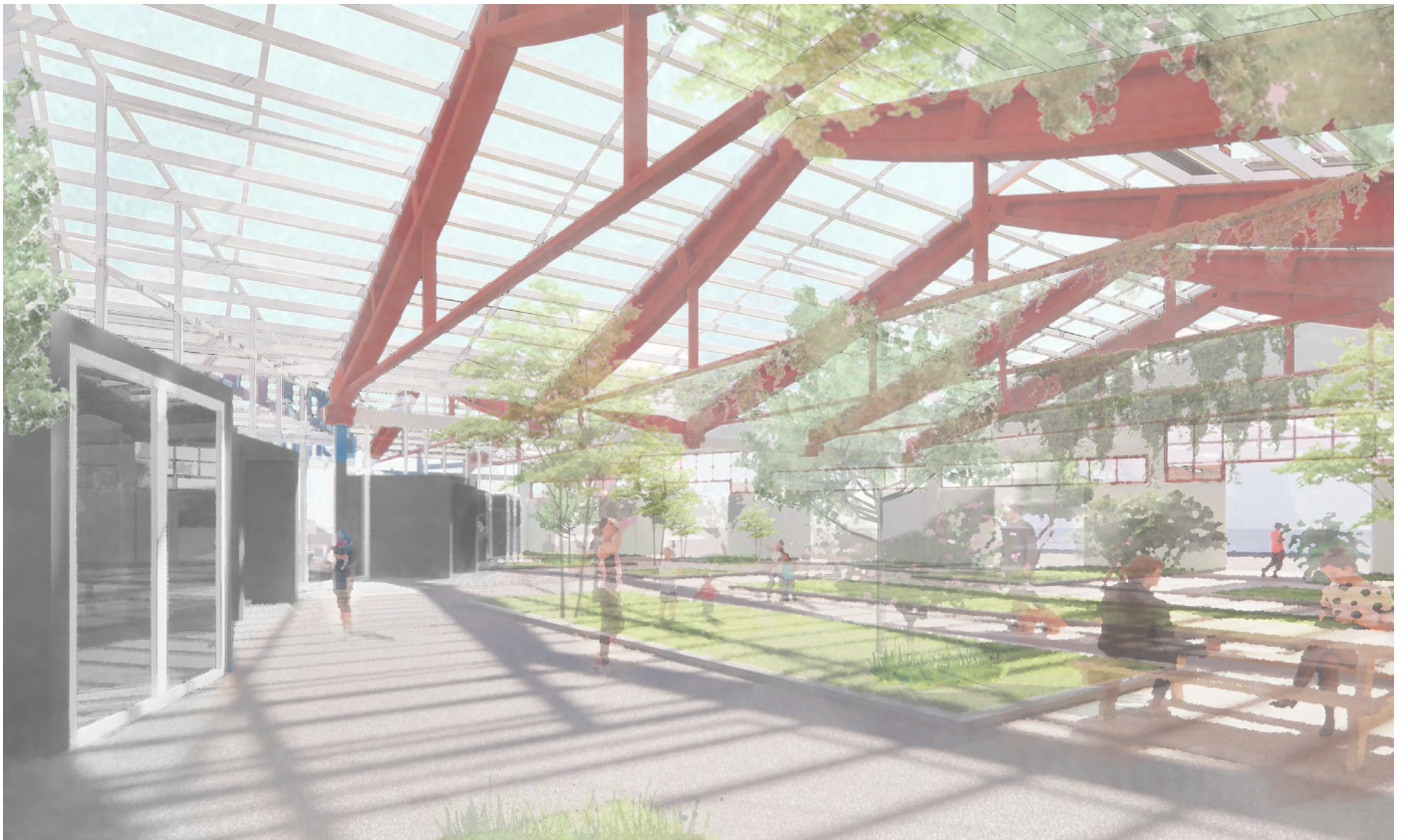


Creating different spaces for people to hang out, a playground for children with some outdoor sports facilities to improve social activity in the area.









Reflection

The first question was the reasoning behind the proposed demolition of a building in a rapidly developing area. Despite recognizing the potential of this space, its destruction compelled me to investigate the possibility of preserving the building. The neighboring building, considered a heritage site, served as a benchmark for the value of the building. Therefore, the building should be preserved as cultural landmark.

So I came up with this question. How can the Magasin E building be adapted to fit the future development of Frihamnen?

The challenge of incorporating the building into future development plans necessitated exploring the surrounding environment and anticipating future needs in the area. I also considered the popularity of the skate park housed within the building. The site's location near a park informed the final proposal, which included green spaces inside and outside the building.

I proposed removing a structure to resolve the tram station issue. However, the study found that the outcome is not limited to the building but has a direct relationship with its surroundings. Thus, a unified space was created by repurposing materials and structures, transforming the building into a functional urban space.

In conclusion, this study highlights the importance of preserving and incorporating cultural landmarks into future development plans. Furthermore, the proposed solution demonstrates how creative problem-solving can lead to sustainable, community-oriented urban spaces.

Bibliography

Literature:

- Bloszies, C. (2013). Old Buildings New Designs: Architectural Transformations. Princeton Architectural Press.
- Calomfirescu, Denisa-Iuliana. (2020). Industrial heritage adaptive re-use post-occupancy evaluation- searching for a new purpose in a puzzled context: Romania.
- Frey, P., Dunn, L., Cochran, R., Spataro, K., McLennan, J. F., DiNola, R., Tallering, N., McDaniel, E., Haas, D., & Heider, B. (2011). The Greenest Building: Quantifying the Environmental Value of Building Reuse. Preservation Green Lab, National Trust for Historic Preservation.
- Jia, Xin, "Transformation of Industrial Space. " Master's Thesis, University of Tennessee, 2010
- Jacobs, J. (1961). The Death and Life of Great American Cities. New York, NY: Random House
- Trancik R. Finding Lost Space: Theories of Urban Design. New York: Van Nostrand Reinhold; 1986. Chapter1
- Wilson, J. Q., and Kelling (1982). Broken windows. Atlantic Monthly 249, 29–38.

website:

- https://www.stocorp.com/adaptive-reuse-architecture/?utm_source=rss&utm_medium=rss&utm_campaign=adaptive-reuse-architecture
- <https://www.designboom.com/architecture/group-a-smederij-ndsm-amsterdam-01-07-2015/>

Images:

- Figure 01, Images of Frihamnen Area. Retrieved from: <https://www.mistraurbanfutures.org/sv/projekt/kli-matanpassad-stadsstruktur-scenarier-f%C3%B6r-framtida-frihamnen-pilotprojekt-2010-2011>
- Figure 02, Santa Caterina market, Barcelona. Retrieved from: <http://www.mirallestagliabue.com/project/santa-caterina-market-renovation/>
- Figure 03&04 Argo factory (Before and after), Tehran,IR. Retrieved from: <https://www.dezeen.com/2022/05/08/argo-factory-museum-tehran-asa-north/>
- Figure 05, Tate modern art museum. Retrieved from: <https://www.herzogdemeuron.com/projects/263-the-tate-modern-project/>
- Figure 06, Smederij NDSM completed faced. Retrieved from: <https://www.designboom.com/architecture/group-a-smederij-ndsm-amsterdam-01-07-2015/>
- Figure 07, High line view from above, New York. Retrieved from: <https://www.thehighline.org/about/>
- Figure 08, Creating map of Gothenburg's harbour based on data from Port of Gothenburg website. Retrieved from: <https://www.portofgothenburg.com/about-the-port/history-of-the-port/history-in-pictures/?areas=&min=1810&max=2002>
- Figure 09, Mapping buildings based on years. GIS data
- Figure 10&11, A large warehouse (parking lots nowadays). Retrieved from: <https://www.google.com/maps/place/Anders+Carlssons+gata+11,+417+55+G%C3%B6teborg/@57.7078783,11.9474247,17.38z/data=!4m6!3m5!1s0x464ff35b712ca63b:0x9d8e5f5e5b1b9454!8m2!3d57.7076946!4d11.9469979!16s%2Fg%2F11c4y95h66>
- Figure 12, Plåtverkstaden building. Retrieved from: <https://www.google.com/maps/place/Valde-mar+Nor%C3%A9ns+gata+19,+417+55+G%C3%B6teborg/@57.7084376,11.9474503,17z/data=!3m1!4b1!4m6!3m5!1s0x464ff35c7a0101a3:0xd4ad6ec3dce2666d!8m2!3d57.7084354!4d11.9494358!16s%2Fg%2F11c5k53wpj>
- Figure 13, Kraus, B. (2023). *M-verkstaden*. Gothenburg, Sweden.
- Figure 14, Frihamnen(1998) Retrieved from: <https://www.portofgothenburg.com/about-the-port/history-of-the-port/history-in-pictures/?areas=frihamnen&min=1810&max=2002>
- Figure 15, Storage of coffee, Frihamnen, magasin XIX. Retrieved from: <https://digitaltmuseum.se/021015756788/lagring-av-kaffe-frihamnen-magasin-xix>

- Figure 16, Magasin XV in Frihamnen. Retrieved from: <https://digitaltmuseum.se/021015756801/magasin-xv-i-frihamnen-byggt-1938-bilskjul>
- Figure 17, Document of Magasin buildings.
- Figure 18, Future tram line in Frihamnen. Retrieved from: <https://goteborg.se/wps/portal/start/goteborg-vaxer/sa-planeras-staden/plan-och-byggprojekt?uri=gbglnk%3Agbg.page.bb7386fd-1152-47cb-9da4-d06bd7780a77&projektid=BN0847%2F20>
- Figure 19, public space view in MFO park Retrieved from: <https://www.metalocus.es/en/news/revisiting-90s-mfo-park-zurich>
- Figure 20, Maschinenfabrik Oerlikon, Zürich. Retrieved from: https://en.wikipedia.org/wiki/Maschinenfabrik_Oerlikon
- Figure 21, MFO park, Zürich Retrieved from: <https://www.jakob.com/uy/en/references/mfo-park>
- Figure 21&22, Interior and exterior of building structures MFO Park, Zürich Retrieved from: <https://www.metalocus.es/en/news/revisiting-90s-mfo-park-zurich>
- Figure 23, Elevation of MFO park Retrieved from: <https://burckhardt.swiss/en/project/mfo-park-zurich/>
- Figure 24, Evergreen Headquarters landscape. Retrieved from: <https://www.archdaily.com/241503/ever-green-brick-works-diamond-schmitt-architects>
- Figure 25, Existing old structure in project. Retrieved from: <https://www.archdaily.com/241503/ever-green-brick-works-diamond-schmitt-architects>
- Figure 26, Mill De Porre textile factory after transformation Retrieved from: <https://divisare.com/projects/316066-vandriessche-architecten-conversion-of-old-factory-de-porre-to-city-park-ghent>
- Figure 27, The remnants of the underlying structure stand in stark contrast to the network of paths and organic green spaces that now occupy the area. Retrieved from: <https://divisare.com/projects/316066-vandriessche-architecten-conversion-of-old-factory-de-porre-to-city-park-ghent>



MAGASIN E