

**REVITALIZATION OF THE INDUSTRIAL
HERITAGE**

Joanna Grygosińska

*I dedicate this work to my family and friends
who work hard to change the world for the
better.*

Title: Revitalization of a post-industrial facility in Wrocław

Project subject: Revitalization and extension of the building complex after the former tram depot with the addition of new social, cultural, commercial and service functions.

Location: Former tram depot at ul. Legnicka, Popowice housing estate, Wrocław, Poland

Area subject to revitalization: The former tram depot between Legnicka, Wejcherowska, Lutra and Milenijna streets - area of about 27000m² and the area of the Popowice district - about 800,000m².

Goal:

Revitalization of the former tram depot at the Popowice district in Wrocław and transformation into a modern cultural, integration, commercial and service center with particular emphasis on the needs of children, the elderly and children with disabilities.

LIST OF CONTENTS:

1. LOCATION

2. ANALYSIS

3. CONCEPT

4. DESIGN

5. CONCLUSION

Czech Technical University in Prague, Faculty of Architecture

ASSIGNMENT of the Diploma project

Master degree

Joanna Grygosińska

Date of Birth: 02.01.1995

Academic Year / Semester: 2020 / summer semester

Department Number / Name: 15/28

Diploma Project Tutor: doc. Ing. arch. Petr Kordovsky

Diploma Project Theme:

See the Application Form for DP

Revitalization of the industrial heritage - tram station on the Legnicka street in Wrocław

Assignment of the Diploma Project:

1/description of the project assignment and the expected solution objective

2/description of the final result, outputs and elaboration scales

3/list of further agreed-upon parts of the project (model)

To this list further attachments can be added according if necessary.

- 1) Revitalization of the historical Popowice Tram Station and it's impact on the surrounding. The aim of the project is to create new community space that promotes interaction between people.
- 2) Final output:
 - plans, elevations, sections (scale depending on scheme of the project)
 - detailed drawings
 - physical model
 - structural details
 - visualizations of proposed design
 - schemes and analysis
- 3) Working scheme:
 - site description
 - analysis
 - schemes
 - design programme and site zoning
 - form analysis
 - planning of the design (processing)
 - finalizing of the plans and schemes

Date and Signature of the Student: 5.03.2020

Joanna Grygosińska
[Signature] 5.3.20

Date and Signature of the Diploma Project Tutor:

Date and Signature of the Dean of FA CTU:



CZECH TECHNICAL UNIVERSITY IN PRAGUE FACULTY OF ARCHITECTURE

AUTOR, DIPLOMANT: Joanna Grygosińska
AUTHOR OF THE DIPLOMA WORK / DIPLOMA PROJECT
Academic Year 2020, Summer Semester

TITLE OF THE DIPLOMA WORK / DIPLOMA PROJECT
(IN CZECH LANGUAGE)

TITLE OF THE DIPLOMA WORK / DIPLOMA PROJECT
(IN ENGLISH LANGUAGE) Revitalization of the industrial heritage

LANGUAGE OF THE DIPLOMA WORK / DIPLOMA PROJECT:

Diploma Work
/ Diploma
Project
Supervisor

Ústav: Department Atelier Kordovsky - Vrbata

doc. Ing. arch. Petr Kordovsky

Diploma Work
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Opponent

Key Words
(Czech)

architecture industrial heritage revitalization tramstation communitycenter culture historical place

Annotation
(Czech)

Annotation
(English)

This work is about the need to restore the local community of post-industrial areas - devastated and currently useless, which, after proper revitalization, can serve residents and fulfill completely different tasks. In the globalized world of big cities, the aspect of locality takes on a completely different new meaning. It is sought the more the larger is the city and the stronger is its urban structure. Creating new and multifunctional local centers on the outskirts of large cities is a demanding task, not only because the architectural and functional concept must hit the tastes of local residents, but also because the project must be woven into existing urban tissue and be a continuation and enrichment of existing urban structure and architecture. This work is to make dreams about functional, sustainable and friendly cities for all social and age groups as well as disabled people whose social and creative needs are often overlooked. But it is also a project that aims just to create a aesthetic and attractive place for residents.

The Author's Declaration

I declare that I have elaborated the submitted diploma work / diploma project independently and that I have stated all the used information sources in coherence with the "Methodological Instruction for Ethical Preparation of University Final Works".

(The complete text of the methodological instruction is available for download on <http://www.fa.cvut.cz/En>)

In Prague on 15.06.2020

Signature of the Diploma Project Author

This document is an essential and obligatory part of the diploma project / portfolio / CD.

Joanna Grygosińska



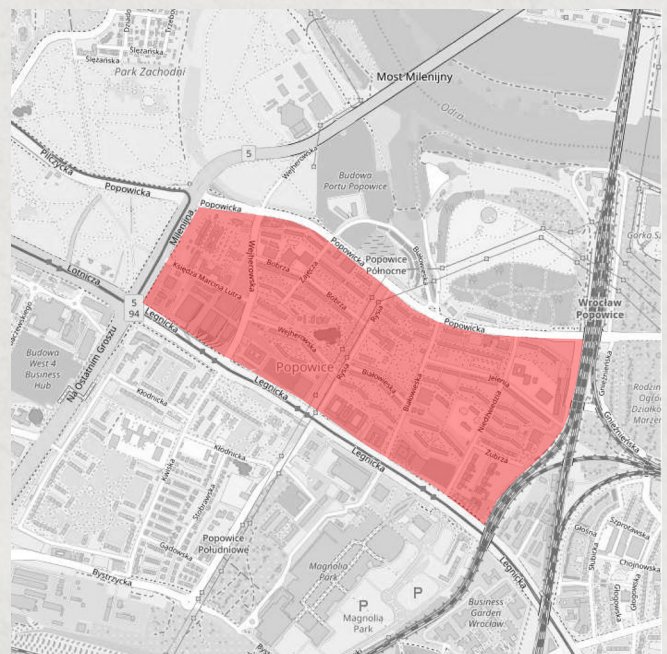
Popowice is a historical area in the western part of Wrocław. The name is originally taken from German name Pöpelwitz. The chosen site is located between the river Odra on the north, Zachodni park on the west, Legnicka street on the south and the railway station on the east.

The district of Popowice has been initially part of "Fabryczna" one of 5 main neighborhoods of the city of Wrocław. Fabryczna means literally "industrial district", what was determined by industrial character of the area. After the administration reform from 1999, municipalities got more rights and fund to provide own politics. Also, the division of the city changed. Instead of 5 big neighbourhood (of over 100 thousand inhabitants each), the city was divided into 48 districts. Since that time Popowice became part of district "Pilczyce-Kozanów-Popowice Północne".

The population of the district is officially around 33500 people (drop by 7,7% between 2008 and 2017). Number of flats is 16143 (in 2017). It is currently 3rd biggest district in Wrocław. We can suppose that around half of the population lives in analysed area of Popowice. Also, we are not sure about exact number of inhabitants due to the strong suburbanisation phenomenon (that is why official number of inhabitants drops) and simultaneously influx of people from

smaller town as well as foreigners. Nonetheless, the development of the area is seen.

The district is relatively close to the city centre. The rebuilt of Legnicka street in 1980s, which is main entrance to the city from the west, linked Popowice with old town and provided great tram connection. Also, Popowicka street on the north is wide and being developed by construction of tram line. There is also a new train stop located on the railway line. However, streets inside the neighborhood did not change much. Most of them was built of stone cubs at the beginning of 20th century. Their condition is usually bad as well as paths between building are damaged and very often used as a parking.



BEFORE 1945

Initially, the village of Popowice belonged to the abbey of St. Vincent on Ołbin. In 1260, dukes Henry III and his brother Władysław got the property of the village of "Popowici" by exchange for "Pawłowice" village and immediately sold it to the Wrocław townsman Konrad Bawarczyk.

In 1335 whole region became part of Czech Kingdom, then in 1526 the Hapsburg Empire and in 1741 Wrocław as Breslau became part of Prussia and unified Germany in 1870.

In the 18th century, Popowice was the seat of a Wrocław bishop, and after the Seven Years' War a shelter of the famous bandit - the local Robin Hood. At the end of the century they became a popular destination for trips. From the mid-nineteenth century, there operated the first omnibus pulled by horses.

In 1853, a private mental illness treatment center was opened in Popowice. He operated under the supervision of Dr. Neumann, a professor of the University of Wrocław. The quality of healthcare was widely known throughout the region.

In 1856 Popowice was opened a railway route to Poznań, what determine fast industrial development of whole western part of the Wrocław.

The largest investment of the time was the city slaughterhouse designed by architect Georg Osthoff in 1893-1896. It took 20 ha and it had its own railway connection. Till the World War I it was one of the most modern city slaughterhouses in Europe. It survived both wars and functioned until 1999.

The village of Popowice was incorporated into Wrocław in 1897. However, its real development took place in 1919-1927. A large housing estate of multi-family houses was built in the fields of Popelwitz. It had an area of 47 ha and could hold 8 thousand residents. Its center was today's Kłodnicka street.

Five-storey buildings in the modernist style arose around the square there and within years most of the neighbourhood was built-up.

To imagine this part of Pöpelwitz, you need to run a large dose of imagination. The area currently occupied by the clinic surrounded by lawns before 1945 was able to charm, especially those who were in love with Wrocław modernism. The culmination of the corner of Wejherowska and Legnicka Streets was the thoughtful implementation of Moritz Hadda, a student of Hans Poelzig. He was an extremely creative and talented architect. The cubist form of Haddy was ordered by the Karlsruhe Insurance Company. Unfortunately, the building did not survive the war, like the architect himself. Moritz Hadda was killed in 1942. A Jewish origin was enough to send him to death at KL Kaiserwald concentration camp.

The whole district was ruined in 1945. On the densely built-up Legnicka street only three tenement houses have survived the war. The rest was destroyed during the siege of Wrocławu. Popowice was then the arena of heavy fights due to Soviet offensive.



FROM 1945

Popowice before the war and for many years after the war - as a floodplain in the event of a flood - were not inhabited in its northern part, closer to Odra river. Houses were built along today's Legnicka Street and south of it.

Unfortunately, from the beginning, the estate was planned in areas not intended for development. Due to the closeness of the river and the shape of terrain, yet German authorities planned to leave the area as a floodplain in the event of floods.

Disregarding the threat of floods, in the years 1972-1975, the Popowice housing estate designed by Witold Jerzy Molicki was built between Legnicka and Popowicka Streets. On 70 ha, 4-11-storey buildings from a large prefabricated concrete slab were erected for 17.5 thousand residents. Also, by the river bank there was built so called "house factory" which had provided for 20 years block slabs to all investments in western part of the city.

In 1980s Popowice faced mass protest against communist power. The martial law was introduced in December 1981 and lasted till 1983. During this breakthrough time, important places were always big workplaces, like public communication companies. The tram depot on Legnicka street was one of the gathering places of protesting workers. That time also workers hanged cross in the front of the tram depot building and organized masses, what was unthinkable in the secularized socialist country.

In 1997, a quarter of a century after the Popowice estate was built, it turned out how wrong the decision about its location was. During the millennium flood some blocks at ul. Popowicka were flooded to the height of the first floor.

In the second decade of XXI century there was a huge investment of modernizations of Wroclaw Water Node, which was designed to protect city from floods.

Popowice is one of the most popular locations in the city for both living and working. The district is developing very quickly - roads are being modernized, the new tram connections is being built along Popowicka street, there are bicycle roads. Also new business districts and residential estates are being created in the neighbourhood. Due to the proximity of the river and green areas, shopping mall, recreational areas and relative proximity to the center, this is a place desirable for housing by people of all ages.

The area is densely populated and being changed. The new investments are being conducted including new apartments and offices. As the most of the neighborhood was completed yet in 1970s, there are many local shops and service points for residents. The big shopping mall "Magnolia Park" also provides offer for consumers.

Despite the fact that buildings are usually located with a distance from each other to leave more space for greenery, the green areas were never designed and currently green spaces are chaotic and very often devastated. As it is in fact the city center, the pollution has problems with parking exist.

The Popowice area was designed around 50 years ago and it needs renovation and redesign. Thanks to the great location it is interested for new residents and investors. Currently we need to redefine the structure of the district and design it to be real XXI-century neighborhood, friendly for residents and being important part of the city.

HISTORY OF TRAM DEPOT ON LEGNICKA STREET

In 1876, the company Breslauer Strassen-Eisenbahn Gesellschaft (BSEG) was founded. It was the first tram company in Wrocław. At first, the company developed a tram network, built tracks and used horse-drawn tram cars. Its depots were placed in the western parts of Wrocław. Gradually, the company had started switching from horse-drawn to electric transport.

In 1899 an agreement was signed with the city authorities regarding changes in connections on BSEG lines. Work began on the electrification of the line. The company bought a plot in Popowice at Legnicka Street to build a depot for electric trams. In 1900 a water tower and a service building were built there. The depot building and repair halls were built in years 1901-02.

Two parking halls were built and a large workshop room behind them. The administrative building (currently nonexistent), as well as a small residential building were located on the northern side. A water tower was built between the parking halls on the northern side. A double-track workshop position was placed between them.

The architecture of the building referred to historicism. The buildings had many elements of neo-gothic architecture.

In 1911, BSEG was bought by the municipal carrier Städtische Strassenbahn Breslau (SBB), the depot then came under the management of the municipal carrier. In 1939 SBB was renamed to Breslauer Verkehrsbetriebe (BVB).

Around 1915, a rectangular building (length 15.77 meters; width 4m) was added from the total side for a boiler room.

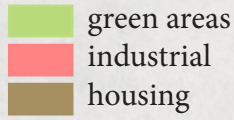
Originally, the pressure tower was 4-storey, on top of the highest spiral stairs. At the top there were two tanks with a capacity of 2500 liters each. The first three floors were made of brick (clinker brick), the upper part was built in a half-timbered and transom arrangement with a hip roof covered with tiles. Around 1933 the tower was rebuilt. The last floor with water tanks has been removed. The 3-storey towers were taken over, everything was covered with a tent roof. A clock was installed at the height of the second floor.

After the Second War in 1945 in the destroyed Wrocław, the Communication Department of the city of Wrocław were established. As a result of the war damages, until May 6, 1946, there was no tram connection with depot number V in Popowice. In 1951, there was established the Municipal Transport Company - MPK, operating to this day.

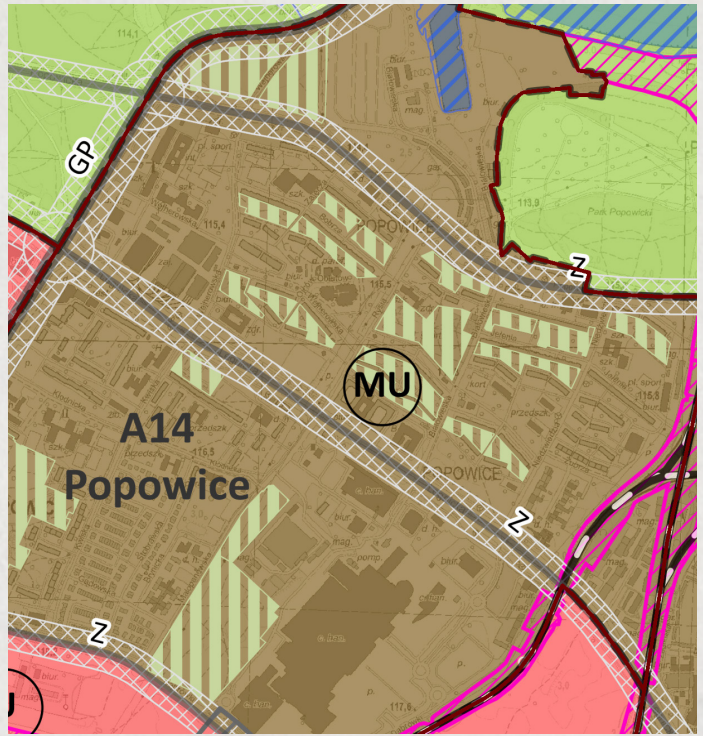
As a result of the siege in 1945, the factory boiler room, the administrative building, the pressure peaks with the clock were destroyed. Until the mid-1960s, the depot's halls were used as a parking for trams. Then whole area was arranged to be a tram repair plant. In 1990s buildings became a headquarter of the PROTRAM company, which produced and repaired trams until 2013, when the company was liquidated due to financial problems and lack of orders.

LOCATION AND CONSTRUCTION OF THE BUILDING

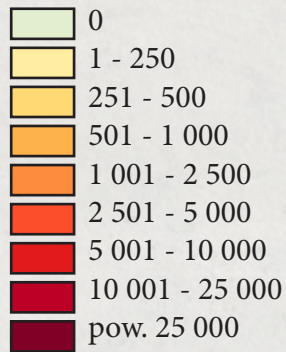
The depot building is located in the western part of the city. The plot for this area is located between Legnicka St. from the south, Wejcherowska St. from the north and east and Milenijna St. (inner city bypass) from the west. On the southern and eastern side, the depot is surrounded by built-up residential and public buildings built after 1945. On the northern side, it contains a complex of about 5 buildings built before World War II, where currently operates school for handicapped children, high school and the medical center. From the western side there is a gas station, furniture shop and behind Milenijna street Park Zachodni – the biggest park in the western part of the city. The basic building material is ceramic clinker and facing brick, concrete, wood and iron. The load-bearing and partition walls were made of brick, plastered in the interior. Open roof truss, decked roof and roofing felt. Concrete floors and floors. Wooden and metal window frames.



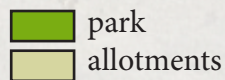
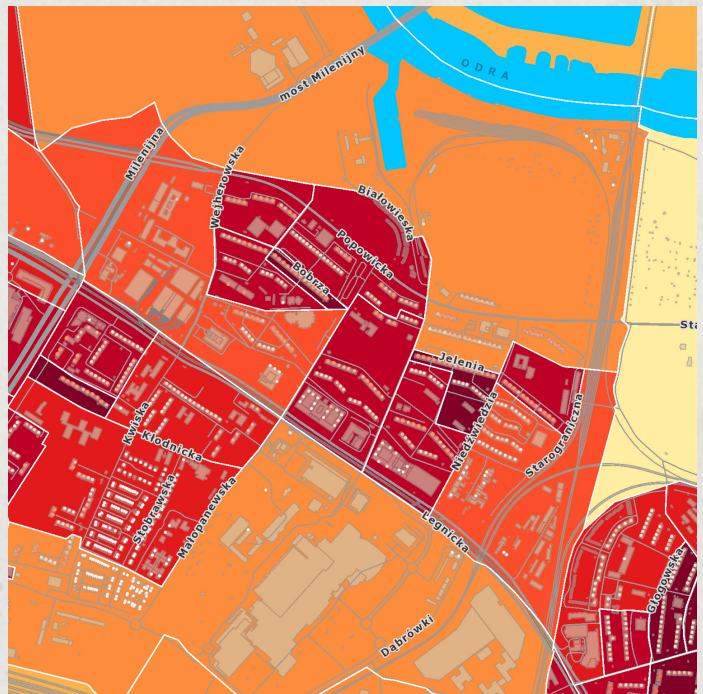
master plan



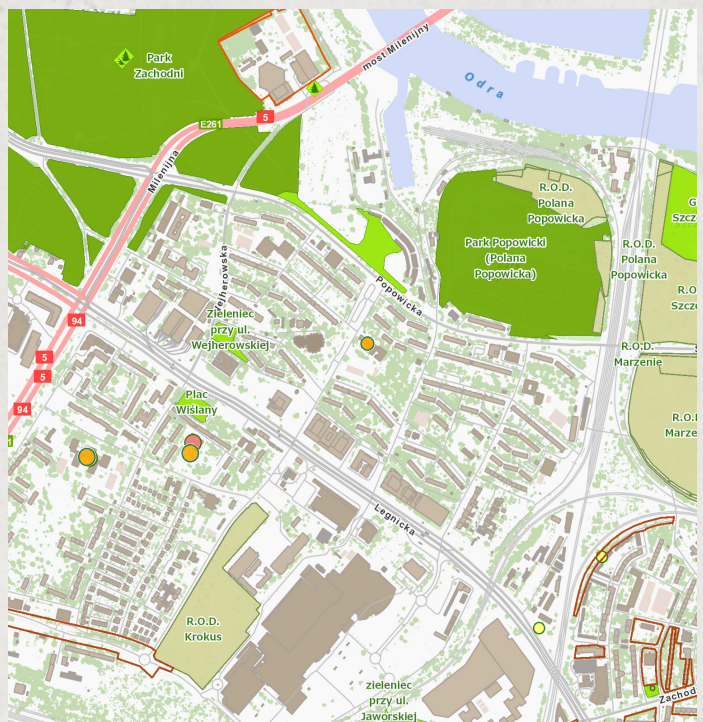
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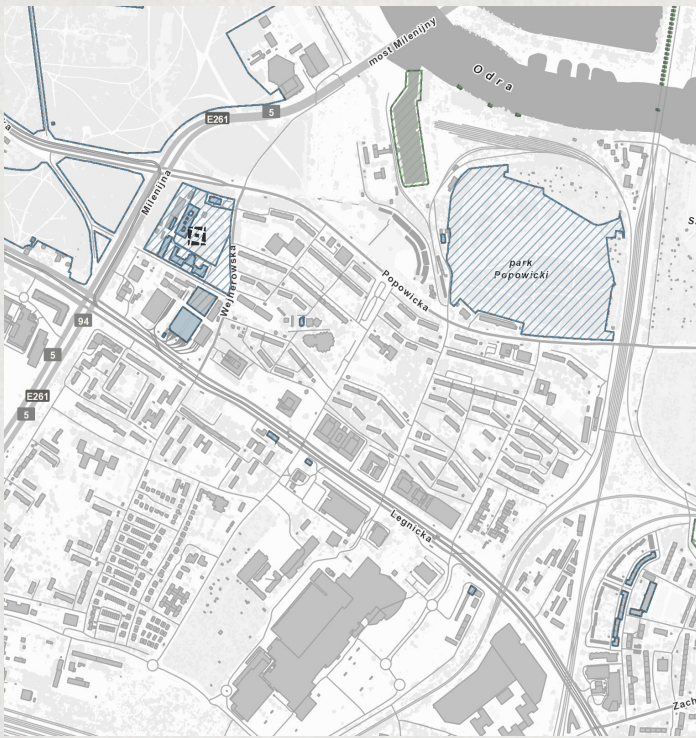


density of population



map of greenery





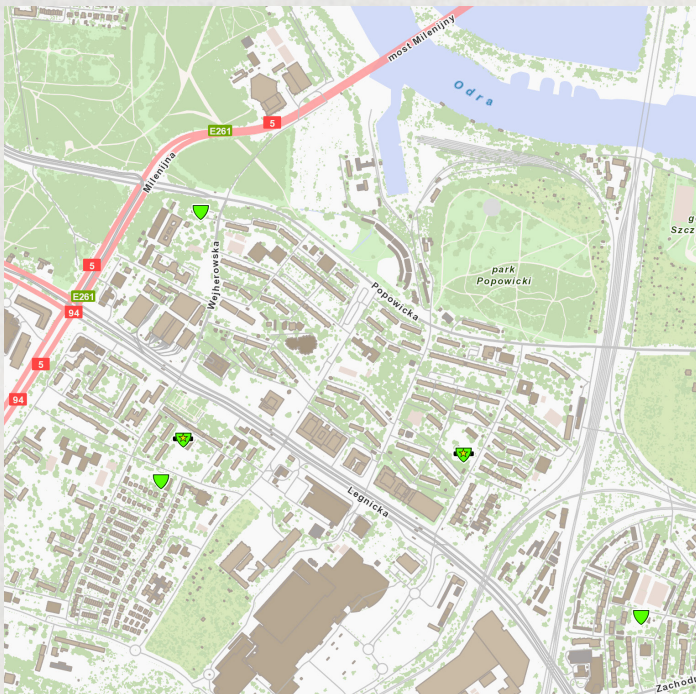
Type of object



-  urban complexes

Protection

-  register of monuments
-  Local Plan
-  other

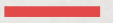
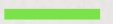
historically protected areas



-  private schools
-  public schools

educational places

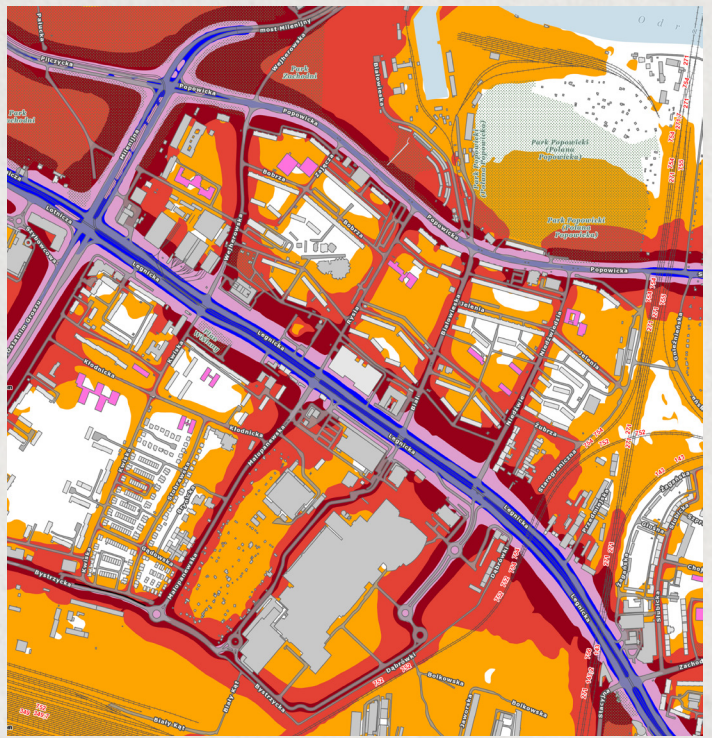


-  car route
-  tram route

map of new city investments

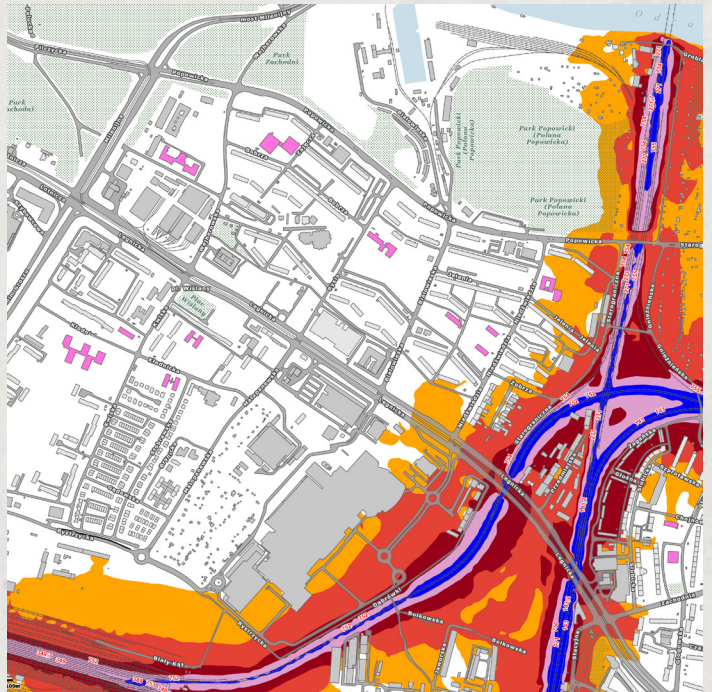
- od 55 do 60dB
- od 60 do 65dB
- od 65 do 70dB
- od 70 do 75dB
- powyżej 75dB

map of noise



- od 55 do 60dB
- od 60 do 65dB
- od 65 do 70dB
- od 70 do 75dB
- powyżej 75dB

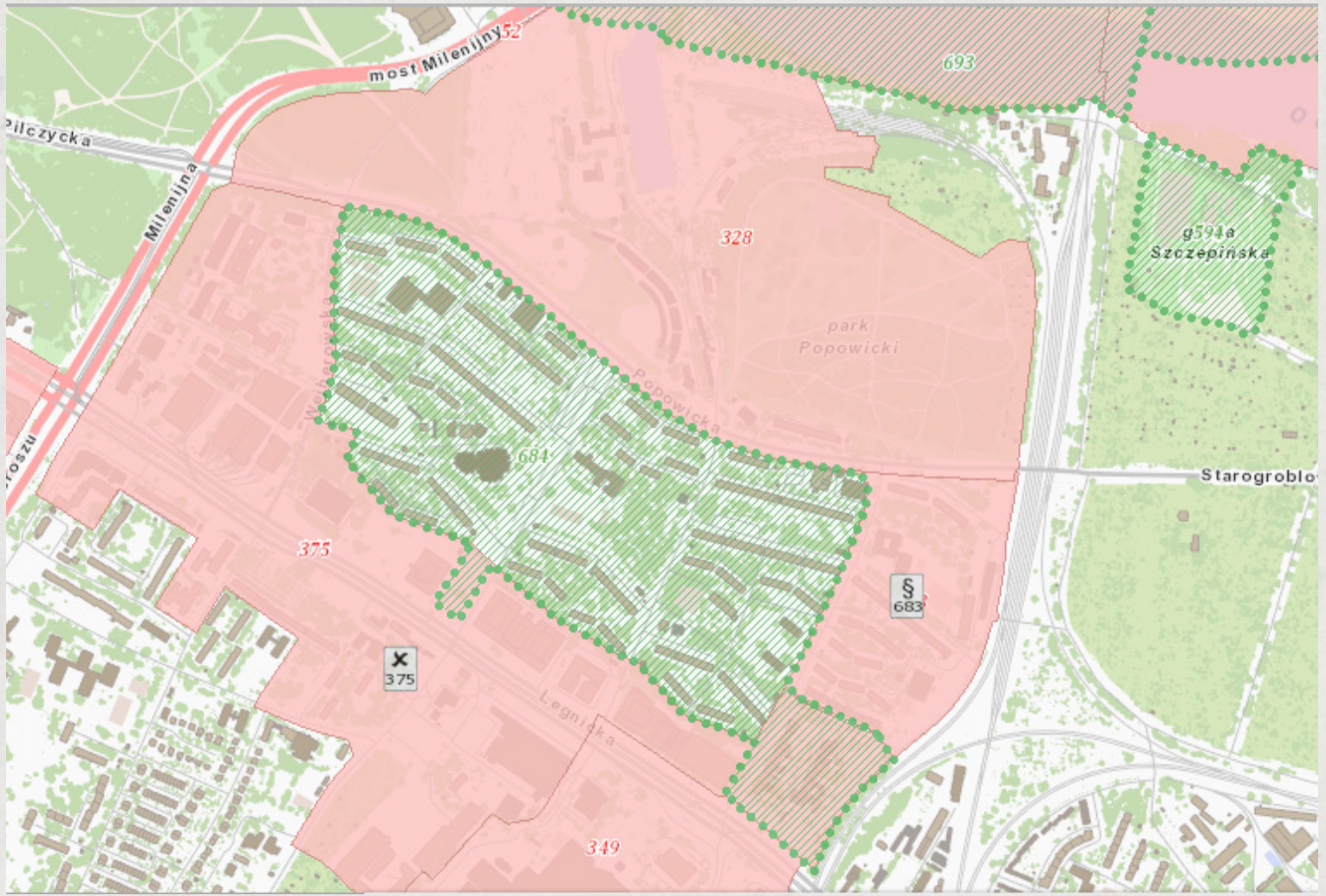
map of train noise



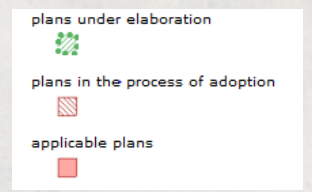
- od 55 do 60dB
- od 60 do 65dB
- od 65 do 70dB
- od 70 do 75dB
- powyżej 75dB

map of car noise

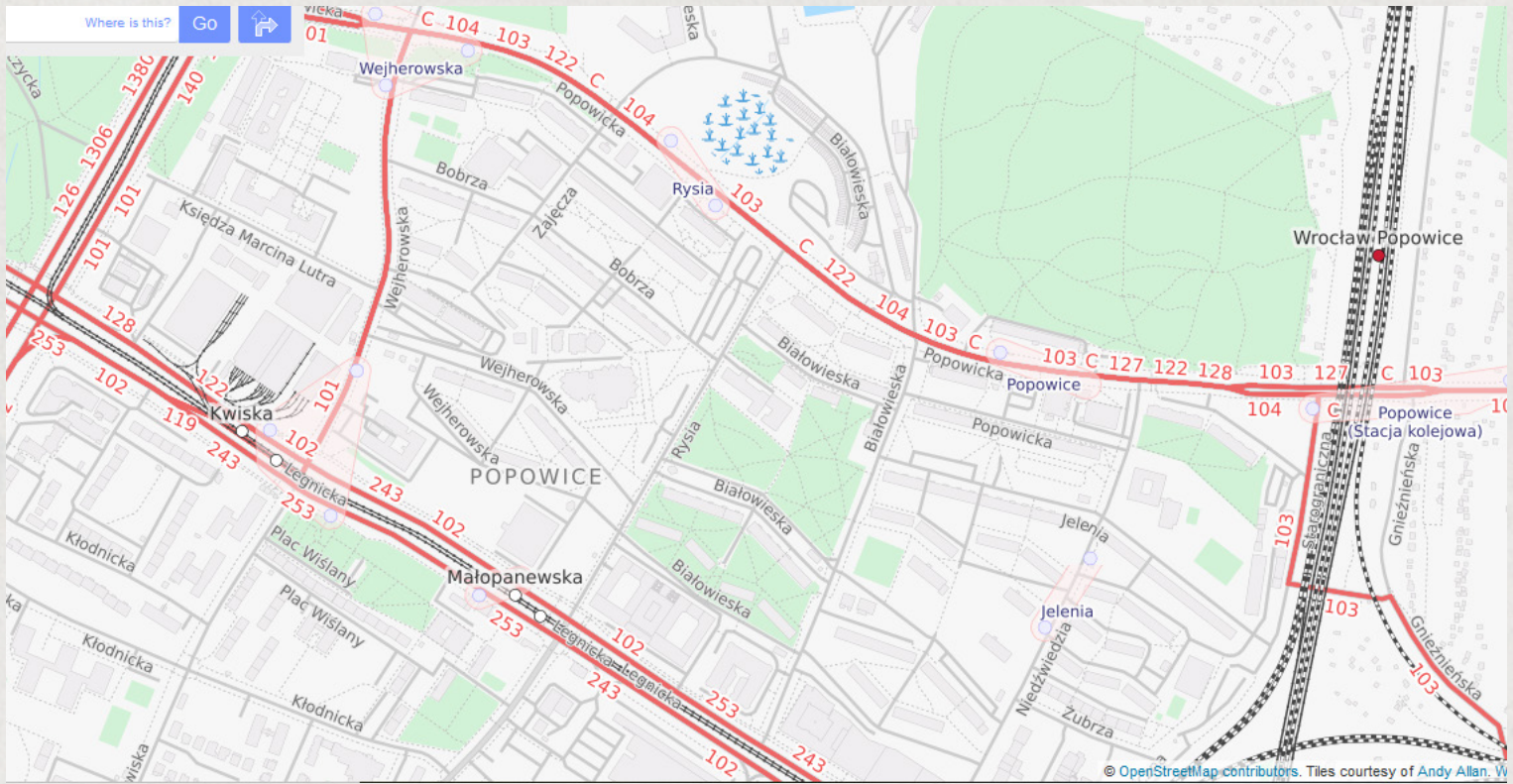




map of terrains under processes



The Popowice district is cut by high voltage



map of trams and buses connections



The map of elevation profiles. Darker colours show taller building (>10-floors block of flats in the district), line along Rysia street.



THR TRAM DEPOT COMMUNITY CENTER




The revitalization of the Tram Depot in Popowice in Wrocław is a response to the lack of a socio-cultural center in the western part of 700-thousand Wrocław. The western part of Wrocław is inhabited by about 1/3 of the city's inhabitants and was created almost completely after World War II. The communist typology of the district did not take into account such rapid urban development. Cultural, educational and sports centers had been located in random places for years, not including the need to build local centers. On the other hand, trade and social life were concentrated in many random points and shopping centers, with no influence on urban planning. Around 2010, there was developed the concept of creating a new center for the western part of Wrocław around the Municipal Stadium (which had been being built that time). However, this was based on the erroneous assumption that the centerpiece of this center would be a commercial mall and stadium with an audience of over 40,000 people. The wider urban aspect was not taken into account, nor was the social voice demanding the construction of a new center in a busy place and close to work and residence.

The Tram Depot in Popowice perfectly meets these requirements. It is located in the heart between large housing estates from the 1970s and 1980s, inhabited by about 100,000 people, along the main communication route (Legnicka Street), as well as at the most important interchange in this part of the city (Kwiska / Legnicka).

In addition, it is a place well known to residents, with its history and surrounded by many points of public interest (parks, schools, colleges, clinics, shops, offices, sports centers).





-  historic building (monument preservation)
-  buildings to remove
-  not specified construction, built after 1945



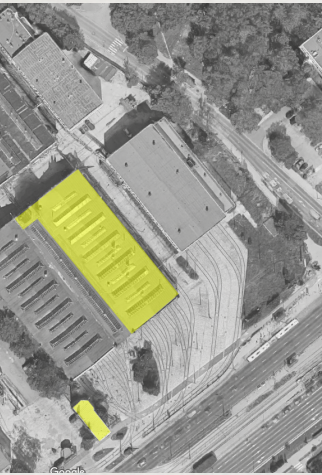
THE RESTAURANT HALL

The restaurant hall responds to the needs of residents and employees of nearby offices and recipients of services for a meeting place. It is divided into small spaces of separate restaurants thriving in an open hall. Along the western wall is a terrace surrounded by a swimming pool.



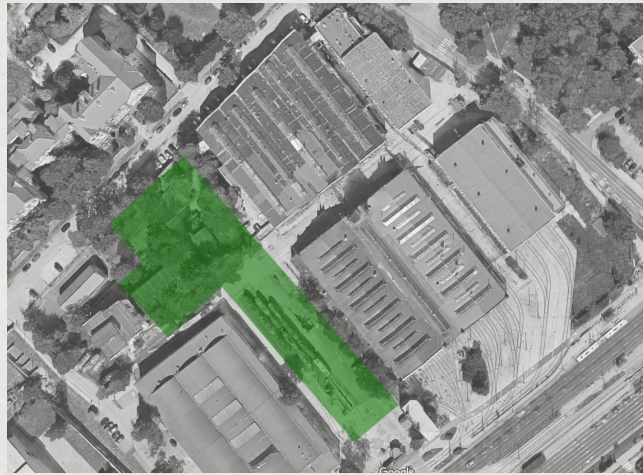
THE MUSEUM OF TRAM

The museum functions as a story of this place. The tram depot was opened in the suburbs of Wrocław in Wrocław for over 100 years. In the 1990s there was a museum here, and many historical and valuable specimens were found in this area so far. The halls for the tram depot allow to preserve the place, as well as modern history. What's more, it's an important museum in Wrocław, especially for the preservation of historic tram and needs a safe place where it will be stored.



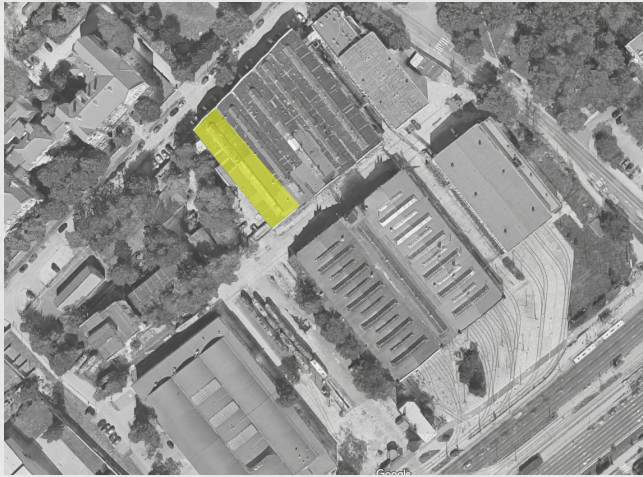
RAMS

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SURROUNDING

The north-west part of the area will be developed for a year-round gastro-nomic market. There are 2 glazed re-restaurant pavilions with the possibility of opening the walls in the summer season and closing them in the winter season, a separate section for children with a fountain and water fountain for children. A beer garden by the former engine room was also separated, se-parated by a curtain hedge from the rest of the area.



THE HALL OF ARTISTIC WORKSHOPS

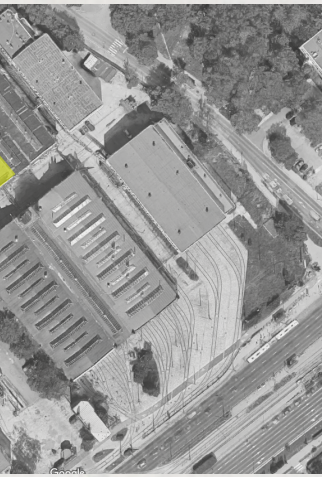
Adaptation of the historic hall to the needs of conducting craft and artistic workshops is aimed at encouraging residents to greater integration, as well as expanding the offer for disabled people. The hall has been adapted to the needs of people with disabilities and children. It includes glass furnaces, metaloplastic, sculpting, pottery and weaving workshops. The building is structurally adapted to the location of heavy machinery, tables and equipment, as well as the possibility of supplying heavy materials (including glass and metals). By glazing the side walls of the studio it is possible to observe the work in the workshop by passers-by.

All 3 halls - workshop, exhibition and market are connected by an openwork ellipse transition that penetrates all buildings. Thanks to that, visitors are encouraged to use all the halls, thanks to openness and easy access.



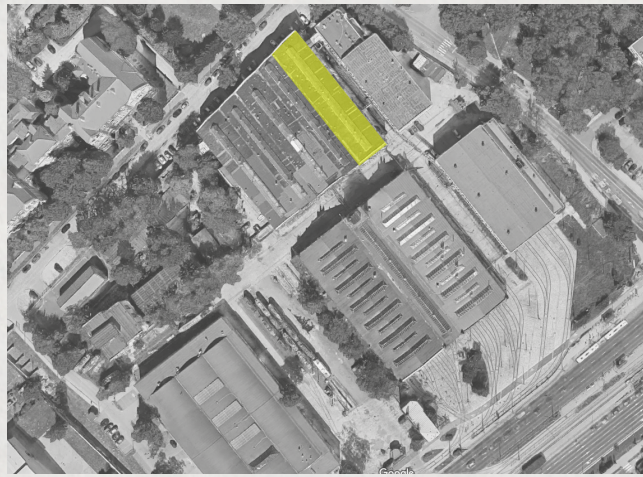
THE EXHIBITION HALL

Due to the lack of public spaces and cultural integration of the city, an adapted parking hall for the exhibition center was designed to organize lectures and conferences located between the halls, which encourage view exhibitions and the upper floor is occupied with a reading room and te bars for readers.



HALL

places for social and
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THE MARKET HALL

Over the past 30 years, trade in Wrocław has moved from streets and small stores to supermarkets and large shopping malls. On the one hand, residents have gained access to products from around the world, but on the other hand they have lost access to local, unprocessed and fresh products. The market hall is a response to the need of the urban society for access to natural and ecological products that the average person cannot get in a supermarket. In addition, it will create a natural flow of people within the Tram Depot. The upper part of the hall is intended for small shops with organic food and service outlets (tailor, shoemaker, etc.). The upper part of the hall is intended for small shops with organic food and service outlets (tailor, shoemaker, etc.).



THE TERAPEUTIC GARDENS

The therapeutic gardens are dedicated to children and adults with disabilities. In Wrocław, there are several special schools for children who need additional care (autism, ADHD, motor disabilities, Down syndrome, etc.). One of them is located on the neighboring Lutra Street. What's more, most schools have integration classes that enable the development of children, including with emotional and motor problems. Also, a large number of elderly and disabled people need additional stimulation that supports treatment. Occupational therapy is extremely important, and one of its forms is sensory gardens. Occupational therapy involves treatment with work, uses various forms of work and recreation as one of the therapeutic measures to accelerate return of lost functions and efficiency, and in cases of irreversible changes obtaining substitute functions. Occupational therapy is one of the forms of treatment improvement, consists of staying in a friendly environment and its active use.

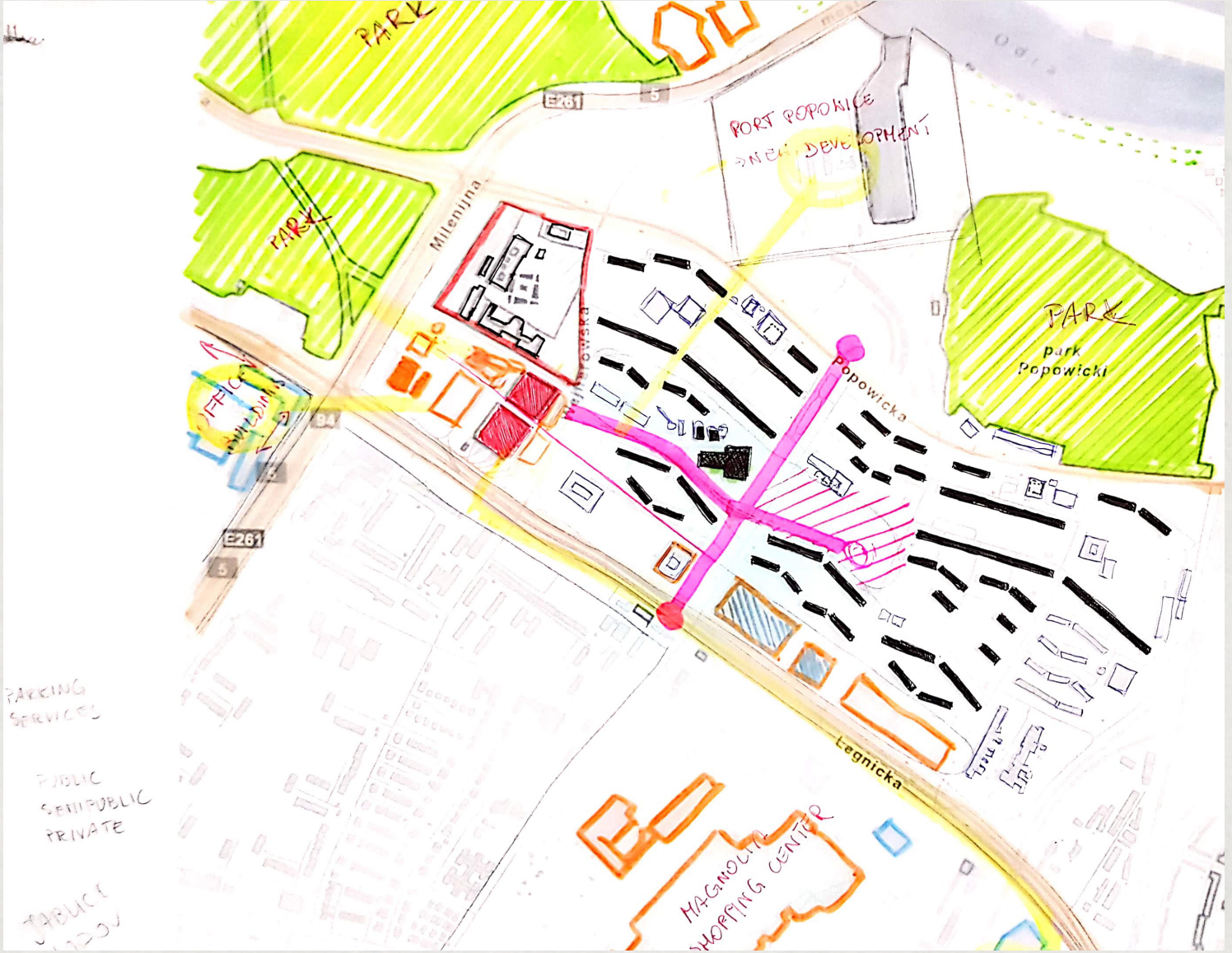
Conclusions about the positive effect of flora on lowering pressure, breaking down barriers mental, minimizing stress and reducing the need for painkillers have been found by many researchers. Contact with nature works at the same time soothing and relaxing, thus fulfilling a relaxing function.

Activity and the ability to observe the effects of work in the garden replaces professional work, gives a sense of usefulness and faith in one's own abilities. Creating space independently means responsibility, but also control. Work in the garden develops muscles, increases endurance and improves coordination and balance. Develops creativity, and also positively affects the well-being of giving a stepping stone from everyday matters.

The designed winter garden is primarily intended to help people with disabilities, especially giving the opportunity to carry out sensory therapy. The garden will include a butterfly house, workshop stands for planting and caring for plants adapted also for wheelchairs and the blind, as well as sensory paths.

The garden is divided into thematic sections depending on the reception of stimulation engages both the sense of sight (colors and shapes, movement of butterflies), hearing (water noise), touch (texture of plants) as well as smell (smells) and orientation in the field.

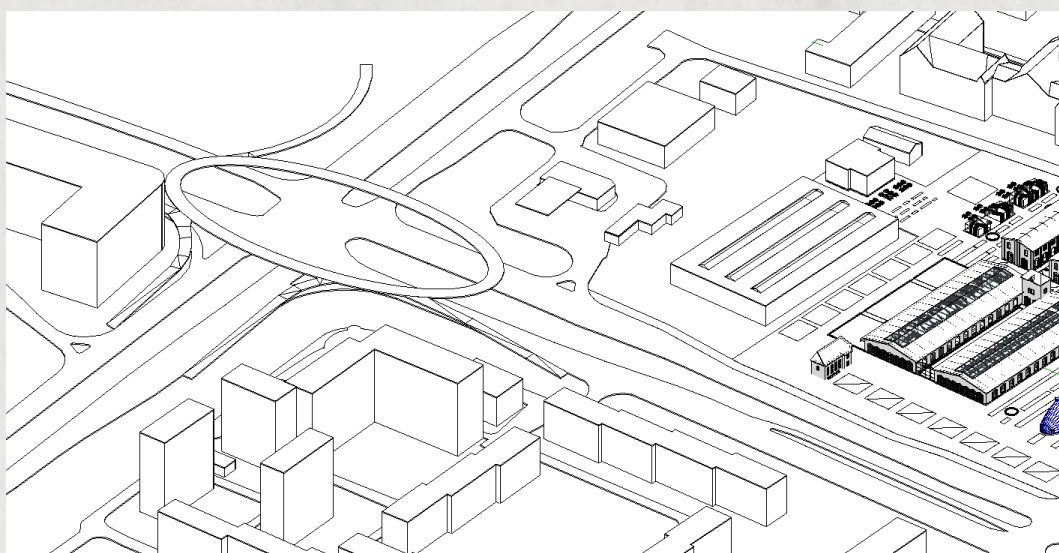
The garden is to be open year-round to local residents and tourists, thanks to which it will become a multi-generational meeting place and one of the main attractions of the western part of Wrocław.

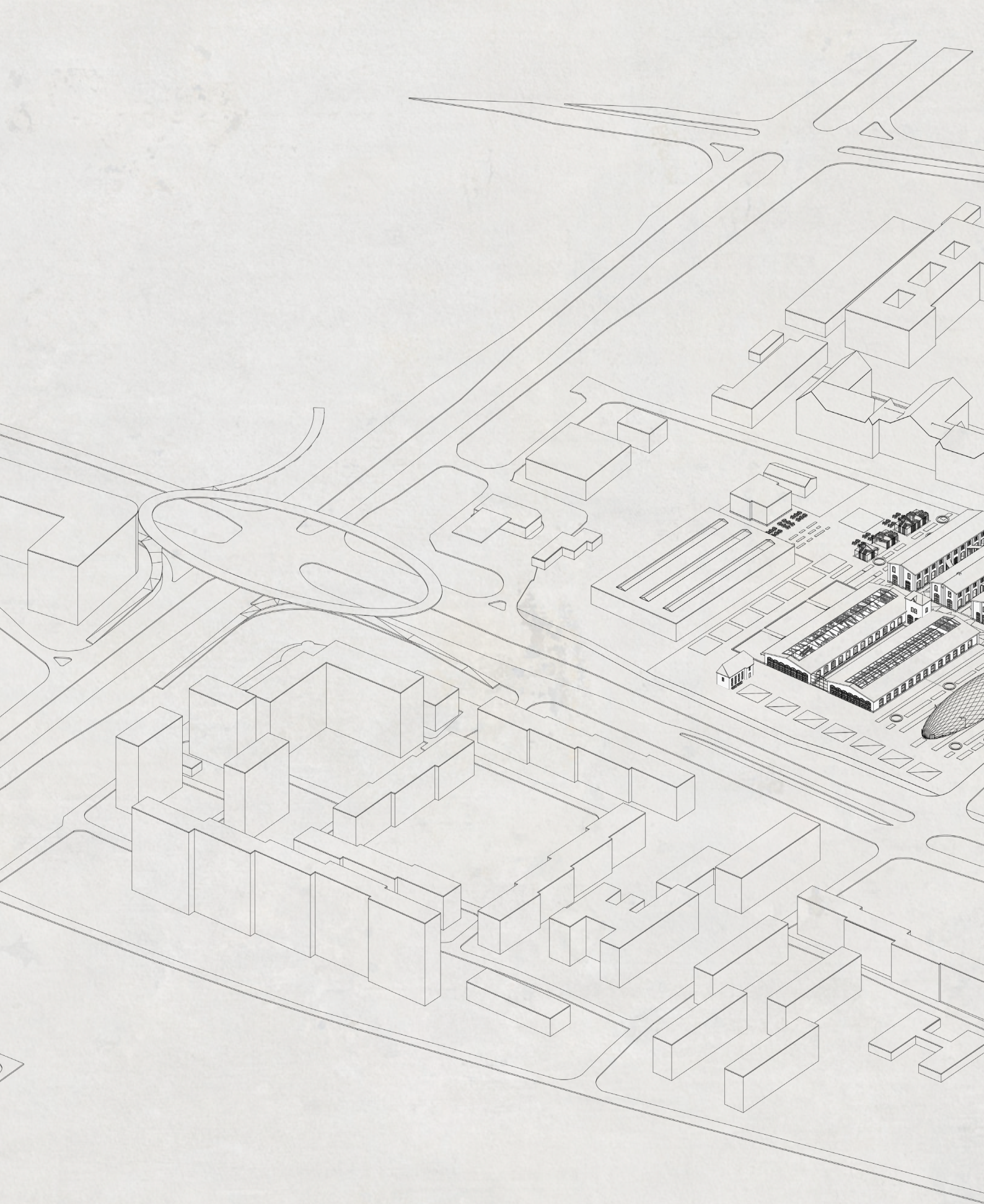


Urban axis of the Popowice and Zajezdnia Tramwajowa

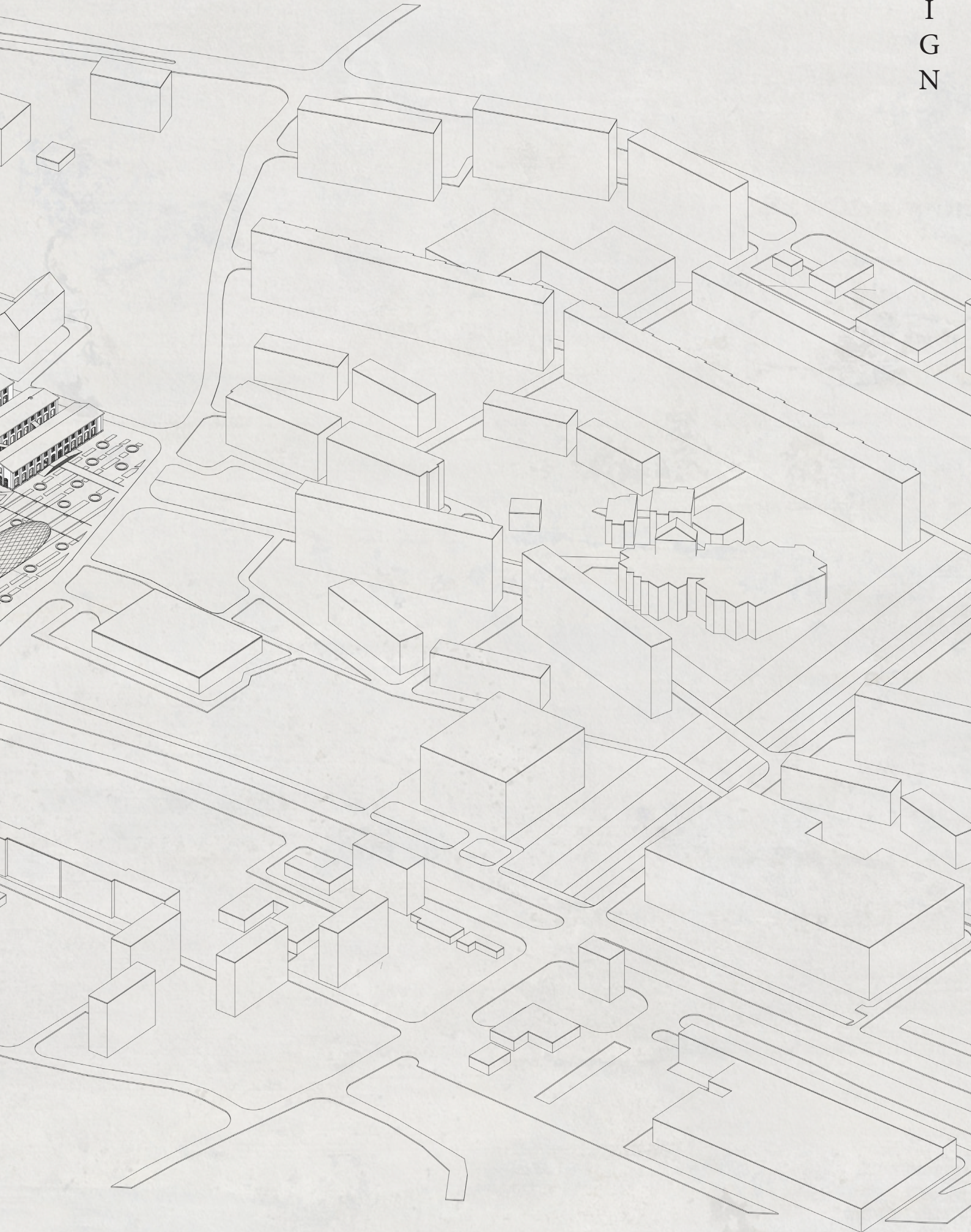
Through the Popowice district runs from the east to the west a green belt ending at the Tram Depot. This area was intended to give residents access to space and greenery, as well as enable the construction of service buildings - schools, a church and shopping pavilions. Currently, this area is devastated in many places. Revitalization of the green belt will enable providing walking areas for residents and will facilitate access to the Tram Depot.

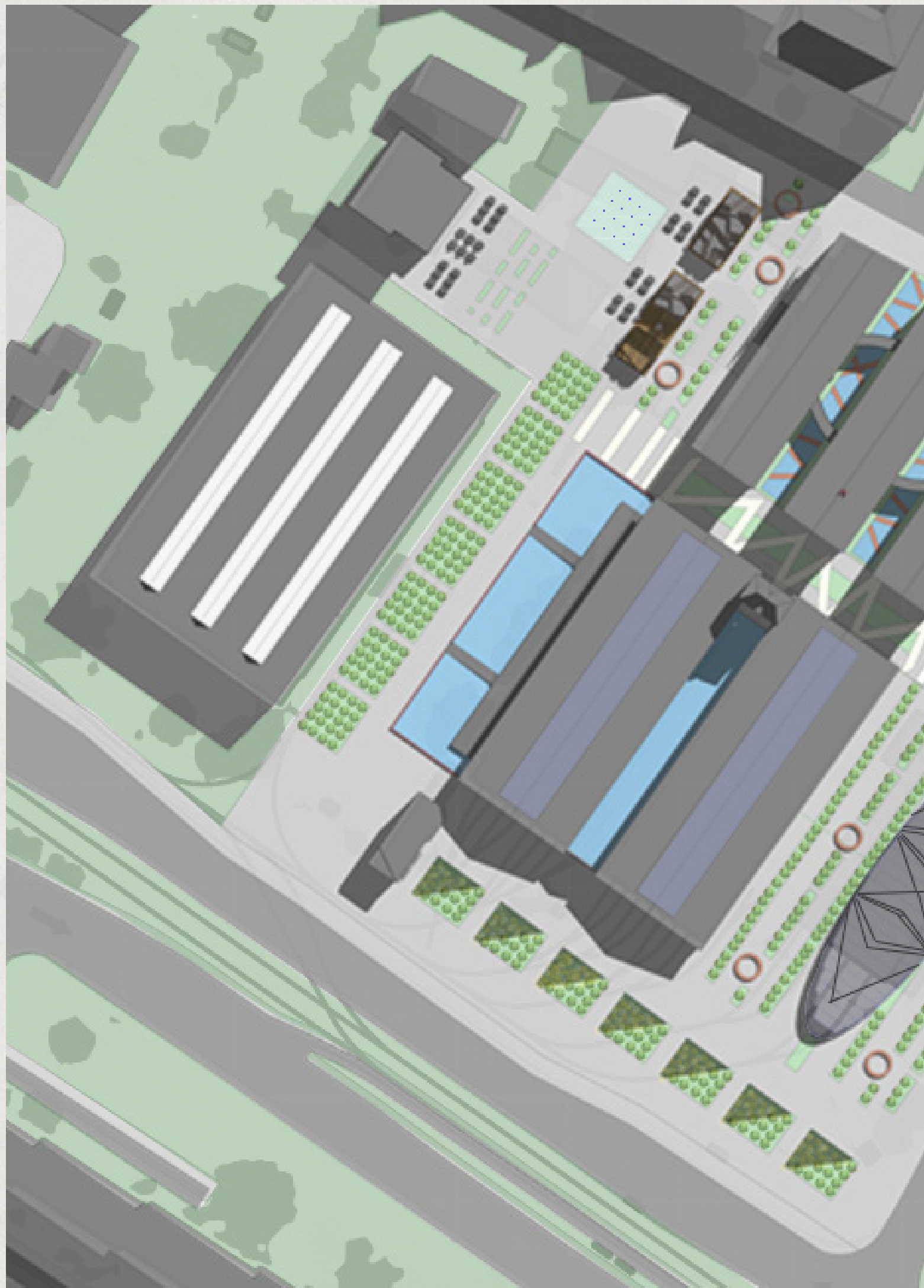
The footbridge in the form of an ellipse is located above one of the largest intersections in Wrocław (Legnicka / Na Ostatni Groszu / Milenijna). Its task is to connect the area of Tram Depot and Popowice (north-east corner), Park Zachodni (north-west corner), the district of Gądów Mały (south-east corner) and district of Gądów Wielki and the office center (south-west corner). The elliptical shape will not only be visually attractive, but also effectively connect the whole area, the interchange (Kwiska / Legnicka) and the Tram Depot.





Context of the project

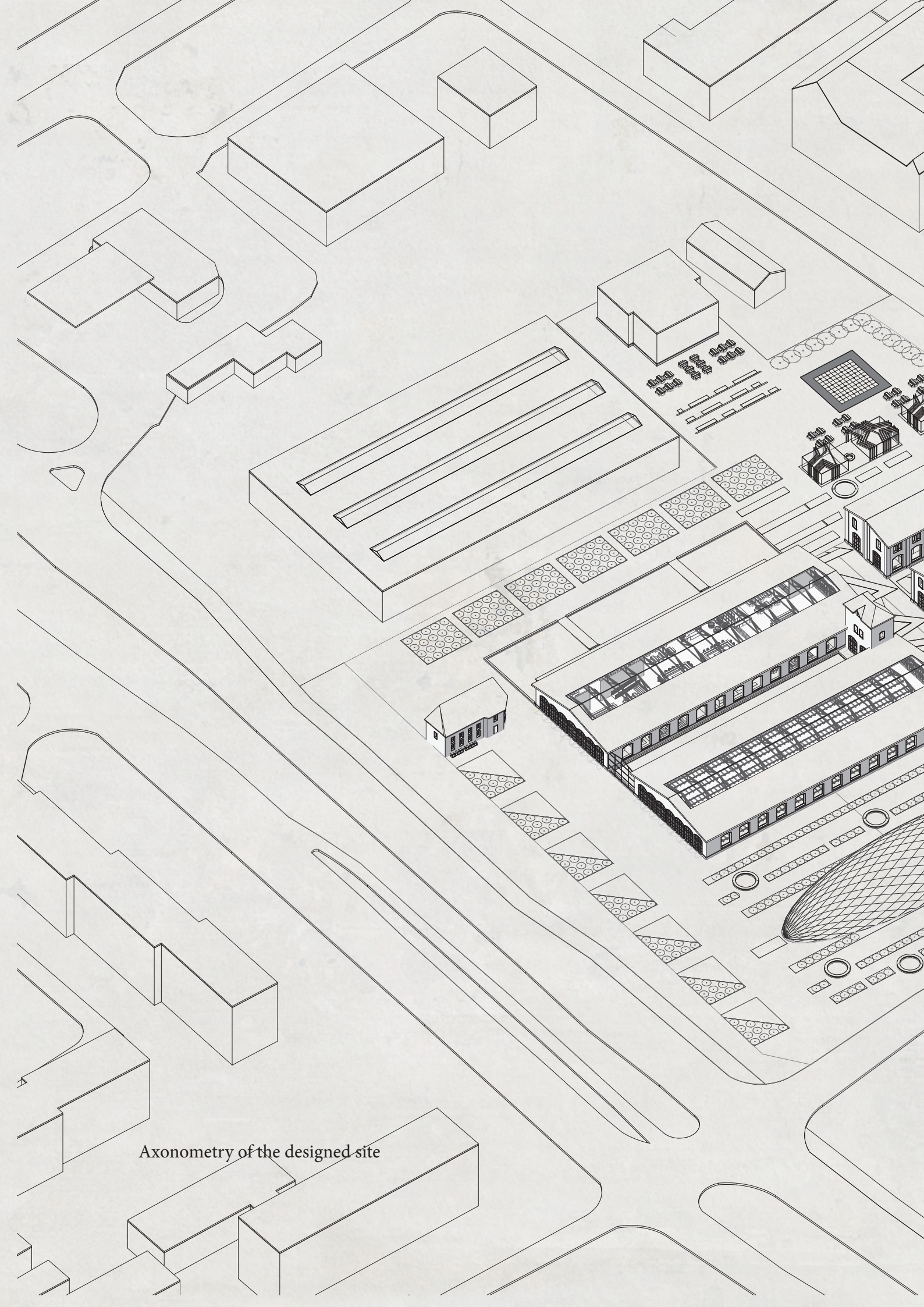


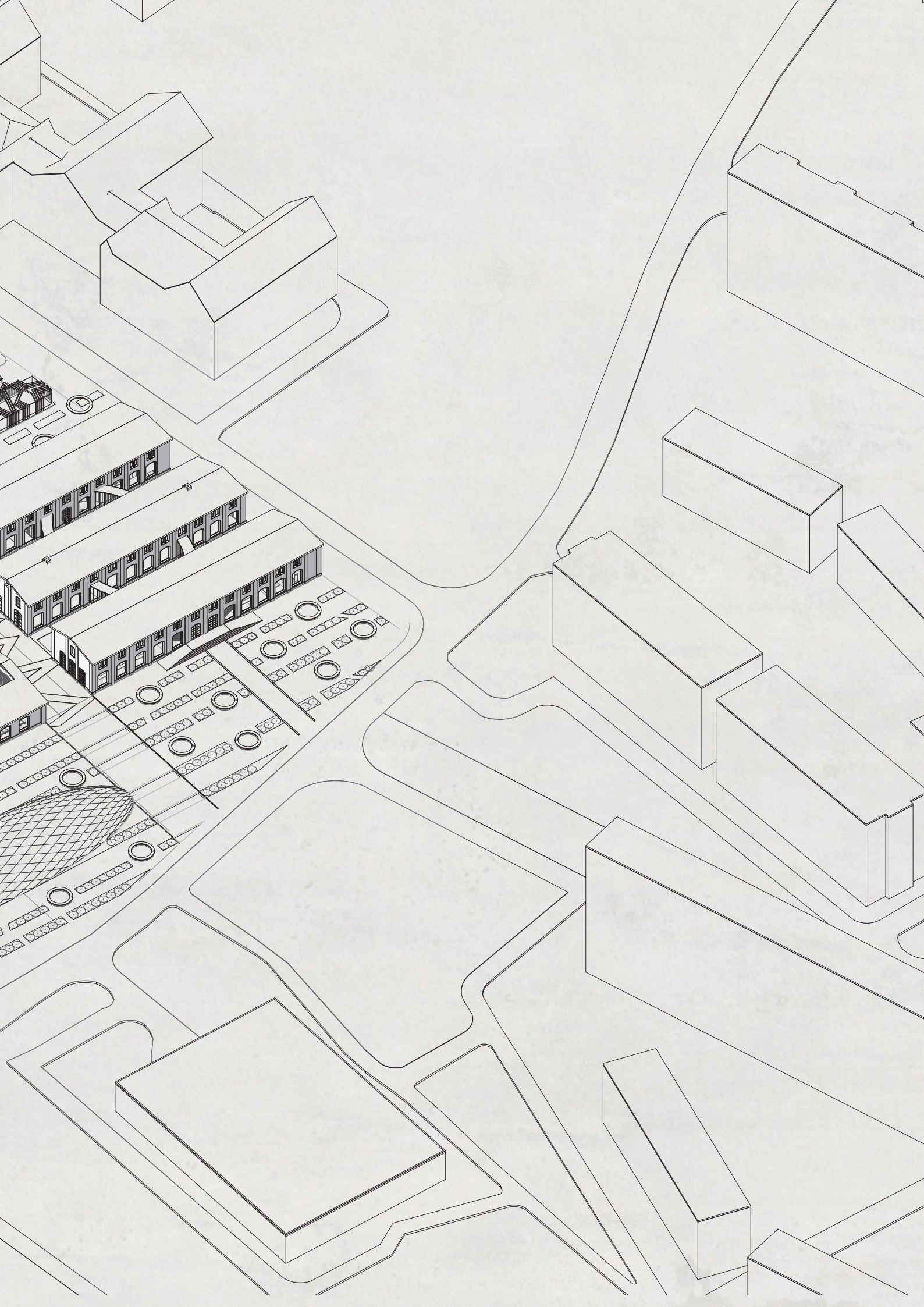




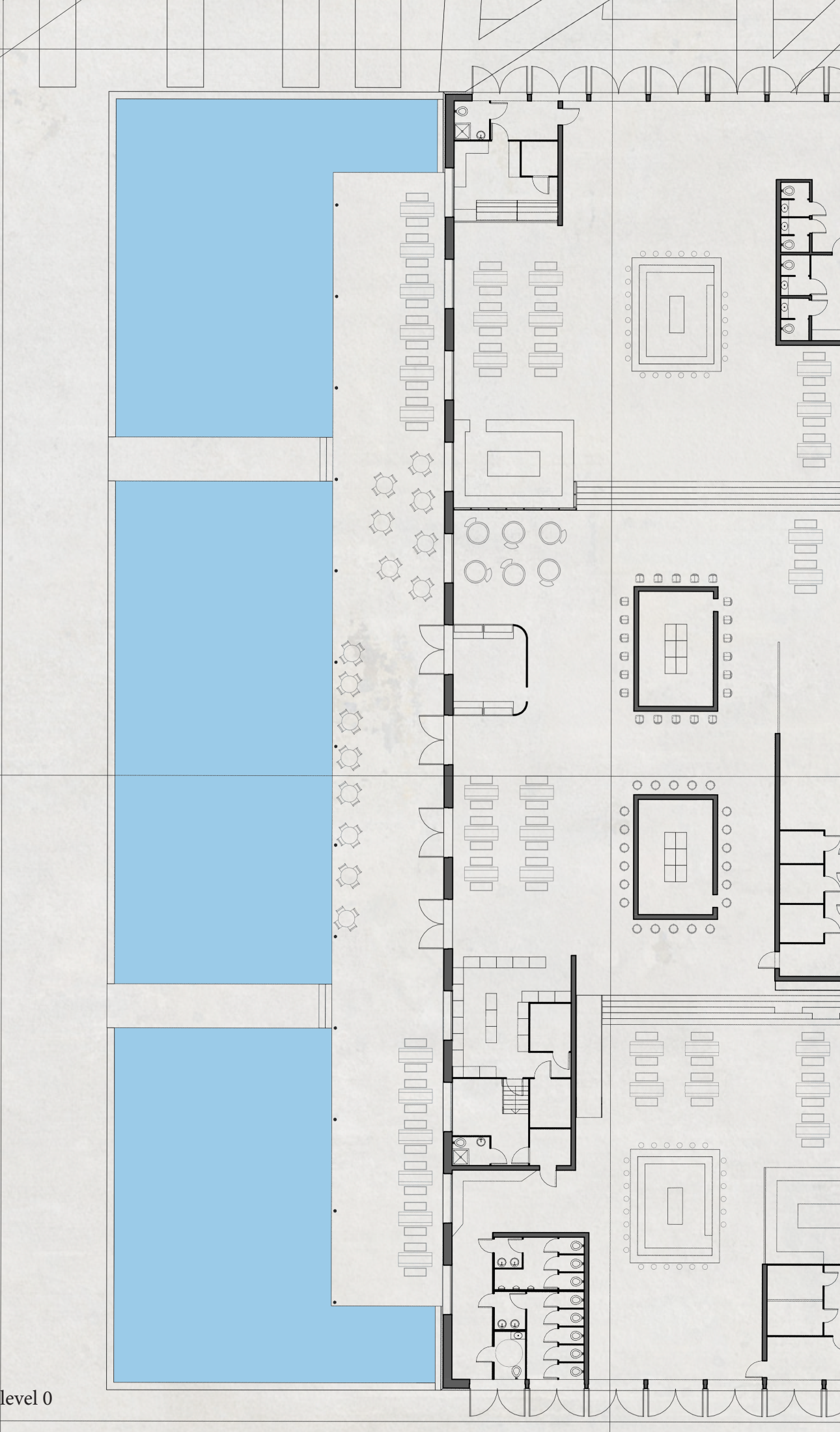
Master plan

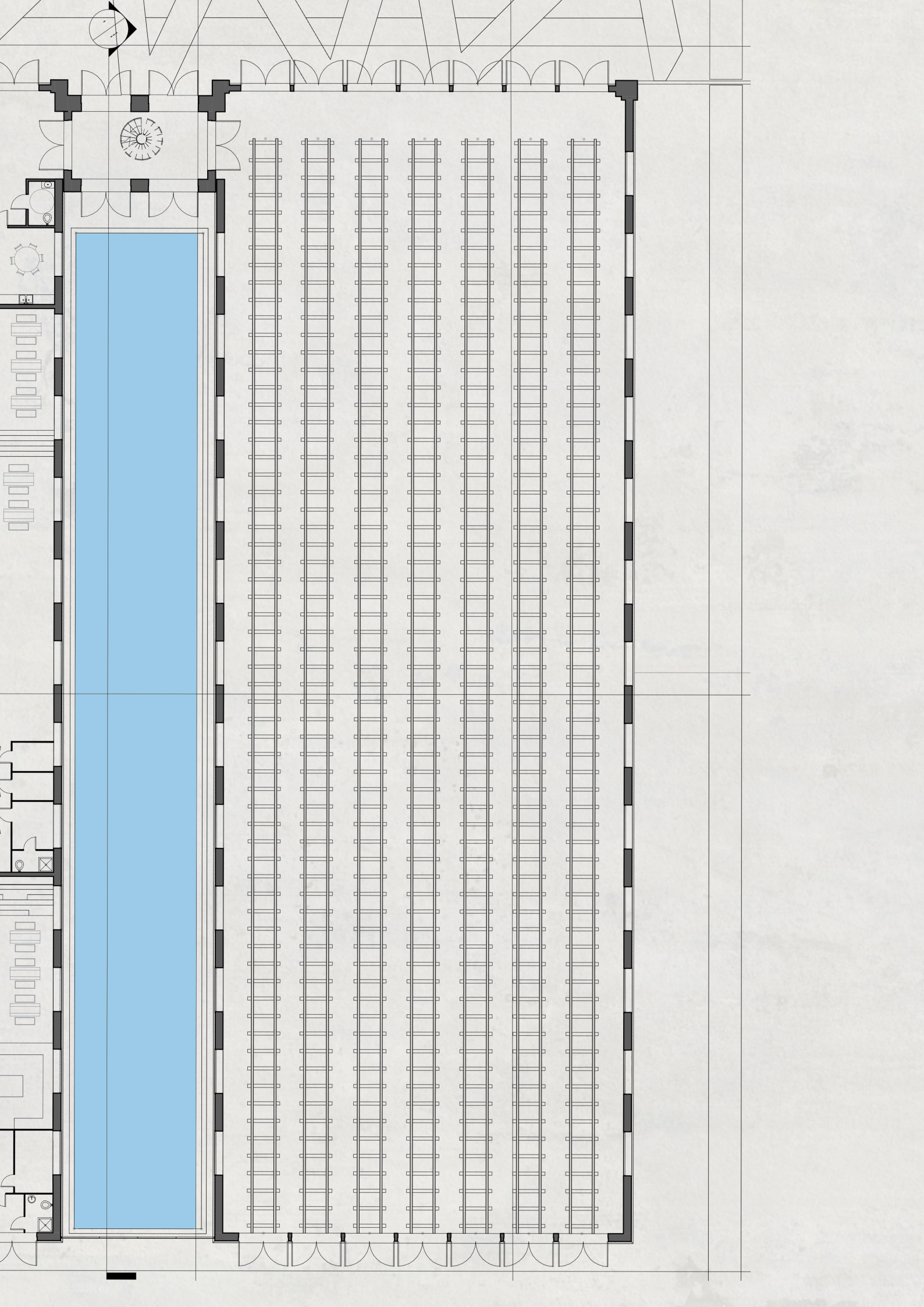
Axonomy of the designed site

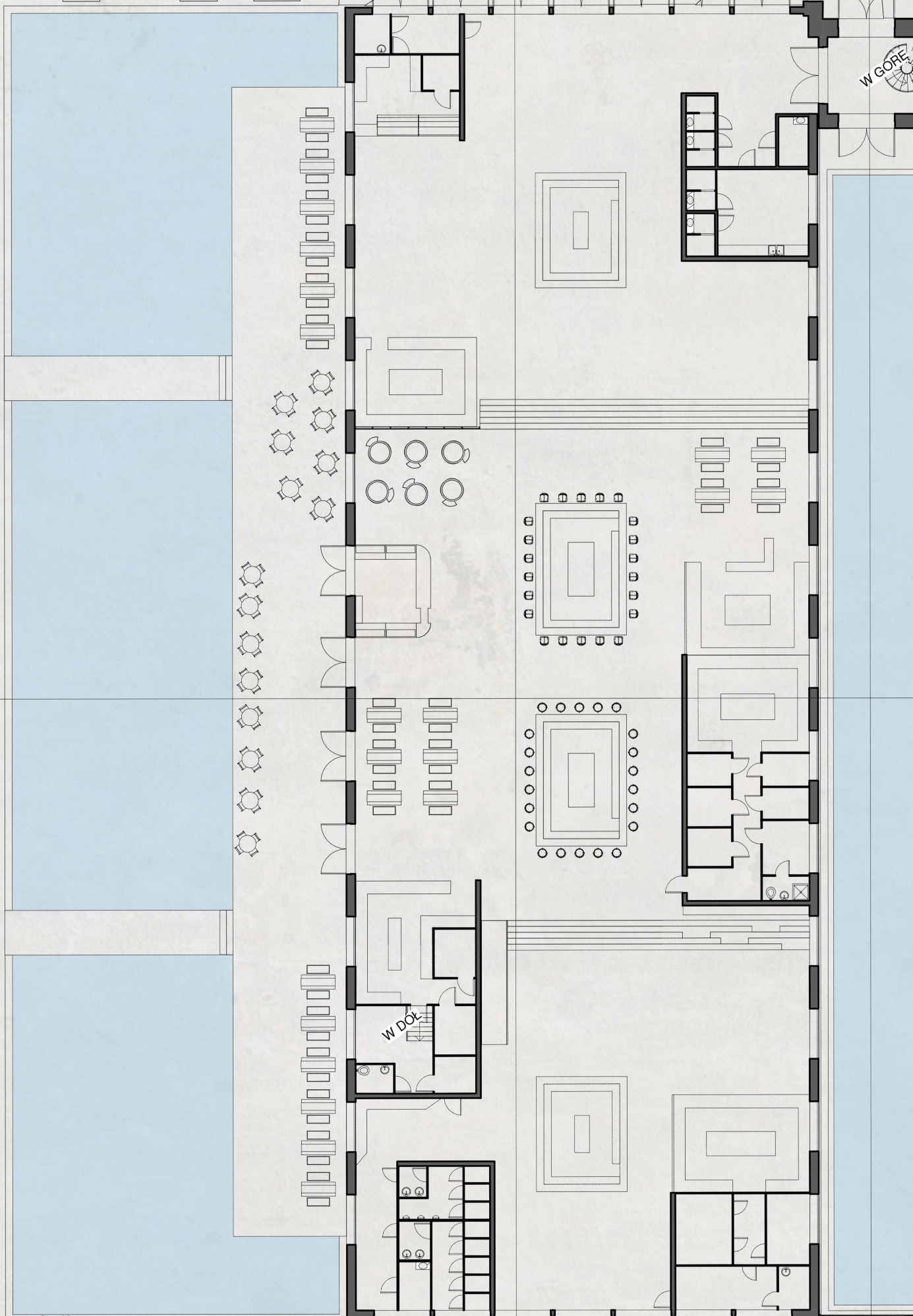




Restaurant hall - level 0



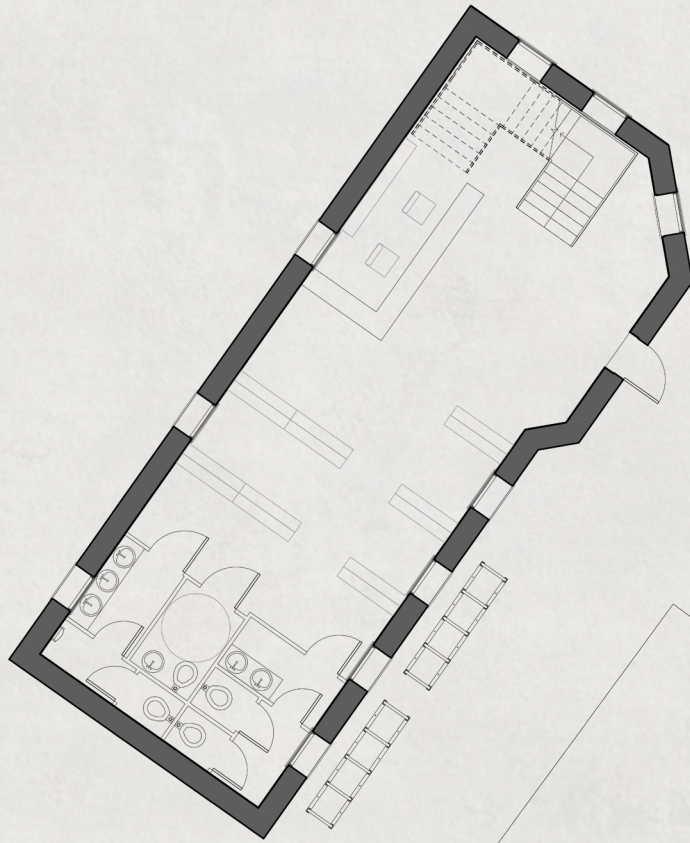




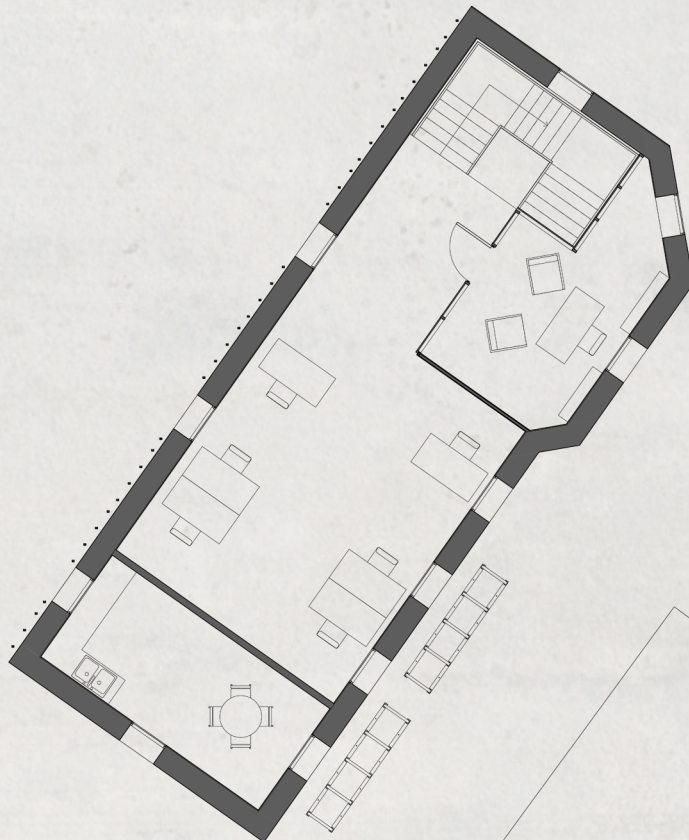
W GORE

W DOL

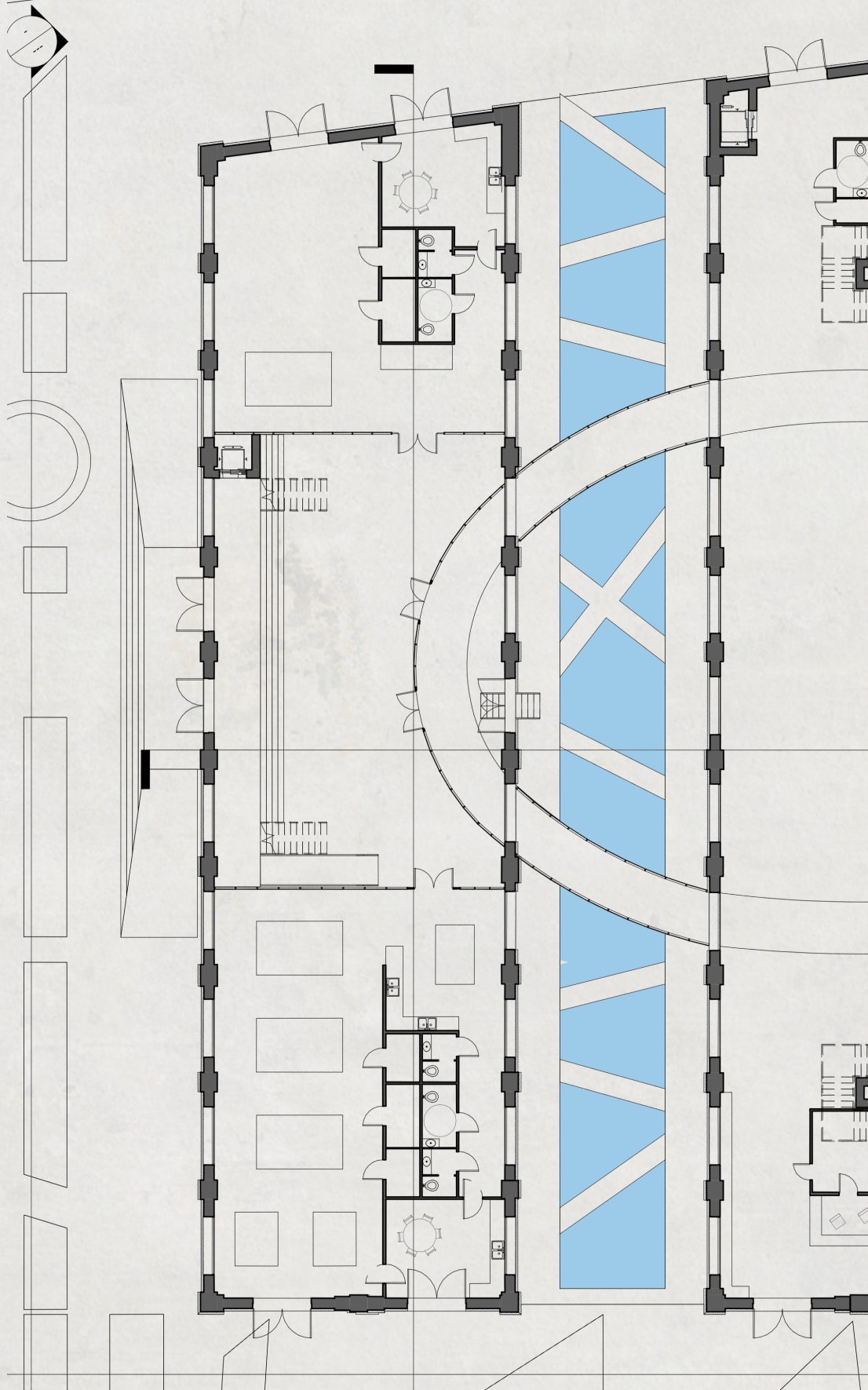
Restaurant hall - upper part



Museum Administration
Level 0

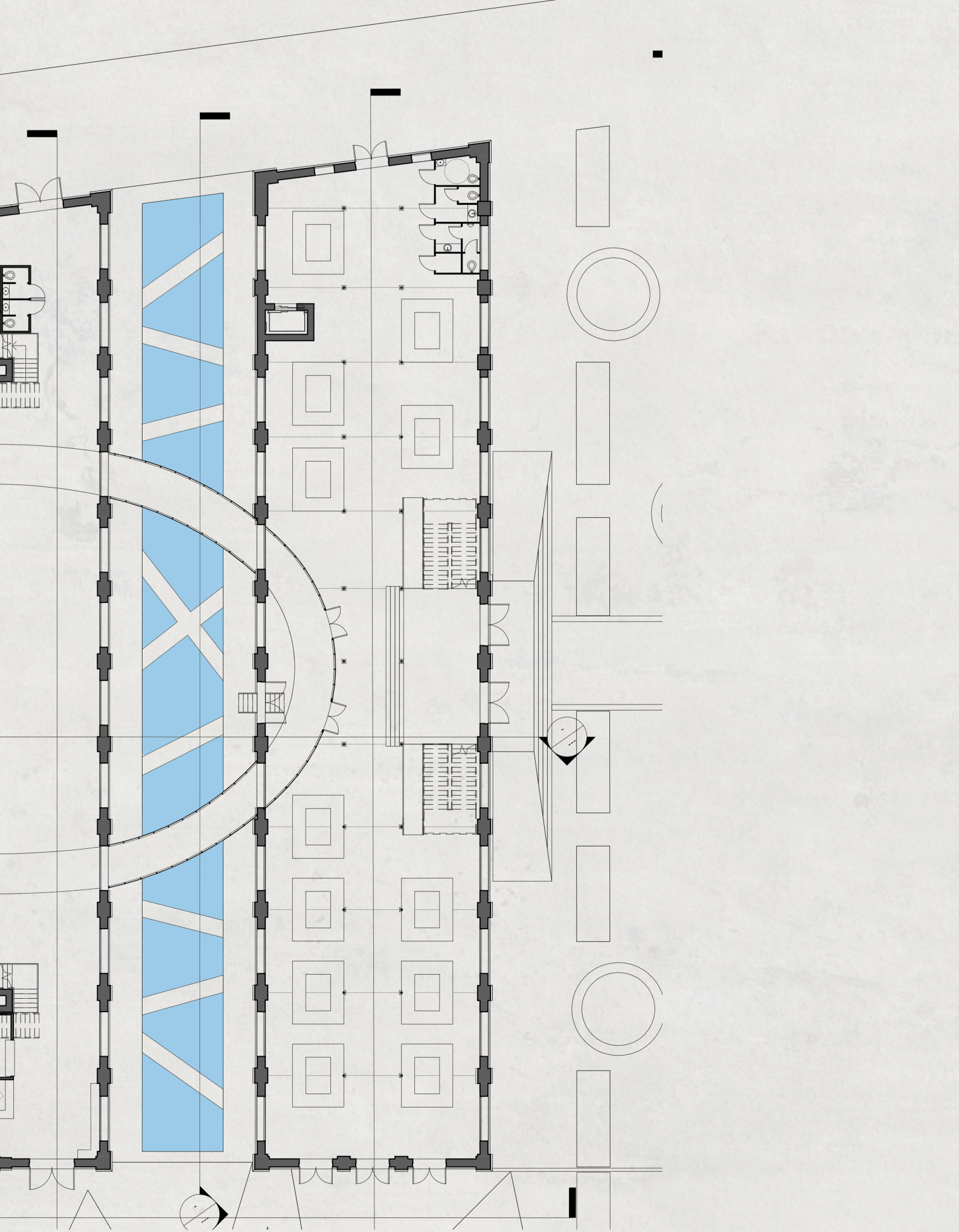


Museum Administration
Level 1



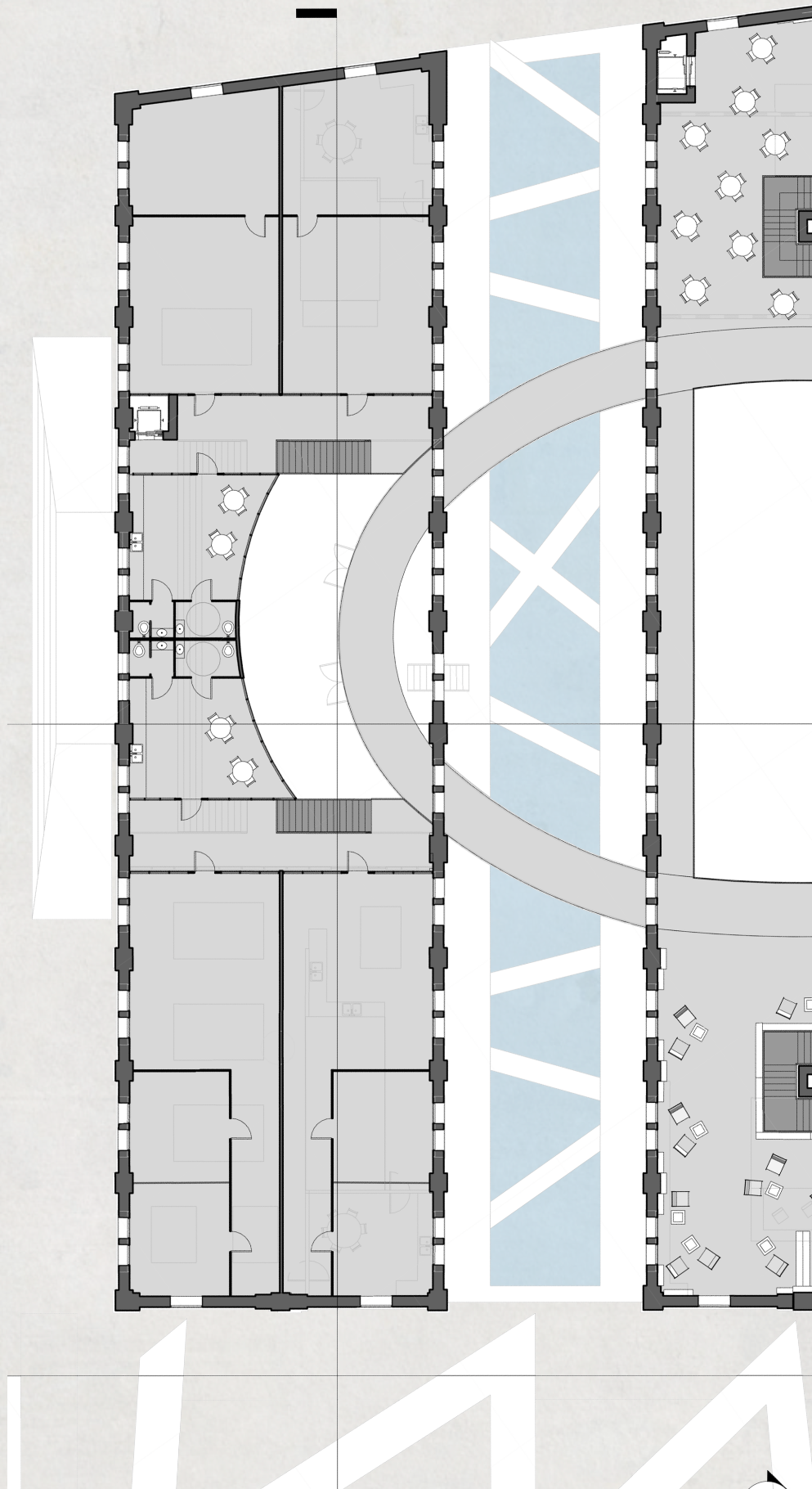
Workshop Hall
Level 0

Exhibition / Event
Level 0



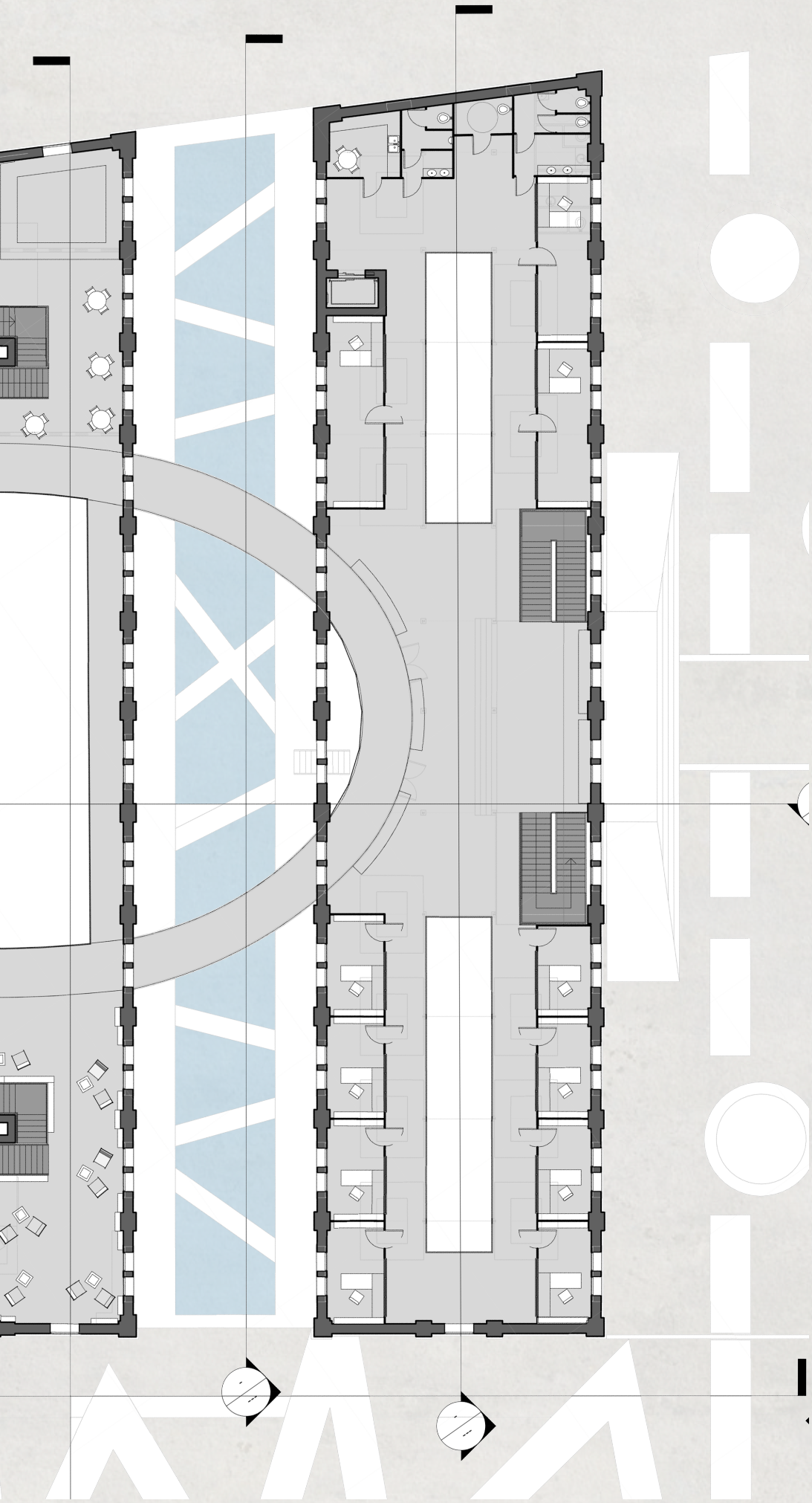
Hall

Old-style Market Hall
Level 0



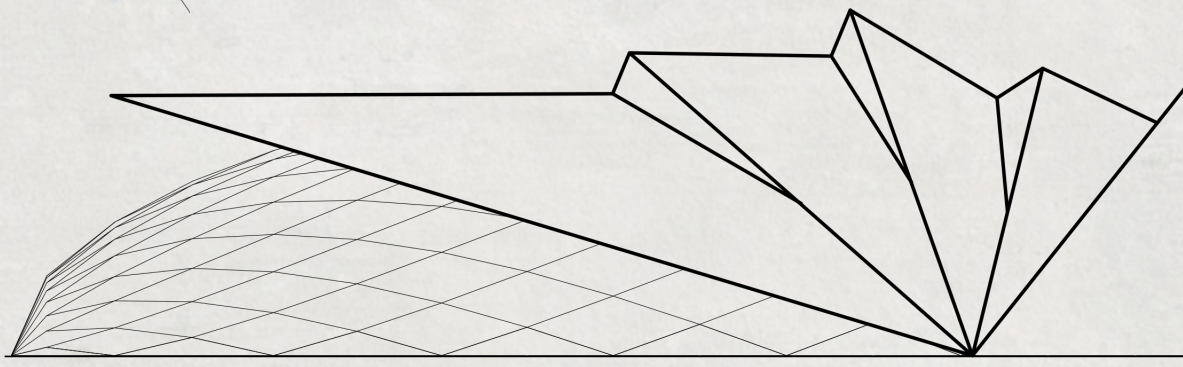
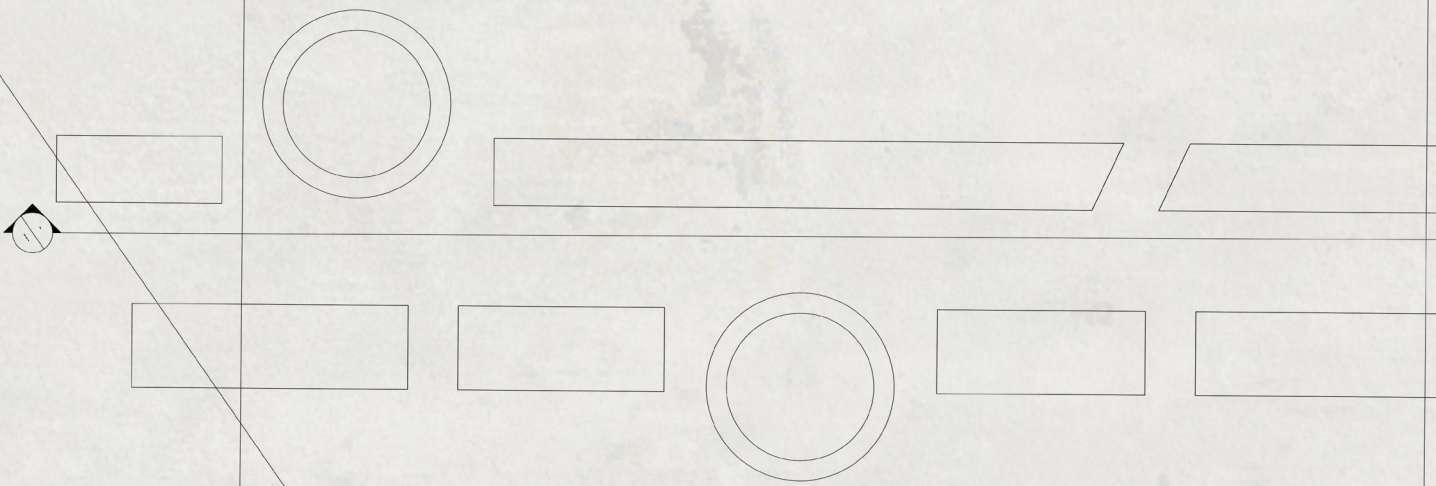
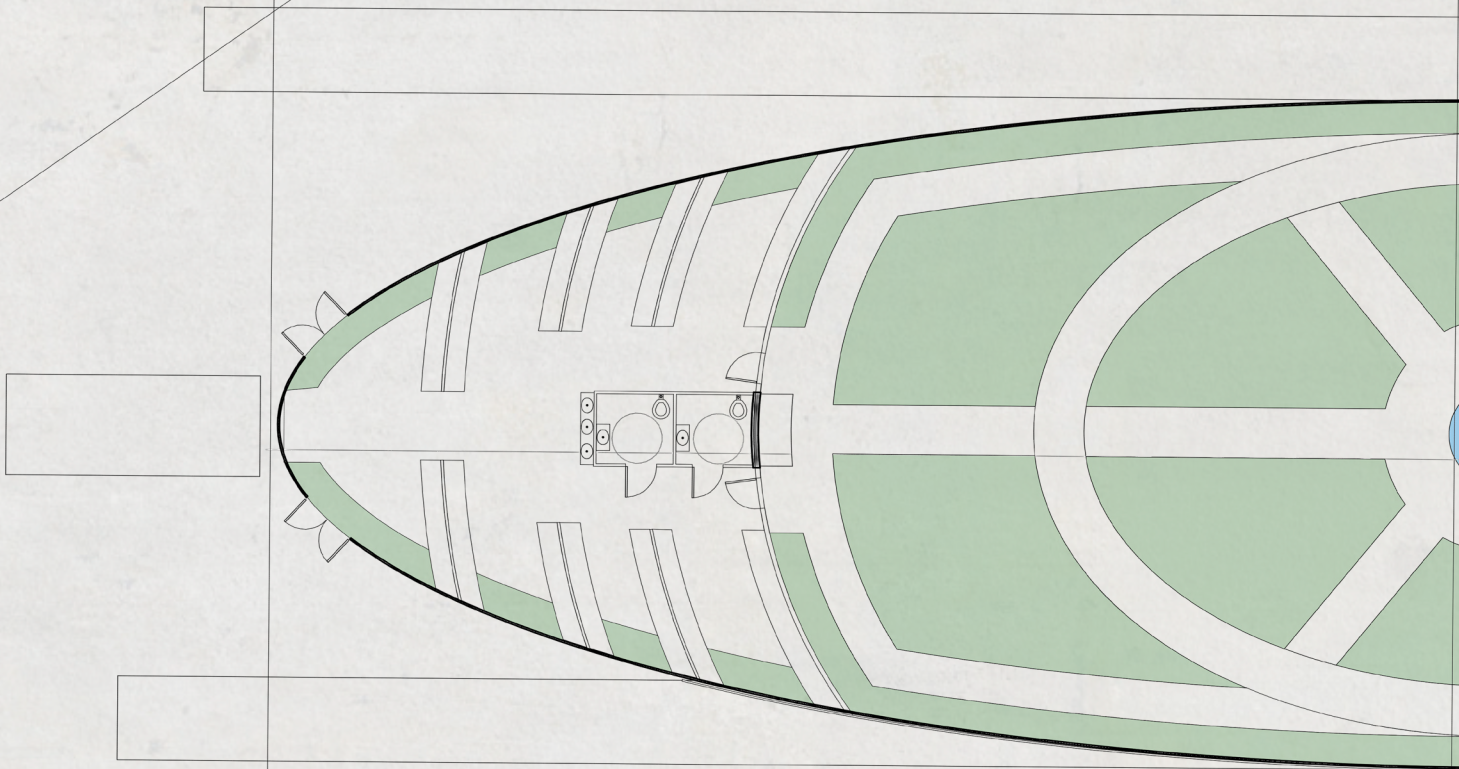
Workshop Hall
Level 1

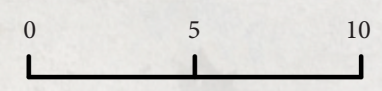
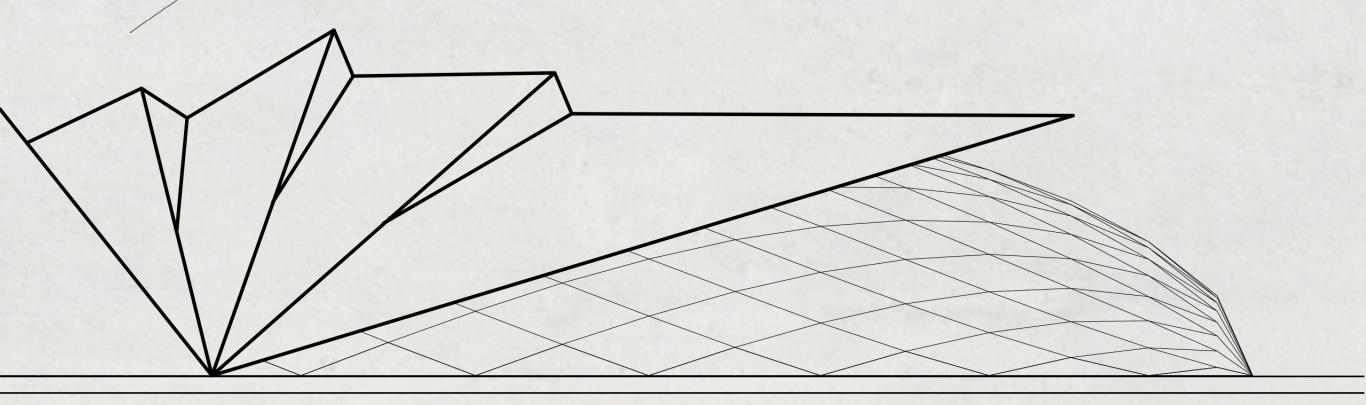
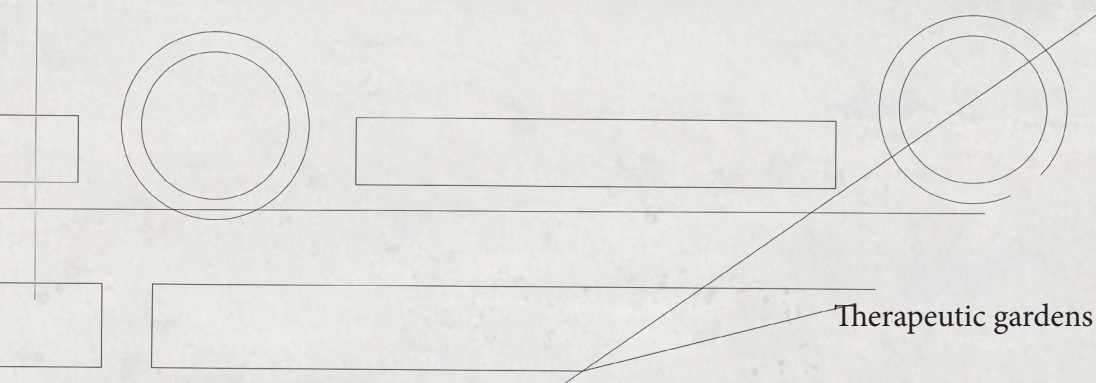
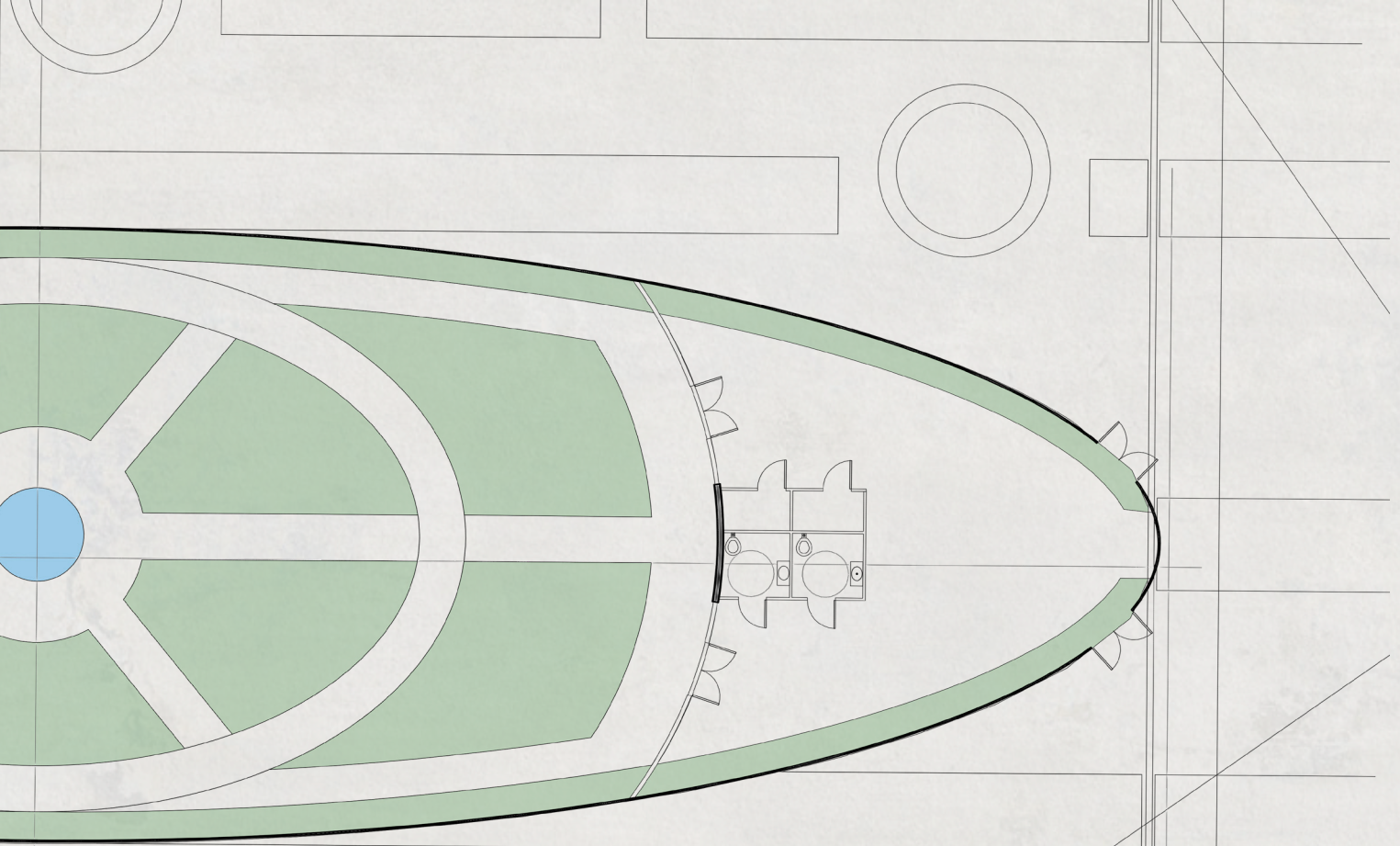
Exhibition / Event
Level 1

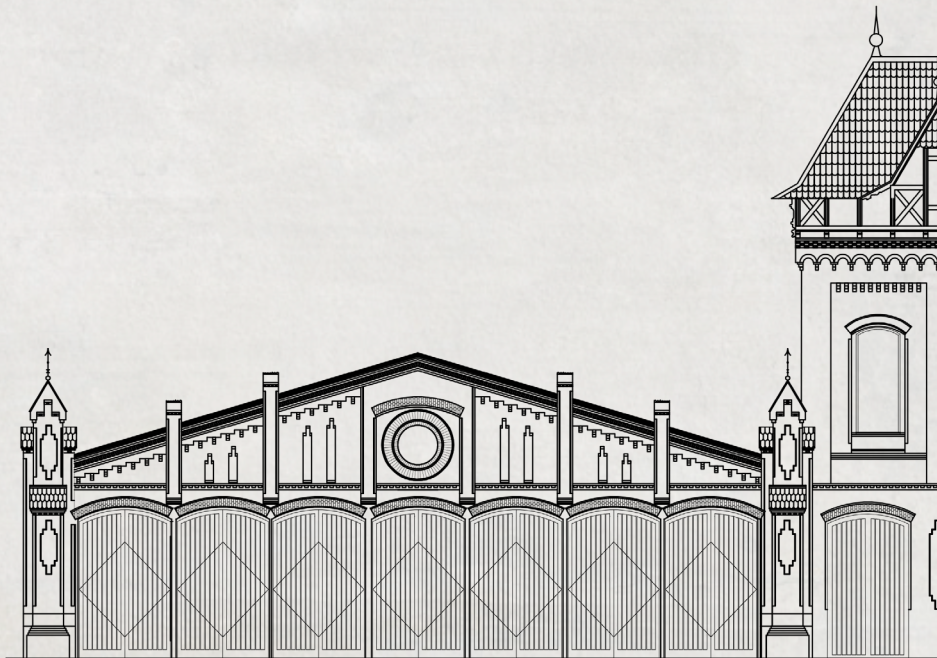
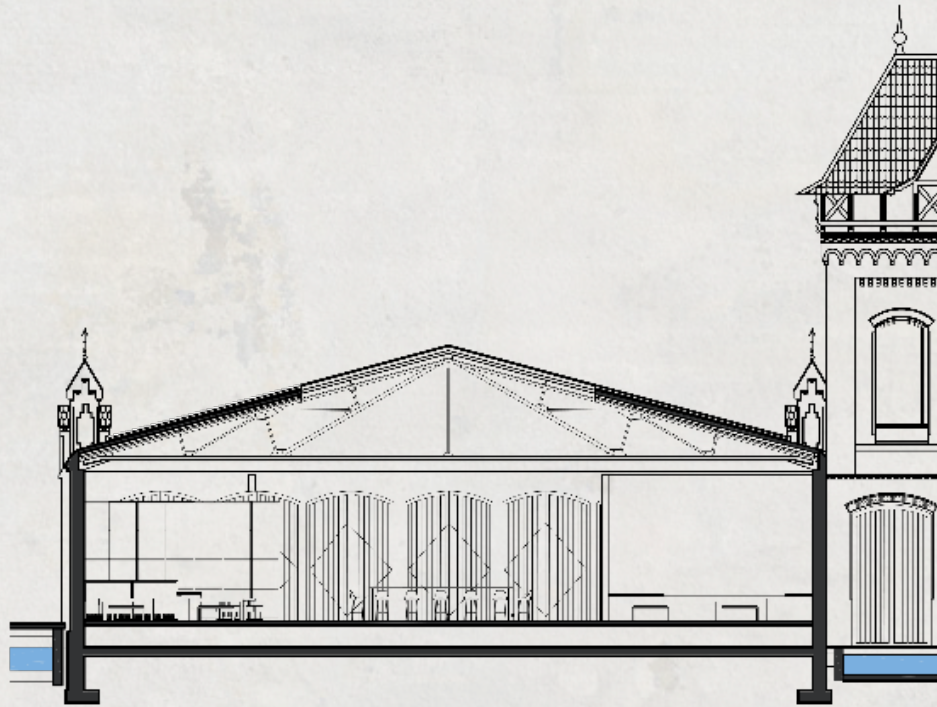
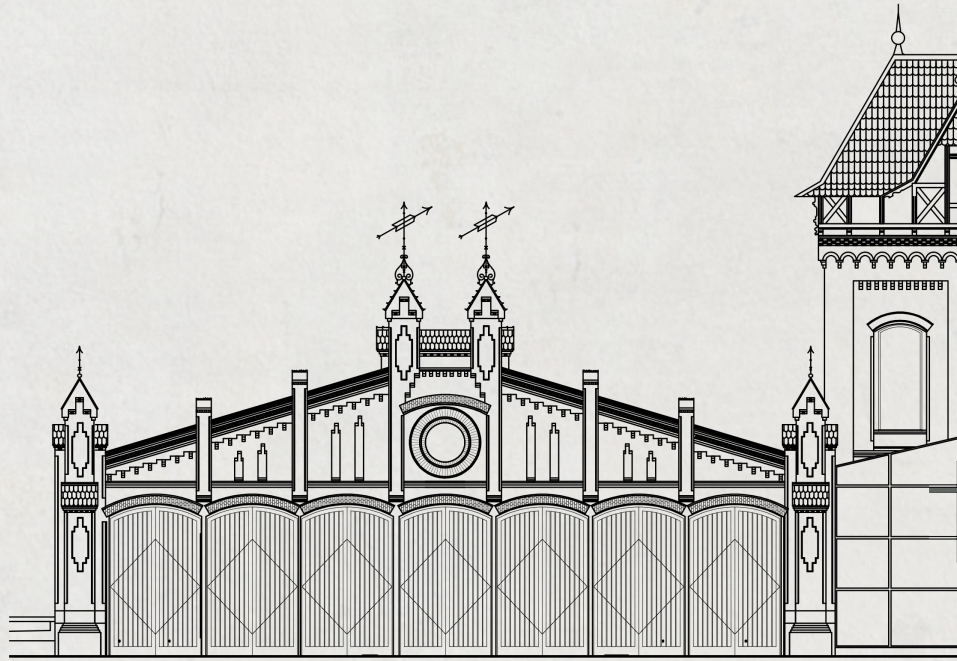


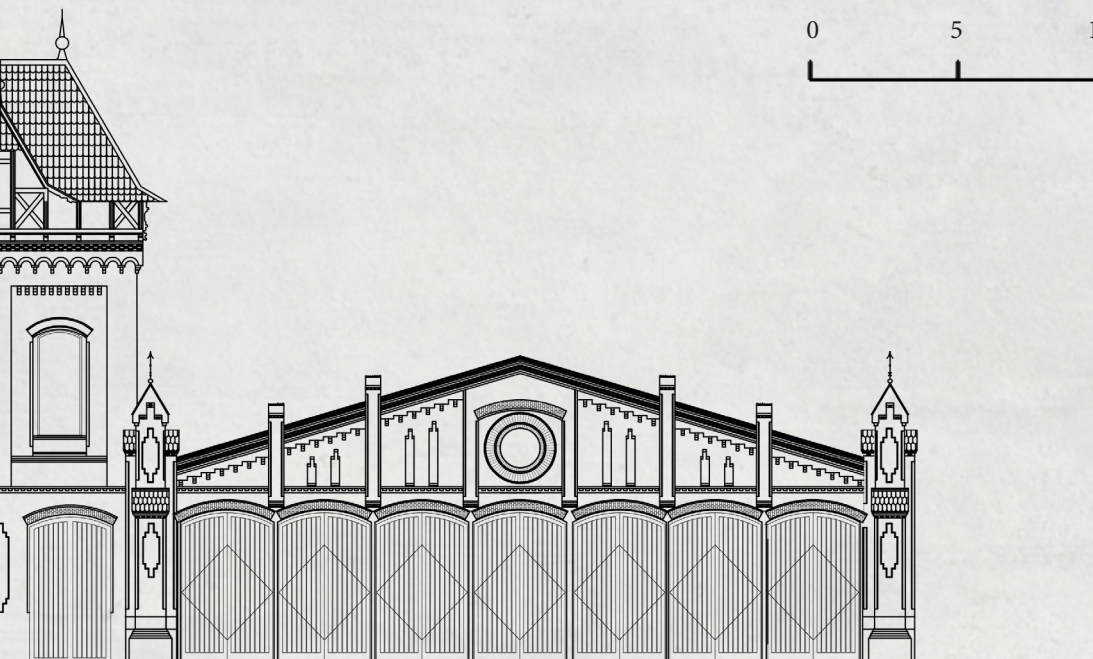
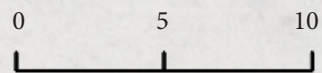
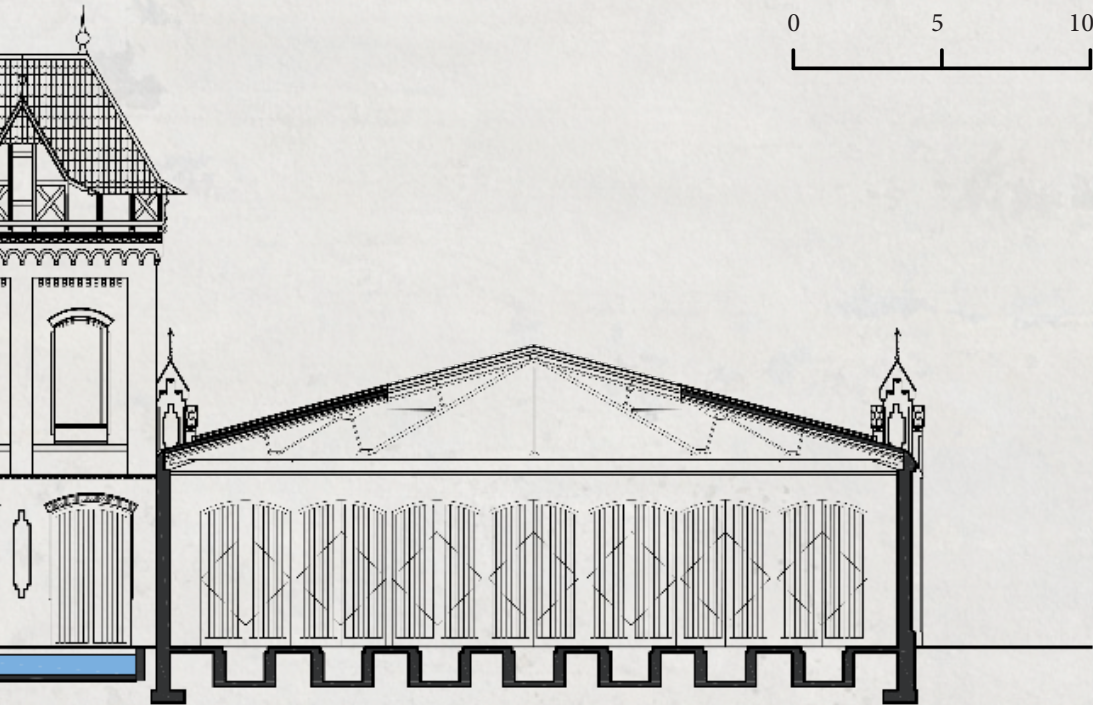
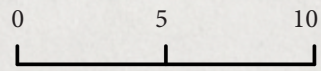
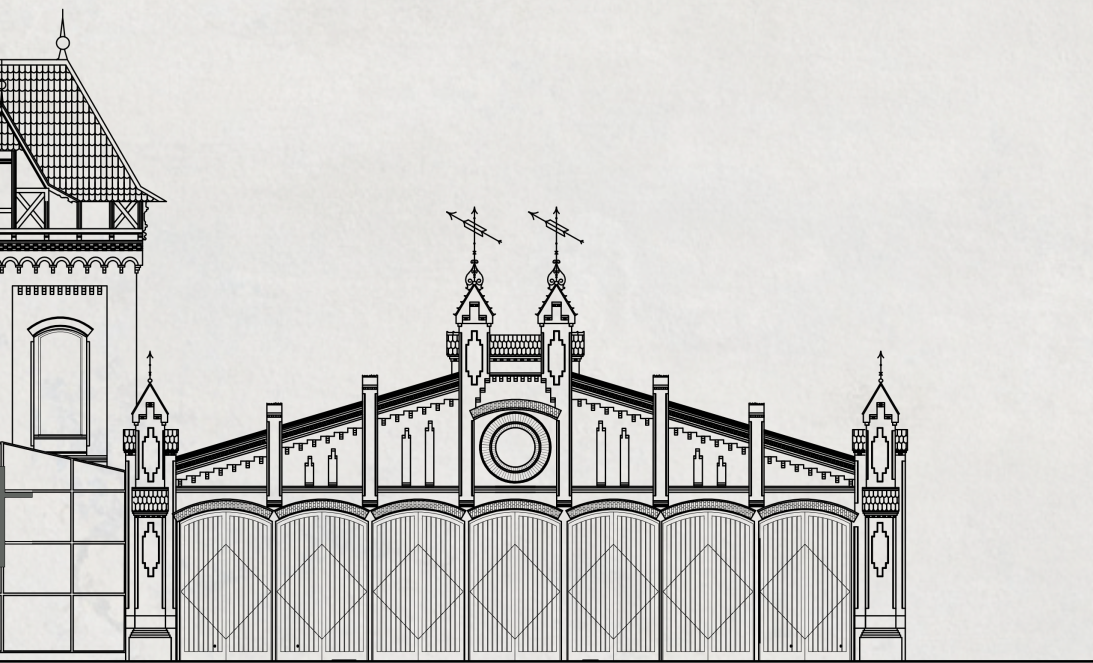
Hall

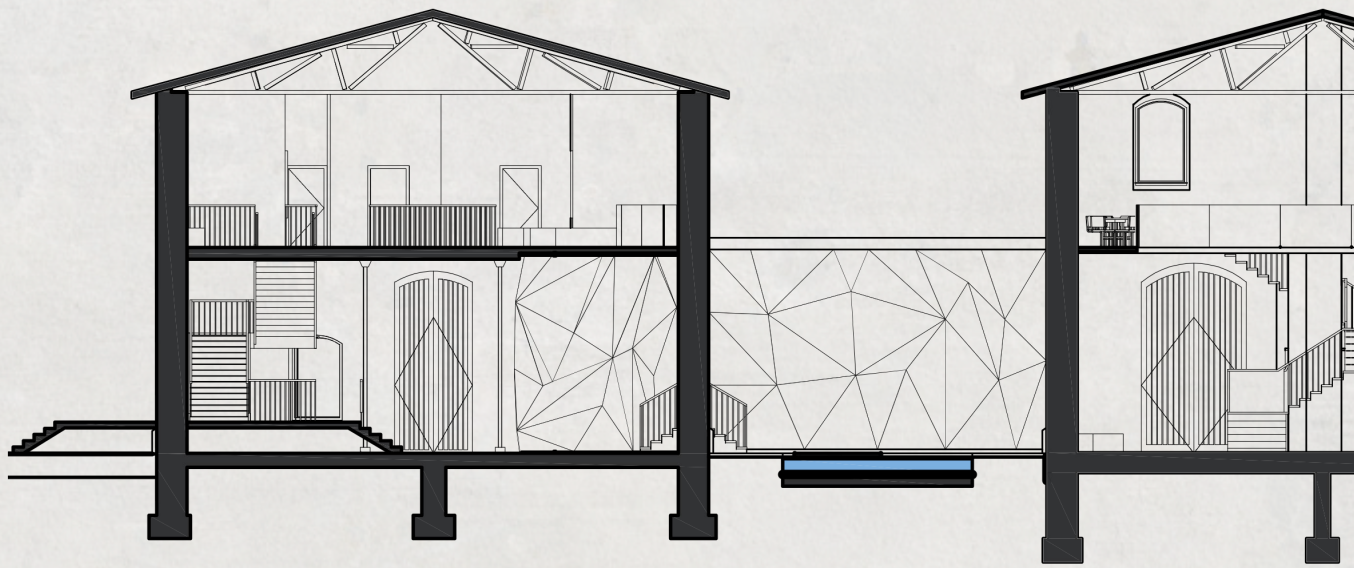
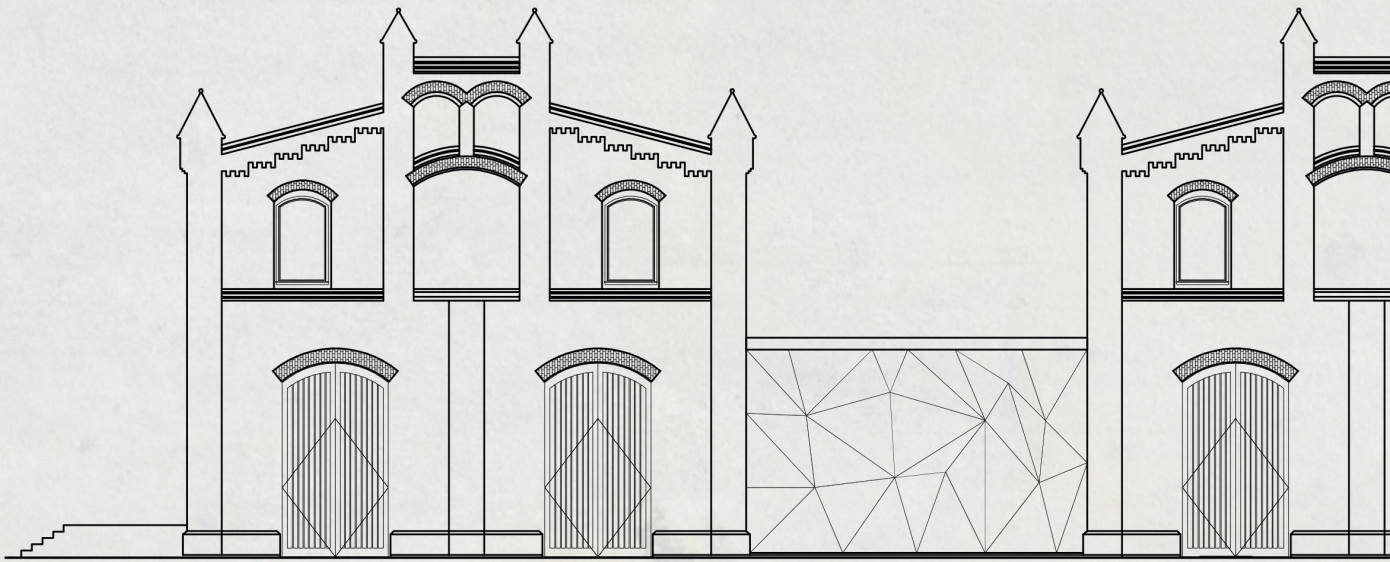
Old-style Market Hall
Level 1

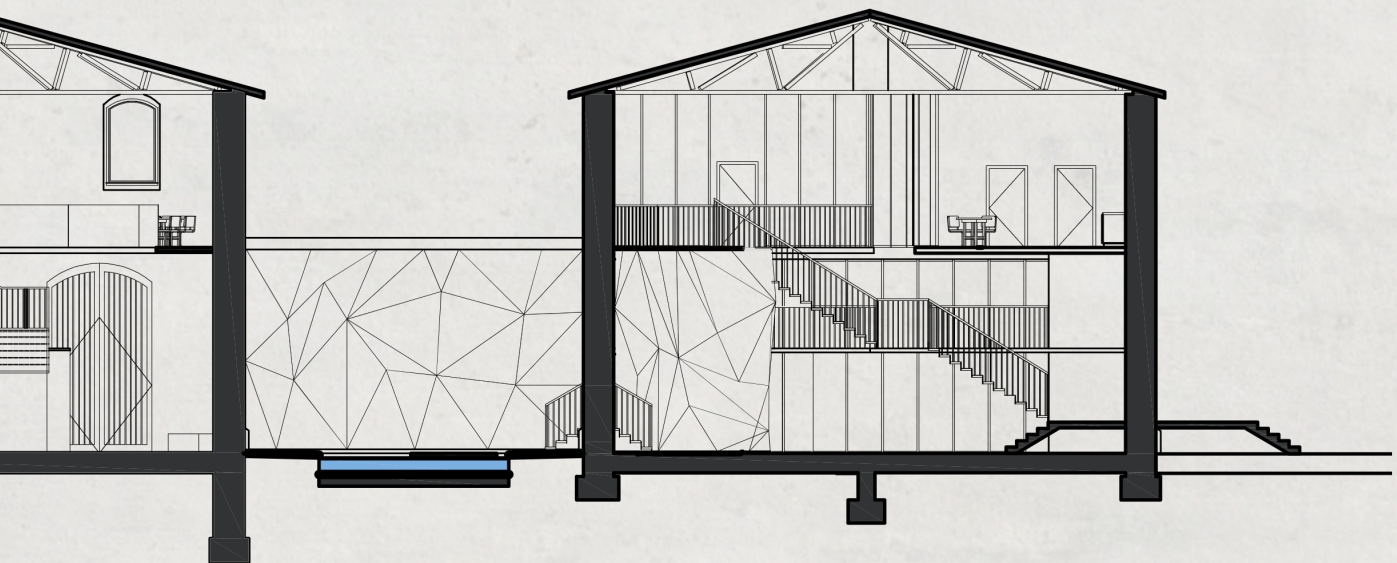
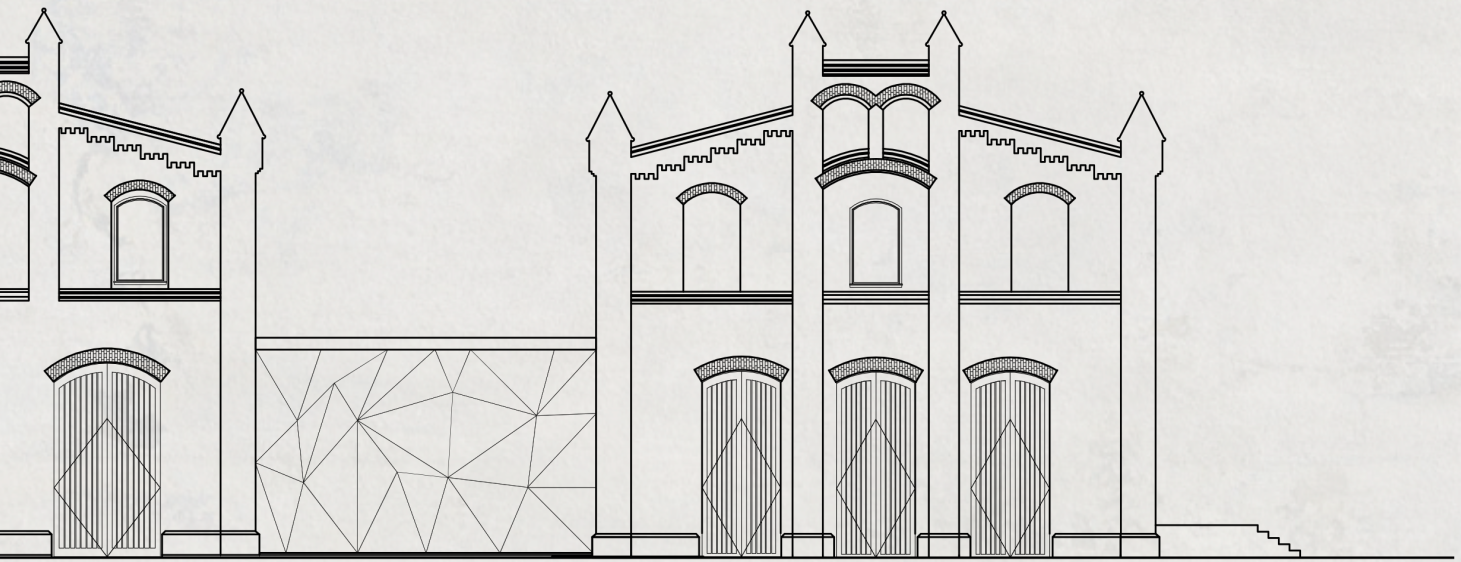


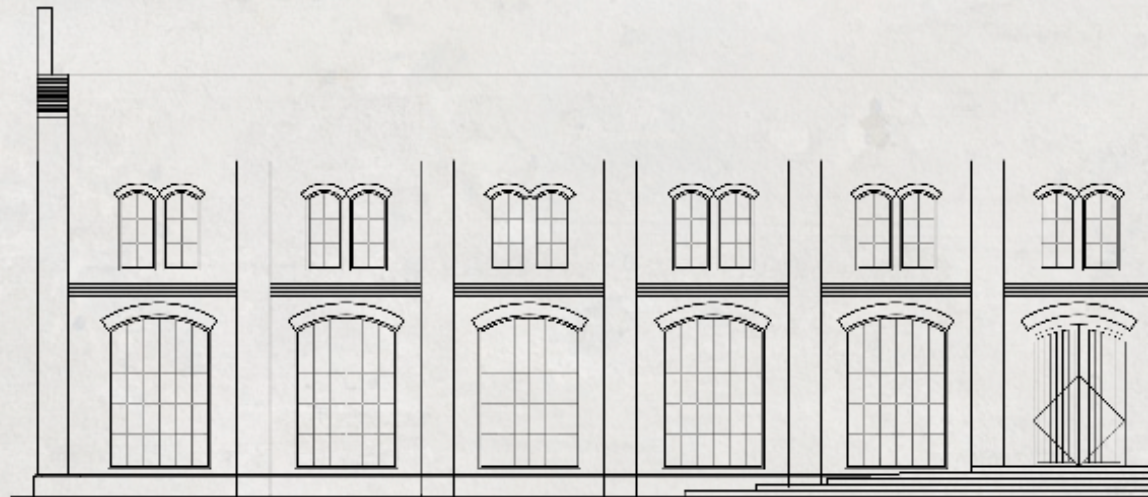
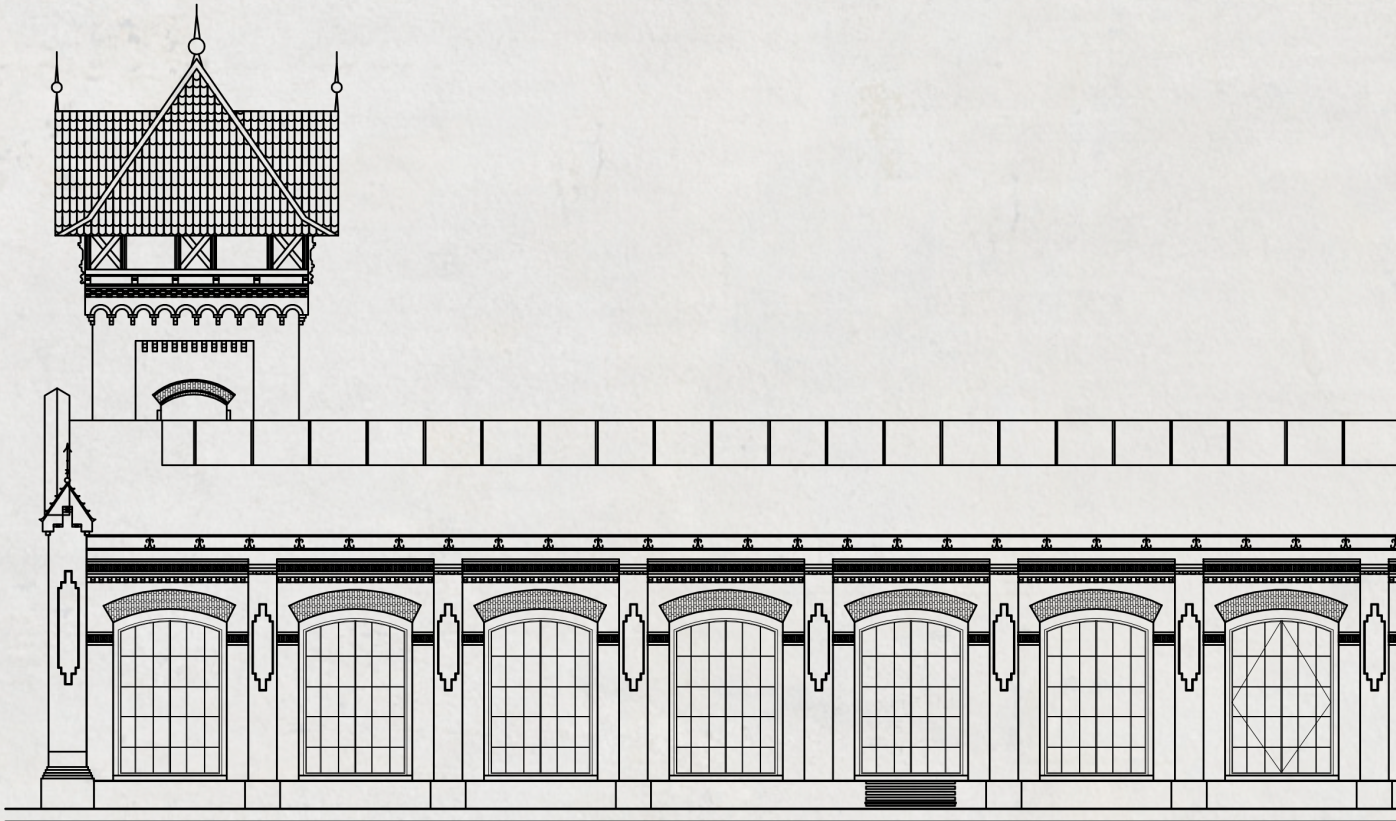


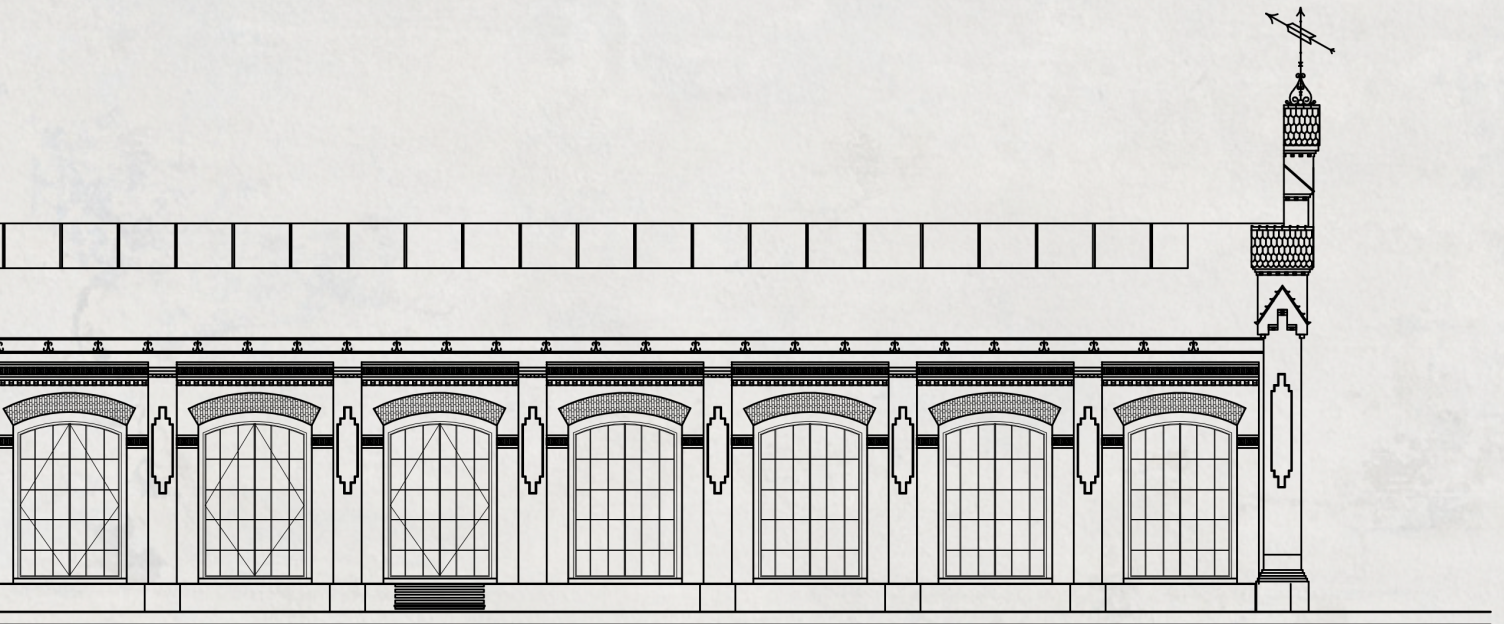


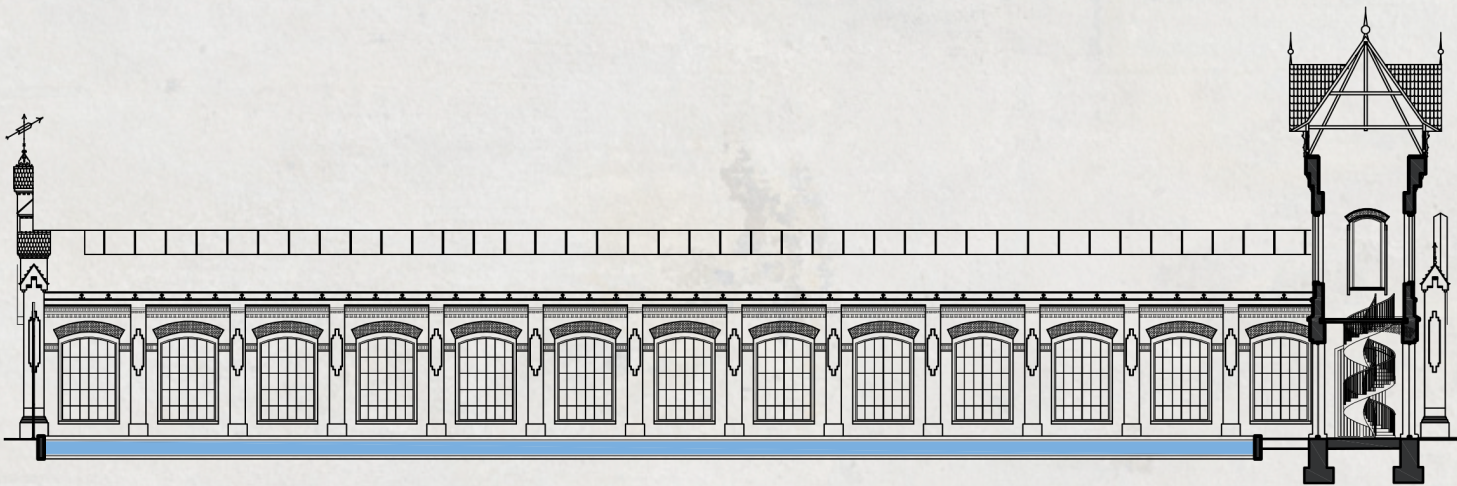
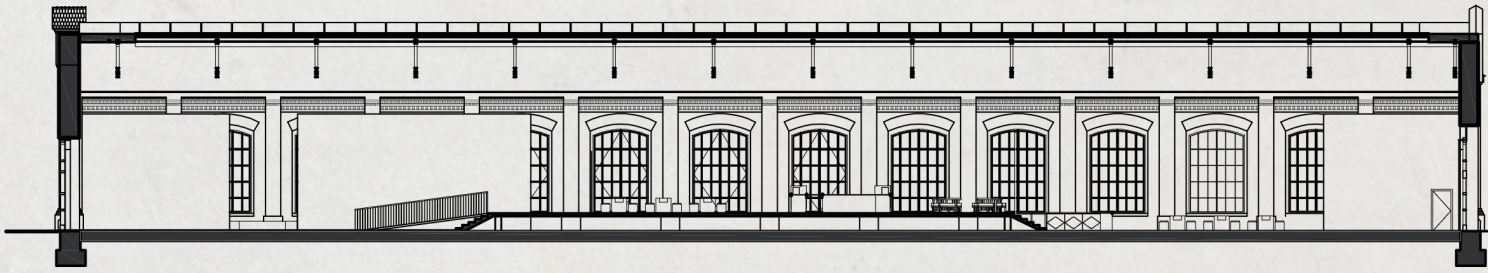


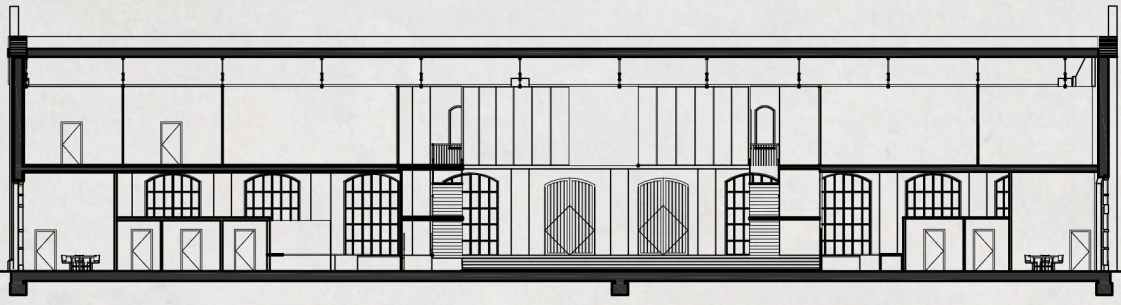








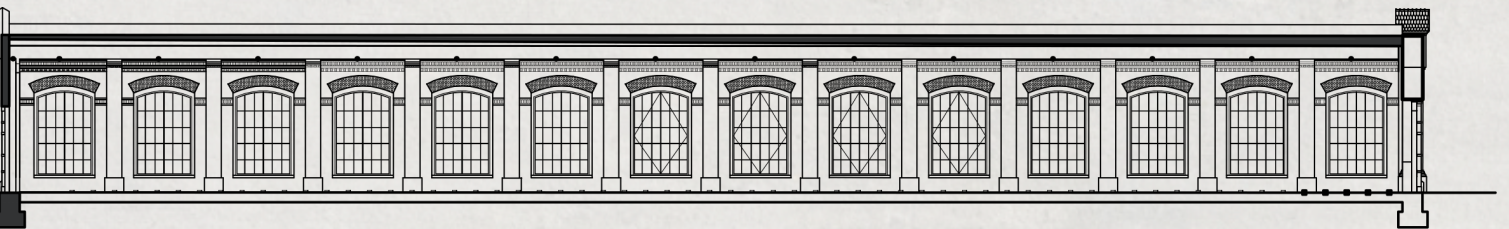




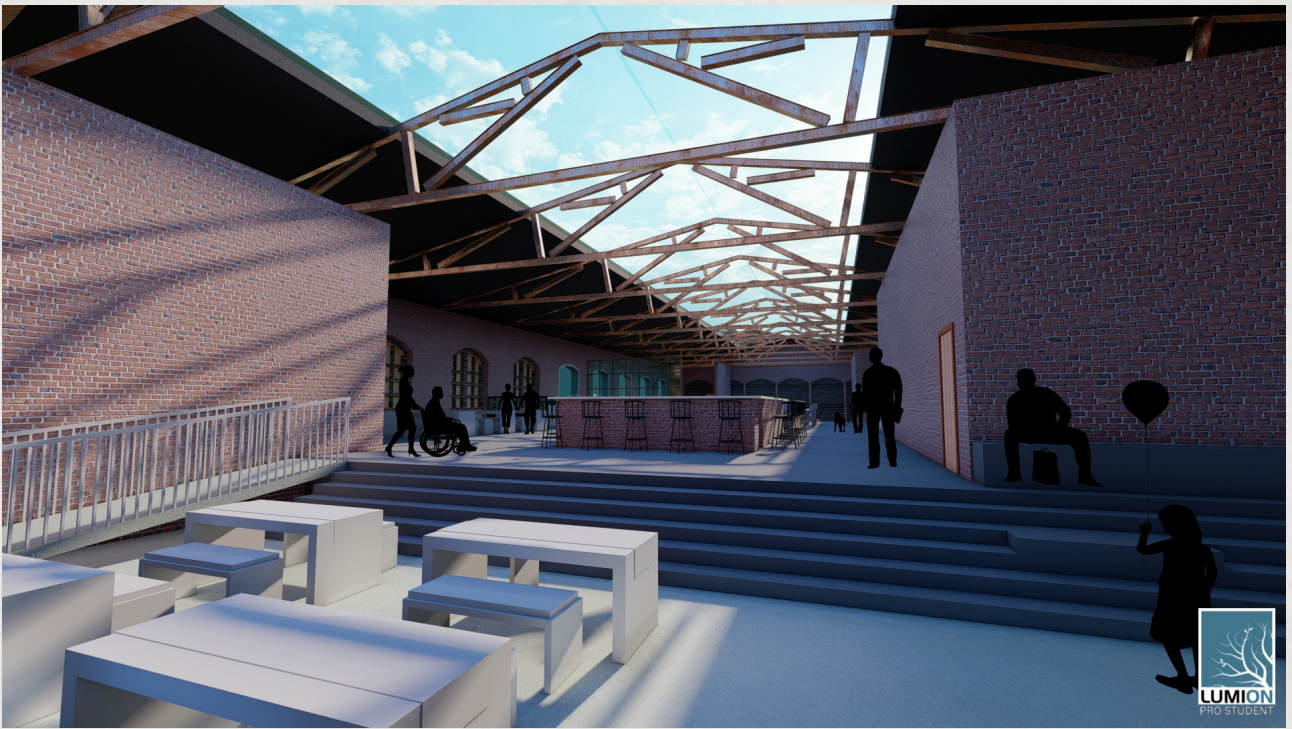
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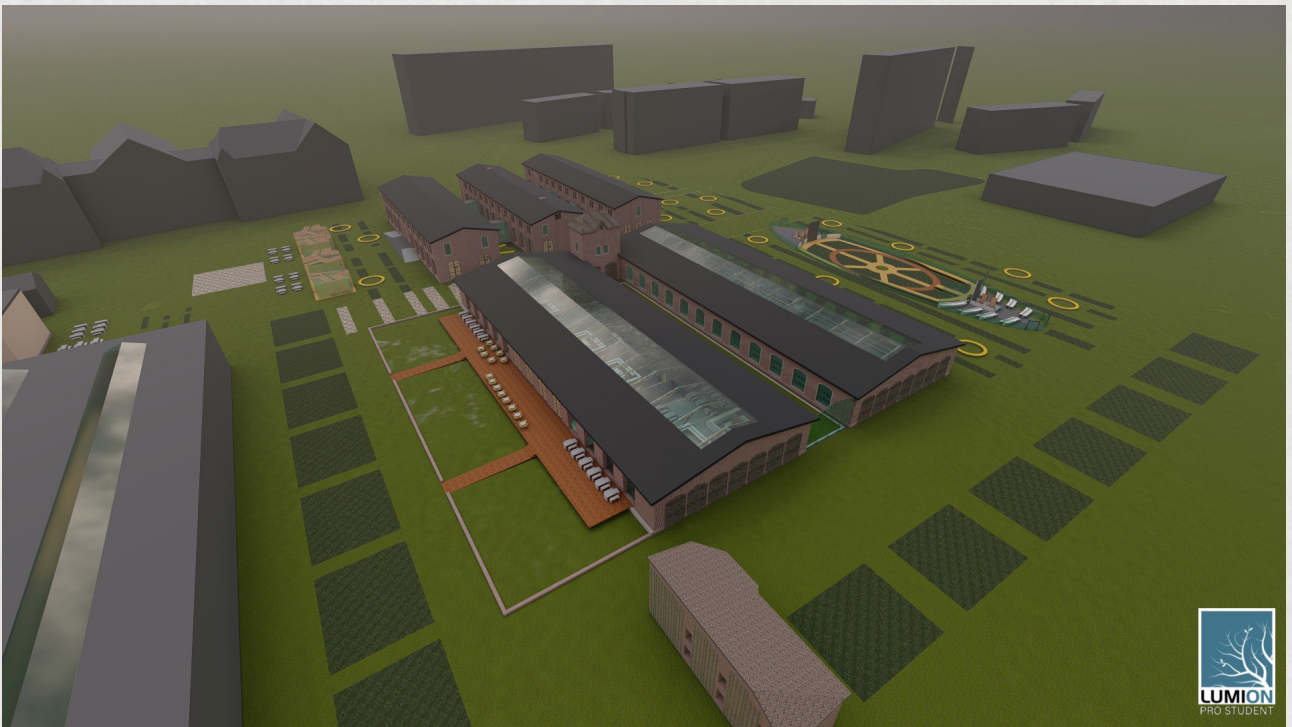
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