

COLLAPSES AND OPENINGS

RE-INDUSTRIALIZATION OF THE RED TRIANGLE FACTORY



CHALMERS

Master Thesis Project
Ylva Frid

Chalmers MPARC 2012
Examiner: Sten Gromark

Tutors: Jonas Lundberg, Björn Gross, Lena Hopsch

ABSTRACT

The global economy has caused rapid changes all over the world with a speed that has no comparison in history. When industries, ideologies and even nations fall – what happens with the remaining physical structures? This project explores how a complex situation of abandoned industrial buildings could be dealt with, regarding architectonic values, economic aspects and urban re-generation.

My work started from an investigation in text and photo of a site and its current situation - a careful reading from which the mere project is invented. Strategic considerations of heritage management and modest architectonic transformation formed outlines for how a sleeping, underused industrial urban area could be reawaken and integrated to a dynamic city fabric. The relations between new and added layers are connected to a larger context of complex global economic and environmental issues. Through writings, programmatic research and model making, new possible scenarios for the situation are put forward.

To find activities that can start immediately, regardless of the poor physical condition, has been crucial in order to give a time relief in a city where sudden demolitions is a constant factor in the urban development. This is a suggestion for how a transformation might mean not a dramatic change, but rather an interpretation and refining of an existing situation. A new situation is illustrated, where the industrial machinery is reprogrammed into a resilient, clean and ecological sound production engine. The project suggests that the strongest tool to preserve historic buildings is to give them a vital function in a contemporary context.

The aim is to search for an approach and methodology in urban transformation processes, which starts from a careful reading of existing conditions. Taking one small spot of the huge territory, the intention is to suggest an injection of new usage and public accessibility that is scalable for various applications.

TABLE OF CONTENTS

Abstract	5
Introduction	8
Outline	11
PART ONE	
Entering a sleeping landscape site readings	13
PART TWO	
St Petersburg's industrial landscape	55
<i>The industrial belt of St Petersburg</i>	57
<i>St Petersburg – the capital of utopias</i>	59
<i>City narratives and industry as “the other”</i>	63
<i>Time: City and the industry</i>	66
<i>Contemporary urban context</i>	69
<i>The demolition of Rozenstein street</i>	73
<i>The lost passages. Model study</i>	75
<i>Urban integration</i>	77
PART THREE	
The Red Triangle. A vanguard in the industrial development	79
<i>The Red Triangle 1860-1991</i>	81
<i>Buildings and functions</i>	82
<i>The metabolism of rubber production</i>	84
PART FOUR	
Contemporary industry. What is production, and what could it be?	89
<i>What is an industry?</i>	91
<i>The oil and earth</i>	92
<i>The oceans</i>	95
<i>Silent and clean: the industry of tomorrow</i>	97

PART FIVE	
Conservation and transformation.	99
<i>On modern ruins</i>	100
<i>On heritage and transformation</i>	101
<i>Architectonic strategy</i>	104
<i>Programmatic strategy</i>	106
<i>Economic potential</i>	108
<i>Transformation concept: components</i>	109
<i>Metabolism: from linear to circular</i>	110
PART SIX	
Towards a new industry. Project application	113
<i>Project area</i>	115
<i>Site plan</i>	116
<i>Aerial overview</i>	117
<i>Section a-a</i>	118
<i>Aquaponic system</i>	120
<i>Building 218: case study</i>	122
<i>Bioremediation of the landscape</i>	124
<i>Section b-b</i>	125
<i>Implementation</i>	127
<i>New layers: site revisit</i>	129
CONCLUSION	151
<i>Discussion</i>	152
<i>Appendix: model photos</i>	154
<i>Acknowledgements</i>	157
<i>References & photo credits</i>	159

INTRODUCTION

St. Petersburg's city core is surrounded by a unique and wide stretched landscape of industrial architecture - an area that to the surface is roughly equivalent to the historic center in size.

This industrial landscape, mostly built in the period 1850-1910, embraces the city center with its red brick and tall chimneys. At the time, St Petersburg was a leading industrial city of Europe. As a center for innovation and technical progress, it was the basis for the entire industrial development of Russia as well as it played an important role for the development in nearby countries.

The development of industrial buildings also meant participation of prominent architects and engineers, which resulted in unique examples of advanced industrial architecture.

Today, only a few of St. Petersburg's industrial buildings are formally protected from demolition. Some parts are still in use, some have a less clear usage today as a result of the economic recession that followed the collapse of the Soviet Union, which brought many of the former enterprises to bankruptcy. Others are still empty, in a stage of rapid decay.

The contemporary urban development put a high pressure on these areas – the speed of demolition is high, since the central location is attractive for new developments. This means that a unique cultural heritage is at risk.

The buildings and the urban landscape they shape carry a very singular story of technological development, progress and collapse. The story can be told from its details: the broken windows, the rubber pieces scattered on the ground and the stray dogs occupying the once so proper gravel yards. The story could also be told in another scale: the one of changing global economies, ideologies and production systems. How can these stories about humans and the city be passed on? Can also the decay become part of the story preserved? What strategies would allow the areas to be kept, and what can they provide us today?

The starting point for this work was to investigate opportunities to preserve them and in a dynamic way integrate them to the city. How can the sensibility and complexity of the chosen area be extracted and materialized in a new architectonic proposal? And how could a transition process be staged as an organic growth rather than a top-down, investor driven development?

The purpose of industry is to produce things, in order to cater for our needs and demands. The type of production that is characteristic for St. Petersburg's industrial landscapes was heavy, chemical-intensive and highly polluting. Can new, green technology around production, create new industries that can reactivate the abandoned buildings? Could the empty buildings provide space for an urban re-industrialization?

I believe that the best way to argue for a preservation of the industrial buildings is to give them a vital function, and not just putting them under glass as museums or formal protections. By activating them and reintroduce them into the urban landscape their potential could be used to create new urban dynamics.

My final project presents a sketch for an industrial museum tied to a new food production system. The new production system that is developed serves as a mirror of the former one. The program I have proposed for the area is intended to both create a public place for visitors, and a production that paves the way for a less vulnerable food supply. Together, these measures could form financial incentives for the area's preservation.

OUTLINE

This report is divided into six parts. The first part is a reading of the site, as it appeared to me when I visited it for the first time. Part two is presenting the larger context: the historical background, the urban setting and the relation to the heritage narrative connected to St Petersburg. Part three studies the former program of the area – the one that is now lost – and how it affected the society and the environment. The absence of industry lead me into questions about what an industry is today, and what it could be tomorrow. A quick glance at the current situation of food security and economy of Russia is presented in part four. This research influenced my search for a program that could reactivate the buildings – there is a certain need for new strategies on production. Part five concludes the strategic considerations about transformation and heritage, focusing on an architectonic strategy regarding spatial and tactile values, and a programmatic strategy around production and museum. Part six is an application of the program I imagined. Conceptual drawings suggest how the program could be implemented in a selected part of the area. The architectural strategy is tested in a small study on how one building could be repaired and refurbished. Finally, a sequence of texts and collage images present an imagined future of the area – a fictional revisit to the area. Part one and six could be seen as part of one and the same story. The most interesting things are already there, my additions are just aimed to provide access to them

“The nature of St Petersburg is elusive. To try to alter, catalogue or describe it only thickens the mystery. The movement along the facades, penetrating through into the courtyards, creates a dynamism, which is exhaustive, baffling and beautiful. The city lends its mysterious nature to exploration through the connectivity of its parts. Without the mystery of the city, there is no reason to explore, and without exploration, the city becomes static and dies.”

Michail Alexander

PART ONE
entering
a sleeping
landscape
-readings of the
red triangle

The day begins in the dark kommunalka flat just by the Griboedov channel. We have strong coffee and pineapple and Kostya says that the current construction of roman pillars in the Moscow suburbs is just as truthful as modernist cubes. The corners are flooded with memories, dark turquoise soviet times resting under the carpet. It starts to rain when we set off for the triangle, crossing Sennaya square. It is season for melons; the Caucasians sell them from big circular cages, like was it big, strange birds. "The segregation is still mostly vertical. The students and people like me in poor communal flats on the lower floors. In third and fourth floor: normal people. everyday-ish modest people. Then the young carrier couple. On top of it all: the really rich people in furs and big cars."he tells as we walks southwards.

On the southern side of the channel, the time is frozen. A field of uncertain time layers spreads – an area filled with a vague feeling of that something is lost. The enormous buildings once filled with strictly controlled manufacturing processes are standing empty, slowly weathering as water and vegetation dissolves the brickwork.

The site is enclosed and bordered by a deep channel in north, a south directed road in west and a large open area of resently demolished buildings in east. The water in the channel is slow and poisonous, reflecting the golden cupolas in on its vicious screen. The southern road, leading to Narva, passes the gate of horses and warriors. This monument is a copy of the original. Between the empty area and the site runs a smaller street where workers and women in high heels sidestep the water puddles.



The main entry to the site is through the wide arch in north.

At the side of it, the guards reside in a fragile metal shed. The red and white road barrier opens for cars and lorries between 6 a.m. and 00.00 p.m. No questions are posed by the guards upon entrance by foot.

This gate is the only opening in the northern façade of the structure. The total length of this façade, reflected in the channel, is 1.1 kilometer. All windows are evenly distributed along it. Several square towers suspend from it. On the largest one, the word for “red” – krasnyj – has been removed from the roof sign, leaving only “triangle” – treougulnik – in thin metal letters.

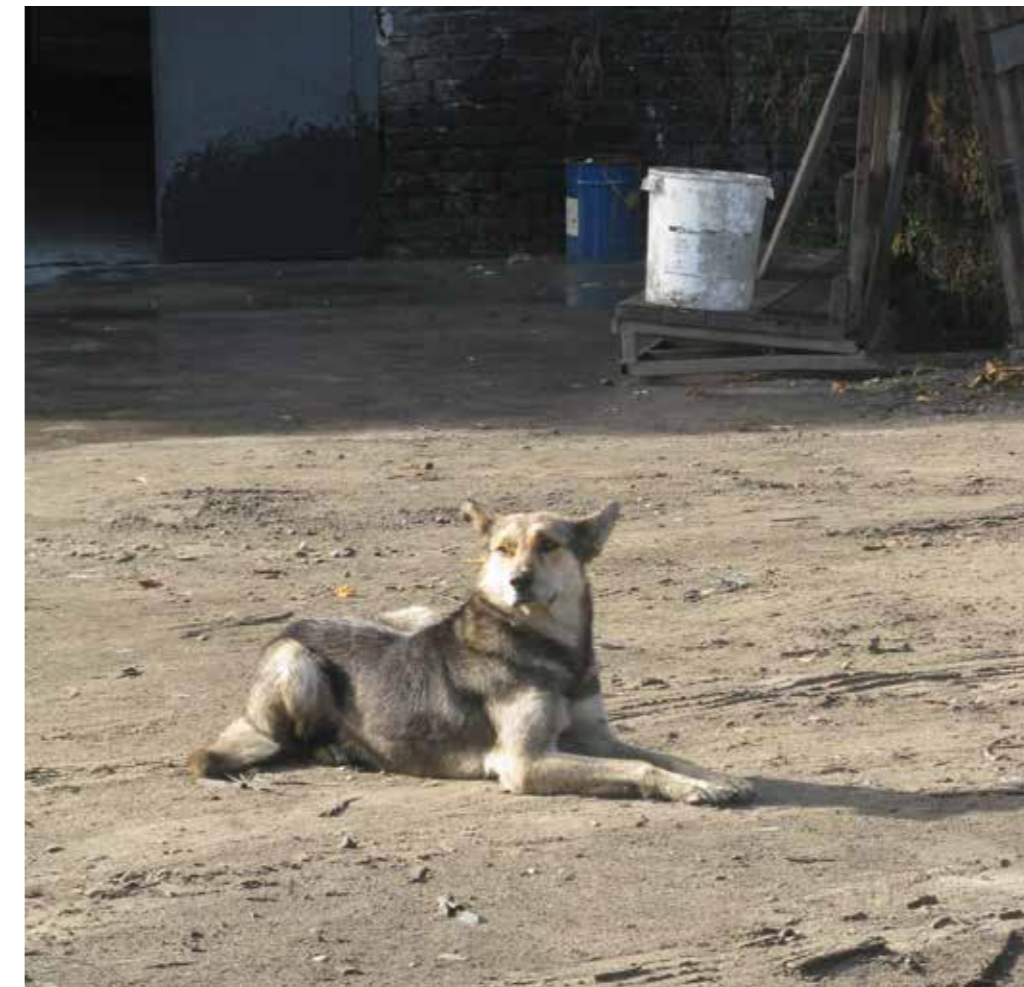


Only the main driveway through the area has hard ground coverage. Elsewhere the ground is something similar to sand, sometimes pigeons or dogs gathered on it. No streets are named, but the buildings are numbered.

The dogs follow the warm patches of september sun as they move over the ground.

“they keep the wild dogs outside you know...”

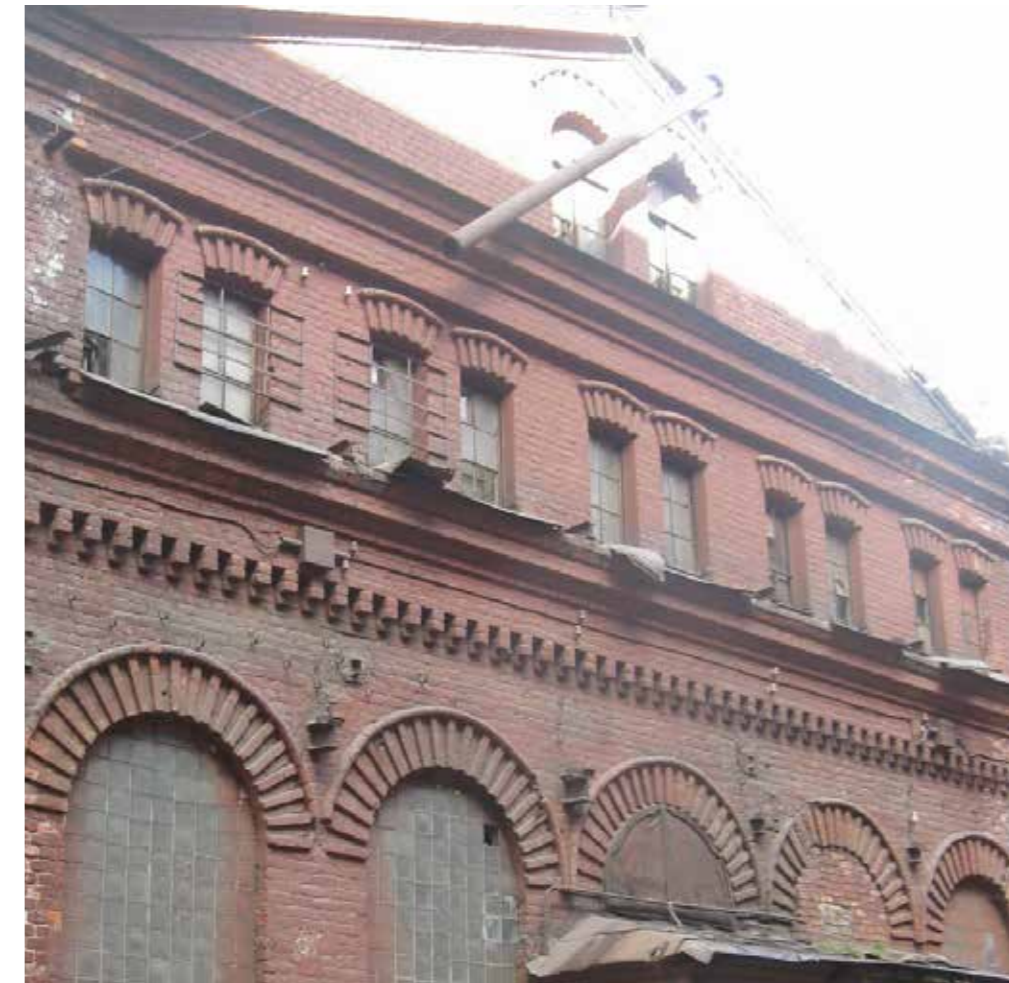
Without them the territory is left open for intruders. As long as the city is populated with dogs, no one needs to guard the gate for dangerous dogs from the forests.



Just inside the gate, something similar to nature is spreading.
Attempts on usages - homebuilt furniture, beer cans, fireplaces
- are spread under the wild grown trees. The hinder buildings
are hidden in greenery, and the windows are broken or covered
with wooden sheets.

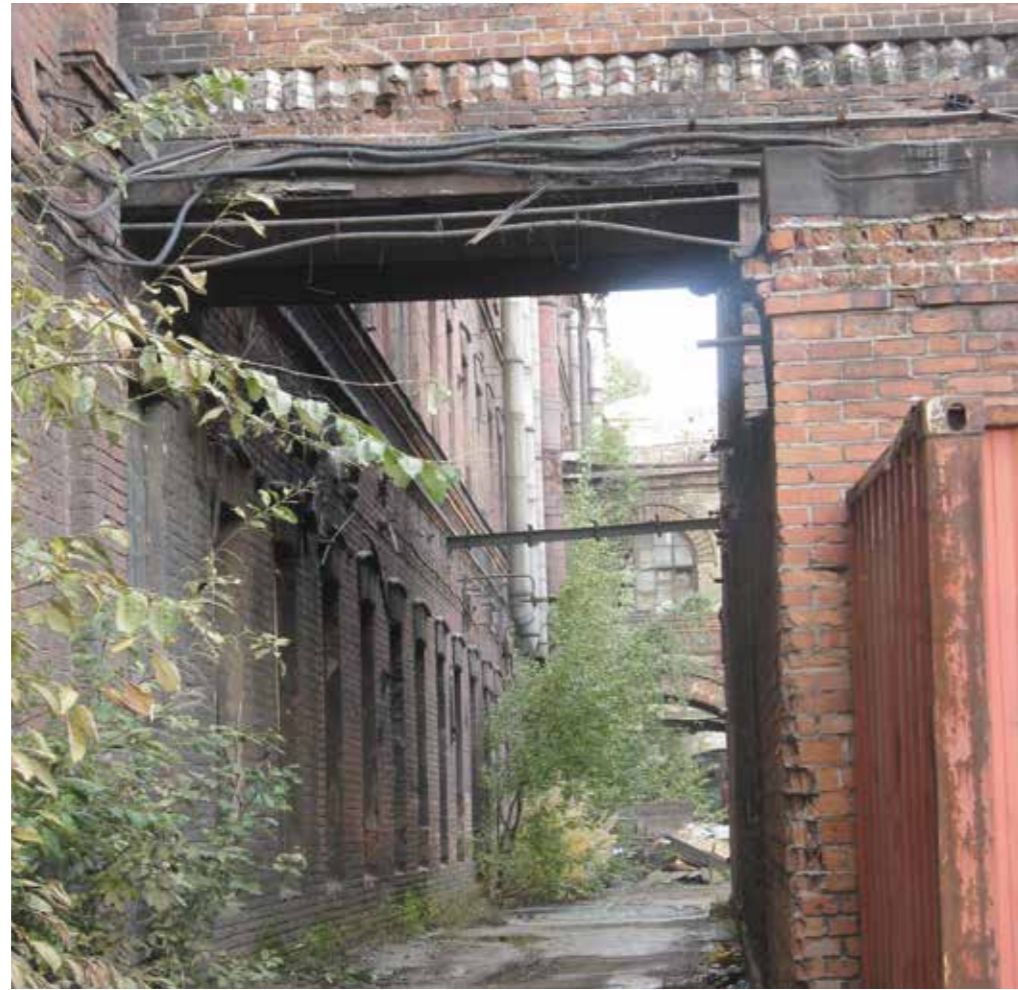


The landscape is a fragmented structure, diminishing into lanes and courtyards. All parts of it; the entire buildings, their vaults, window arches, walls and decorations can be derived from the size of one brick stone. Repeating itself endlessly, it is a red brick fractal.



Here and there, indoor connections have been created between the buildings, with bridges and arches of bare concrete. The light passing through the glass blocks of the concrete arches is the only shade of blue.





A resemblance of urbanity rests over the fading buildings. The streets and facades form a wrenched imprint of a dense city, known as lanes, courtyards and shop fronts. But the windows are empty, the gutters are falling, the inhabitants are gone. It's an imaginary city with yellow dogs rolling in the sand and shiny new jeeps on the backdrop of ruins. There are signs of inhabitants: sporadic figures appearing from the smoky lanes, mechanic sounds from the inner of the dark halls, a dry whiteness from the activities at the concrete plant. It is a vague territory, forming unclear rules of ownership and belonging. We have trespassed their border. Did they notice us?





The whole area and its infrastructure was constructed on the purpose of rubber production. The former usage is somehow echoed in the large number of recently settled car service stations which repairs tires. A system of railway tracks reached the site from southeast and spreads like branches between the buildings, no longer in use.







Some buildings are renovated for offices and studios. The signs telling the directions to them are all very small. Closer towards the northern gate, the physical structure has started to dissolve. Birch trees grow through the roofs, and windows are broken letting wind and rain in to the former manufacturing halls.



Directions for finding the cantine.

Water is the main engine of the entropy process. Rain and melting snow penetrates the stones, freezing them to dust as the water expands in the cold.

Water nourishes the small birch trees, growing in the crackelating roof eemes. Water spreads the pollutions in the ground.





lost program

preparation shop
electric department
chlorination
department № 2.
pumping station
products warehouse
assembly compound
blacksmith
building workshop
washhouse
boiler room
repair of machines
warehouse
compressor station.
transformer substation
car-counting station
repair
laboratory
compressor station
textile impregnating department.
engineers department.
central compressor station
engineer department for warehouse
support materials.
casting
semi-underground storage facility for
oil

assembly line rubber shoes
vulcanizing boilers
rubber compound
preparatory production of the tire
factory
archive
canteen
library
chief mechanic
tank for waste water recycling
transport gallery
storage of solvents and plasticizers
reservoir flooded oil
pump station water recycling.
chlorination.
nursery
treatment plant in the center of the
mixing: a) purification unit industrial
stormwater b) industrial wastewater
pumping station, c) storage tank.
storage of solvents and plasticizers
in the composition: a) storage tanks,
b) enclosure c) pumping station, d)
storage container storage.
treatment plant storage of solvents
and plasticizers consisting of: a)
purification unit storage of solvents
and plasticizers b) pump station with
storage tank, c) reservoir flooded oil.





growth. (gr̥oθ)

1. the process or act of growing, esp in organisms following assimilation of food 2. an increase in size, number, significance, etc 3. something grown or growing: a new growth of hair 4. development from another but related form or stage: the growth of the nation state. 5. any abnormal tissue, such as a tumour 6. (modifier) of, relating to, causing or characterized by growth: a growth industry ; growth hormone



Production capacity 1910: 75000 pair of rubber boots / day.



shrinkage (ʃrɪŋ-kɪdʒ)

1. to draw back, as in retreat or avoidance: to shrink from danger; to shrink from contact.
2. to contract or lessen in size, as from exposure to conditions of temperature or moisture:
3. to become reduced in extent or compass.



ruin (ˈruːɪn) — n

1. ruins, the remains of a building, city, etc., that has been destroyed or that is in disrepair or a state of decay: We visited the ruins of ancient Greece.
2. a destroyed or decayed building, town, etc.
3. a fallen, wrecked, or decayed condition: The building fell to ruin.
4. the downfall, decay, or destruction of anything.
5. the complete loss of health, means, position, hope, or the like.

notes on time

1650: Beckasines. Mist. Sedge. The city is not yet built.

1690: Solitary ships sometimes passing through the marshlands.

1860: The factory is placed on the southern embankment of the channel.

When the autumn water rises the main gate is mirrored in the dark surface.

1890: The sharp smell of chlorine gas. The sound of the engineer's walking sticks in the gravel.

1905: The dark hours in the mounting hall, the frozen time in the bred lines.

1910: A rubber balloon is sewn of thousands pieces. After three days work, it raises to the crisp september sky. The first photographies can be taken from air.

1912: Galoshes, childrens galoshes, car tiles.

1915: The production is steered towards tank tiles and strong boots. The women are packing the cartons under silence, and sending them to the front line.

1917: The federation flag is hauled.

1925: The water rises. The channels break. Horses are seen sink to their breasts and be swept away by the stream.

1941-1943: Work stops. The glue cisterns are emptied, the content sold as food.

1945: The transport railways can open again. Raw material can be distributed.

1991: There is no longer any owner.

1997: Birch trees grow in the guttering. Two windows on the fifth floor break in a winter storm.

PART TWO

**st petersburg's
industrial
landscape**

urban context,
history and
heritage



“Our factory - our pride”- Entrance motive of Baltic Factory, St Petersburg



THE INDUSTRIAL BELT OF ST PETERSBURG

The Red Triangle factory area is one spot of the industrial belt of St Petersburg, which embraces the historic city center with its red brick and smokestacks. This belt could be described as an intersection line between the memorial landscapes of two fallen empires: the Soviet state and the Tsarist Russia, and a forgotten story is in the creation of a strong city narrative.

St Petersburg played an important role at all stages of the evolution of Russia's industrial sphere. Here, almost all the branches of national industry were developed. The progress of industrial construction also meant the participation of outstanding architects and engineers, as well as tight connections with progressive industrial countries. The cradle to the industrial architecture of Finland and Baltic countries can be traced to St Petersburg.¹ Industrial Petersburg, which has embraced the historical center with the redbrick belt of smokestacks and chimneys, became an antithesis to the luxurious imperial capital.

The major part of this belt was constructed during “the golden age” of industrialism, raging from around 1850-1910. The Soviet Period is represented by a lesser number of objects. However, these objects are estimated as important in architectural and artistic sense - some of them as outstanding on an international level.

However, there is little or no formal protection of this globally unique industrial landscape. To understand the situation of the industrial belt of St Petersburg, it is necessary to understand its mental and geographical position in the history of St Petersburg



ST PETERSBURG - THE CAPITAL OF UTOPIAS

St Petersburg is a city of conflicting stories; the scene where two contrasting utopias were materialized. Originally founded as the imperial dream of Peter the Great, it later became superimposed with the undecorated, plain proletarian landscape of Leningrad.

The window to Europe

After a victory over the Swedish army in the Great Northern War 1700, Tsar Peter conquered the fortress of Nyenskans and a tiny piece of swampy land on the shoreline of Gulf of Finland. This remote outer western outer border of the Russian empire was to become the vanguard setting of Peter's extensive transformation of the whole country, shifting Russia from medieval to modern time. The vision of Peter was to here build a glorious, imperial capital, comparable to – or even better outmatching - Paris or Rome. Accordingly, the architects were hired from France and Italy, commissioned to make all boulevards larger, all palaces more glorious and each column higher than the capitals of Europe.

During the following two decades, Saint Petersburg became a city of nobles and extravagance, the gateway through which fine art, sculptures as well as sensuous extravagant court life was imported from Europe. The Empresses who followed Peter, including Catherine the Great, served as personal art mecenates, bringing fine arts earlier unknown to the country. At the end of the 19:th century, the Northern Metropolis of Russia served as an artistic inspiration for the rest of Europe, and was a cultural center point in the whole region. This so called Silver Age was the culmination of the modernization project Tsar Peter once started, and an age when Petersburg felt itself increasingly as a genuine part of Europe. But this extravagant cosmopolitan dream came to an abrupt ending when the coming turbulence of

<

1. The Winter Palace

2. Residential building. Vasilievsky island, St Petersburg

rapid urbanization, inflation and discontents culminated with the coup d'etat in 1917. Just as much as the imperial vision of Tsar Peter was superimposed onto the orthodox Russian culture, creating a strange hybrid city of Russian mentality and European appearance, this empire was to be overlaid with the revolutionary Soviet code two centuries after the city's founding.

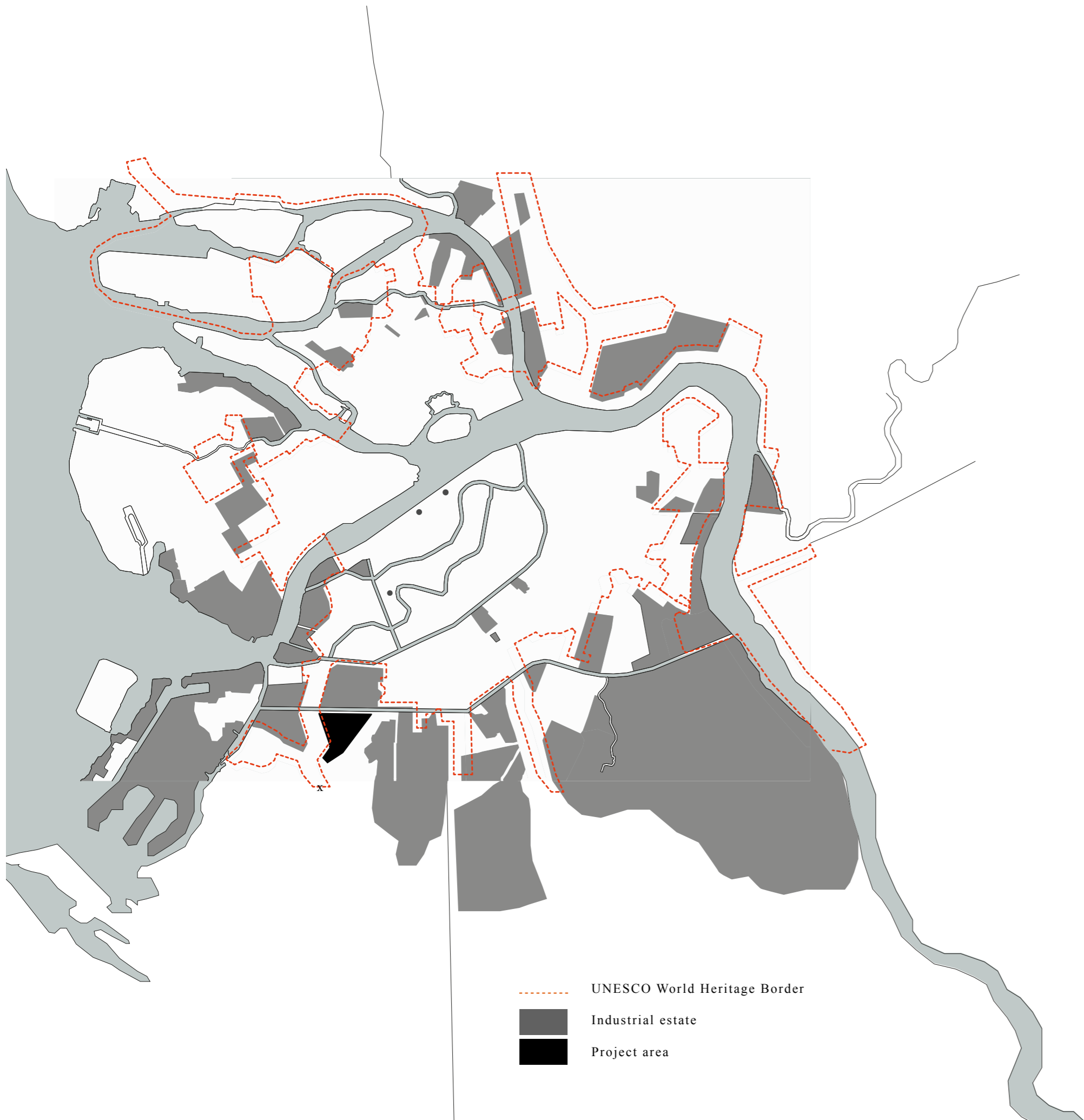
Leningrad

As glorious as the life was of the Petersburg intelligentsia, as miserable was the conditions for the illiterate peasantry communities of the countryside. The latter, living in medieval conditions with little or no contact with the ruling aristocracy, had almost nothing in common with the elitist culture of the educated urban minority. Rapid industrialization had resulted in overcrowded cities and poor conditions for industrial workers. Between 1890 and 1910, the population of the capital, Saint Petersburg, swelled from 1,033,600 to 1,905,600. The new proletariat had many reasons for discontent, and in difference with the suffering peasants, they had few reasons to remain silent. Russia's interference in World War I added further weariness in the city with a growing lack of food as a consequence of the government's attempt to finance the war by printing off millions of roubles, causing devastating inflation. When the blow of revenge finally came, it was directed towards the capital city, symbol as it was for the hated monarchy. The creation of a revolutionary identity for the city of Lenin meant the extinction of the former imperial code.

All attempts on independent art and culture were strangled, its performers executed or deported, the physical traces burned, and the whole administration of the former Empire was erased. Leningrad in the 30's was a city frozen of fear, facing an ideological war against the former social elite.

The next step was to physically manifest the creation of the workers state – machinery in which architects and artists were used as servants of the new ideology.





- - - - - UNESCO World Heritage Border
- Industrial estate
- Project area

CITY NARRATIVES AND INDUSTRY AS “THE OTHER”

Regardless the difference in appearance of the dominating urban time layers, the developed machinery of industries was the engine and driving force which made them both possible. The major part of this belt was constructed during “the golden age” of industrialism, ranging from around 1850-1910. The Soviet Period is represented by a lesser number of objects. However, these objects are estimated as important in architectural and artistic sense - some of them as outstanding on an international level. ¹ St Petersburg played an important role at all stages of the evolution of Russia’s industrial sphere. Here, almost all the branches of national industry were developed. The progress of industrial construction also meant the participation of outstanding architects and engineers, as well as tight connections with progressive industrial countries.

As the city grew, the industrial outer border which surrounded the central grandeur was gradually encircled by the new urban areas. What was originally the city’s outer border became a central periphery. In this distinct belt, squeezed between the imperial center and the Soviet suburbs, the clear city narrative blurs.

As much as the industrial belt was the smoky antithesis of the imperial city who once founded it, it is nowadays a marginalized phenomenon in the debate on heritage and preservation. 1992, the historic center of St Petersburg was inscribed on Unesco’s list of world heritage sites. The protection regards “the very different Baroque and pure neoclassical styles, as can be seen in the Admiralty, the Winter Palace, the Marble Palace and the Hermitage.”(UNESCO) This inscription can be associated with the endeavor to reawake a lost, idealized Old Imperial Russia as generator for a new future and identity.

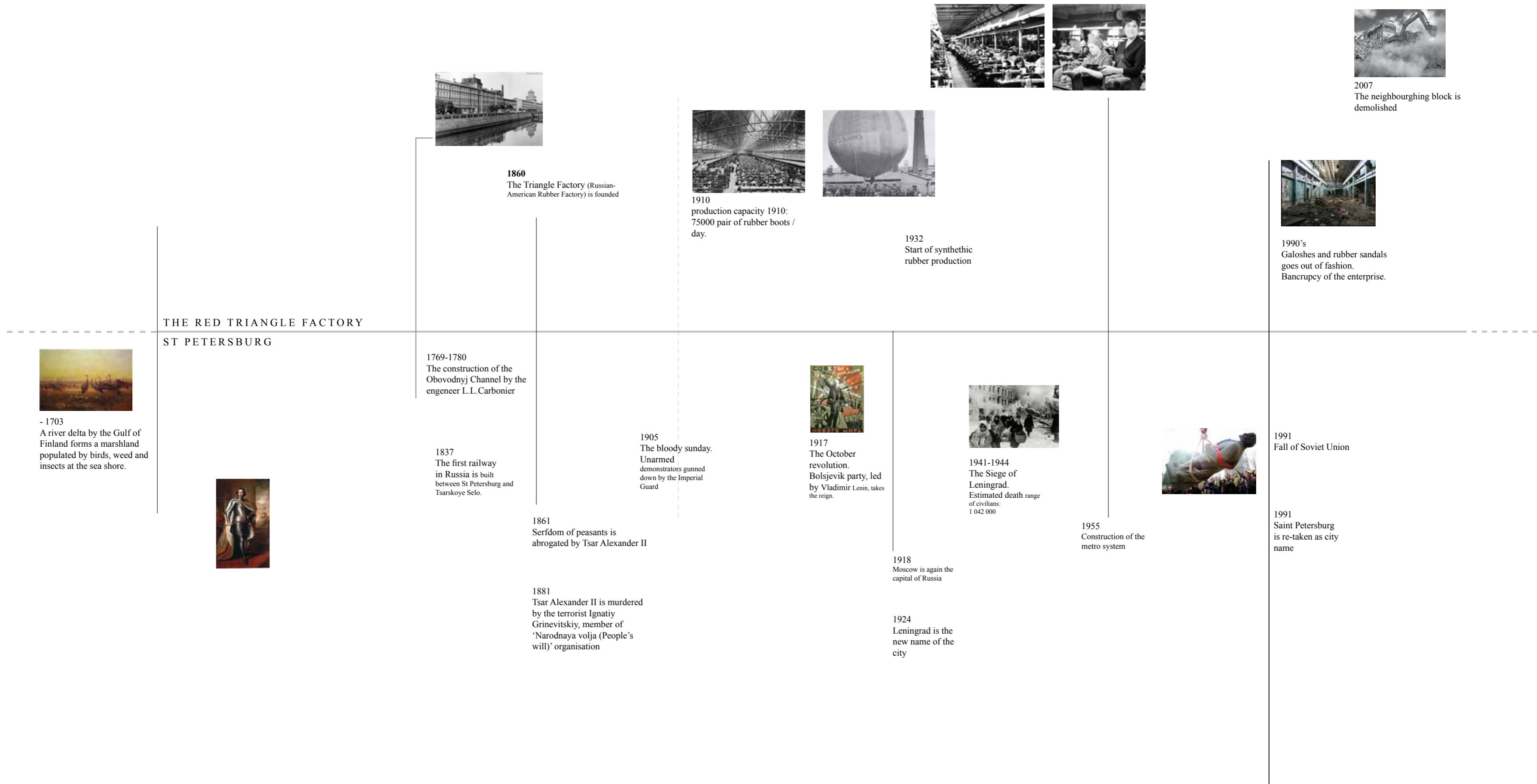
¹ Stieglitz, M. 2003) “Promyshlennaya architectura Peterburga- ‘industrialnyj archeologii’ (Industrial architecture of St Petersburg. ‘industrial archeology’)

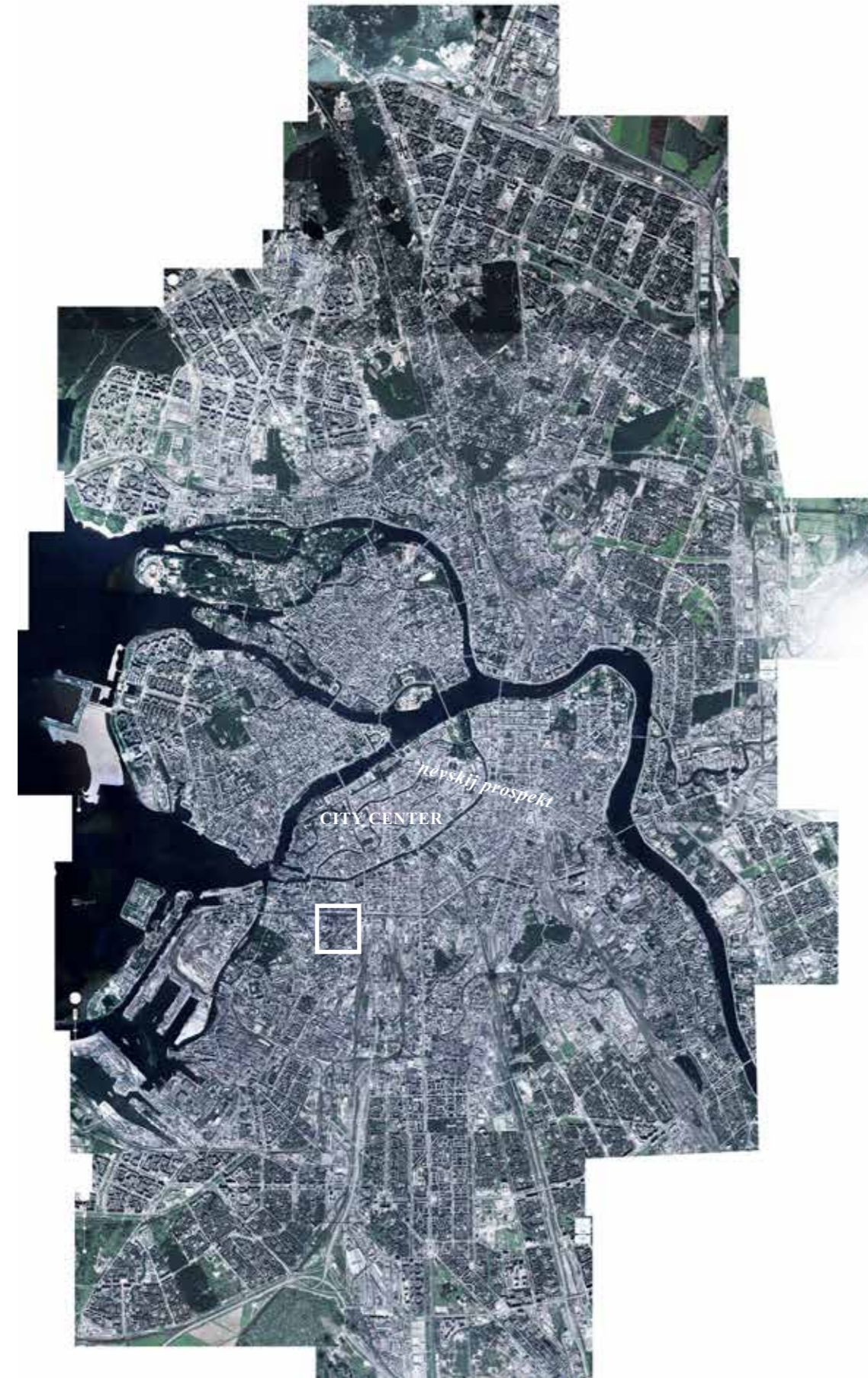
The American literature professor Julie Buckler expounds how the literature further contributed to the marginalization of industry and its workers. The writers and journalists of the late 19:th century sweep over the smoke stacks with their eyes, but never entered the buildings. In difference with the strong genre of proletarian literature in Europe, the Russian literature proved far more effective than state zoning regulations at keeping industrialization out of sight. The everyday life of the workers is to large extent an untold history, kept as a secret by the weathering chimneys. Simultaneously, UNESCO neglects the significant verticality brought to the cityscape by red and white smoke stacks, as well as the industrial heritage as a whole. The heritage border slits just in front of the factories, leaving them on the outside.

Today, the demand for new investments from real estate developers puts a high pressure on the existing urban structure in St Petersburg. Decreasing industrial activities and the absence of formal protection for the industrial heritage is followed by a rapid demolition of buildings. This postindustrial transformation is a process that many places in Europe have already undergone. In cities like Berlin, London and Barcelona, this transmission has to a large extent been connected to a rise of a creative economy. Cheap office space and the ability to act unseen from society's normal conventions have been a combination that created fruitful soil for artists, musicians and creators.



TIME : THE CITY AND THE INDUSTRY





CONTEMPORARY URBAN CONTEXT

The Red Triangle is located just south of the city center, around 1,5 km from the Marinsky district. It is standing along the Obvodny Channel, built to provide the industrial areas along it with goods transport by boat. The channel marks a border between the inner urban areas, and the southern residential districts around the Moskovsky Prospekt. The block between the factory and the metro station that is now demolished, was the last area built before the revolution, intended as a continuation of the classical city southwards.

Transport- from public to private.

During Soviet times, private cars were extremely rare. All transport for common people were made by public transport, or by foot or bike. The urban planning was made according to this, and the city is dense and well connected with public transport. The central location of the factories was a necessity, and with the flow of workers going to and from work the industrial areas were always populated. The Red Triangle is located close to Balitskaya metro station, and bus lines pass the channel embankment. Today, the streets are crowded with cars, and as a side effect, a whole new branch of car workshops grew around the raise of private car traffic. Many of them are located in the industrial zones. The first thing that meets a visitor inside the Red Triangle gate is a workshop for tire reparations. This illustrates the societal shift from commonly owned resources and infrastructure to the new market economy where transport is to a larger extent a private matter. The need for car parking is also a new issue in the urban landscape. Many open spaces have been occupied for car parking, which reduces the amount of recreational areas in the city.

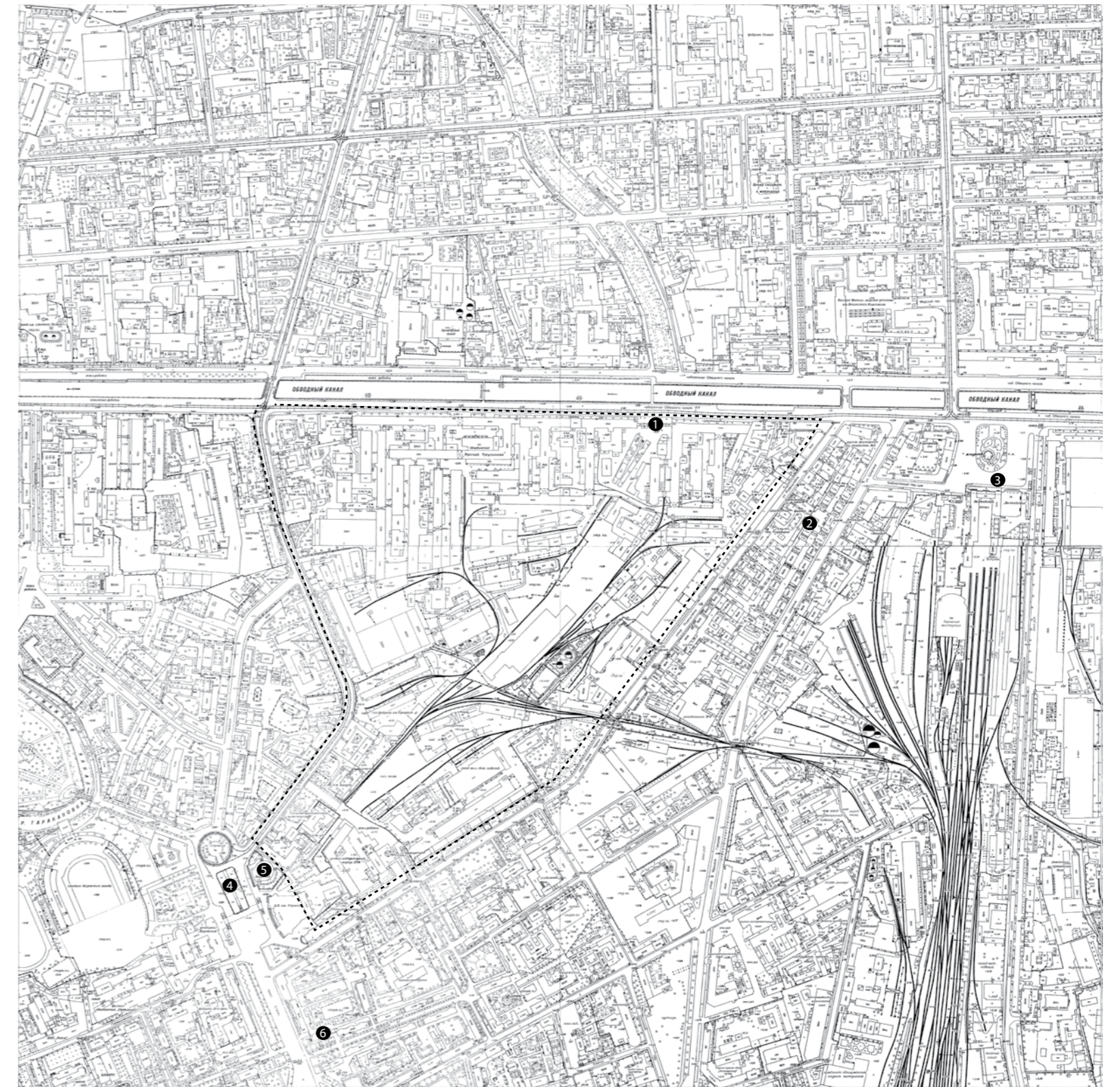


< STREET SEQUENCE

Rozenstein street-Narva gate

MAP OF AREA >

- 1 Red Triangle factory gate
- 2 Rozenstein - Schapina Street, now demolished
- 3 Baltijskaya Metro Station & Railroad Station
- 4 Narva Gate
- 5 Narvskaya Metro Station
- 6 Traktornaya Ulitsa residential area





THE DEMOLITION OF ROZENSTEIN STREET



The block between Rozenstein Street and Schkapina street, just east of the Red Triangle, used to be one of the typical, yellow St Petersburg courtyard structures: weathered facades with a fading neoclassical beauty, intricate courtyards diminishing into each other, narrow passages between them and staircases with ornamented cast iron steps.

Rozenstrein street was a continuation of the urban grid on the south side of the Obvodny Channel .- the first part of a planned city extension southwards that was interrupted by the revolution in 1917. The houses were typical, and just as the rest of the inner city, the quality was not associated to one particular object, but to the dense urban structure as a whole. In 2007, the entire block was demolished, apart from some small factory buildings on the west side. The inhabitants were forced to move, and the yellow houses were torn down to gravel. In its place, a tower block area was planned. If the previous buildings was a low voiced continuation of the historical city core, the new development was rather bringing the typology of the contemporary Russian suburbia closer to the center. These plans were however cancelled by the financial crisis and bancruptcy of the developer in 2007. In 2012, the area was still a fenced off, empty gap. The remaining large trees still tells about where the courtyards has been, and fundaments on the grounds mark the position of some of the buildings.



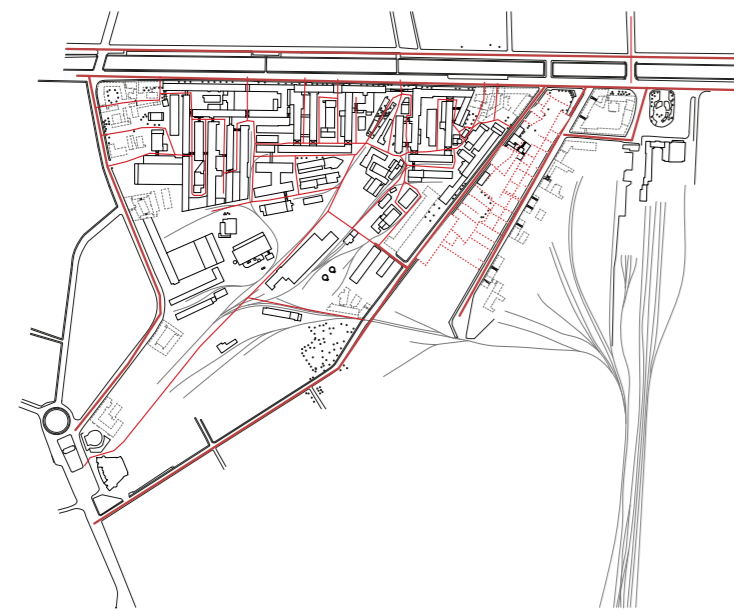
THE LOST PASSAGES. MODEL STUDY

In a first model study of the area, I included the empty estate that meets the factory area on its east side. The contours of the demolished buildings is included to illustrate both the previous and present urban situation. The demolitions meant a loss of population of the area, and also a broken link between the factory and the city. The former courtyard blocks had a spatial complexity which is similar to the landscape inside the Red Triangle area, and it is easy to imagine how the two urban spots could have been closely connected to each other. Also the factory has a lot of lanes, passages and streets. The difference is that it is mostly unused, and has a very unclear feeling of ownership. It raises uncertainty about whether the area is a fenced off private estate or a public space. The spatial complexity is one strong quality of the area. The environment has a very high resolution, a high level of detailing, which is rarely found in new developments. The southeast corner of the "triangle" is residential buildings. As volumes and space, they don't differ from the factory buildings.

SPATIAL INTEGRATION



STREET PATTERN TODAY: Streets and paths are going around the area, with few entrance points



POSSIBLE CONNECTIONS: With a more clearly addressed public usage, the passages through the area could be used to activate the area and create new urban connections.

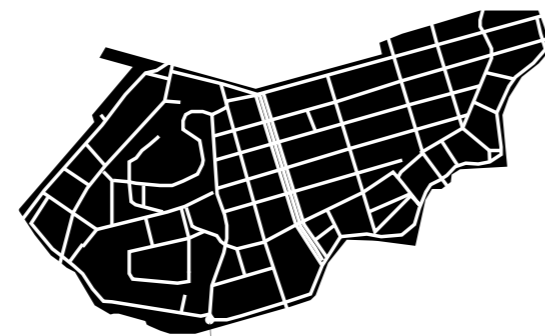
SCALE COMPARISON



THE WINTER PALACE



THE RED TRIANGLE AREA



THE HISTORICAL CENTER OF
GOTHENBURG

URBAN INTEGRATION

The factory area was built by one large actor, and started as a private estate that later was passed over to state ownership. In one way, the whole area could be seen as a monofunctional area, built up entirely around the rubber manufacturing. At the same time, it kept a lot of side functions such as nursery and school for the children of the workers, and it was always full of people. The factories were an indistinguishable part of the city, and the everyday environment for thousands of people. Today, it appears as an enclosed island. The estate is privately owned, and partly rented out for smaller enterprises. The area is accessible, but it is not perceived as a public space. Given the size of the area, it would be valuable to find a way to better integrate it in the urban landscape.

The northern façade of the Red Triangle connects directly to old residential buildings. The buildings are also similar both in scale, structure and visual appearance, which shows the opportunity for a smooth meeting between different urban functions. The poor condition of residential as well as industrial buildings is however striking. Broken windows and balconies at the verge of falling down is a strange appearance for these buildings, that in another city would have been very attractive.

The loss of the production activity, as well as the loss of the residential area next to it, has made the area much less populated. There are today few openings and connections into and through the area. To activate the buildings along the outer streets and establish publicly addressed functions inside could be a way to link the factory area better to the city. A new development at the Rozenstein / Schapina estate could also strengthen the urban environment, and should be made with a similar courtyard structure as the inner city to keep the unique dynamics of St Petersburg's urban fabric.



PART THREE
**the red
triangle**

a vanguard in
the industrial
development



THE RED TRIANGLE 1860-1991

The Red Triangle factory is a very good representant for the industrialization as a new paradigm in the history of humanity. It was founded in 1860 by the American engineer Ferdinand Krauzkopf, who brought the technology of rubber manufacturing to St Petersburg - at the time a world leading industrial city. The Russian-American rubber enterprise was the first rubber manufactory in Russia, and in 1923 it was the first place in the world where synthetic rubber was produced.

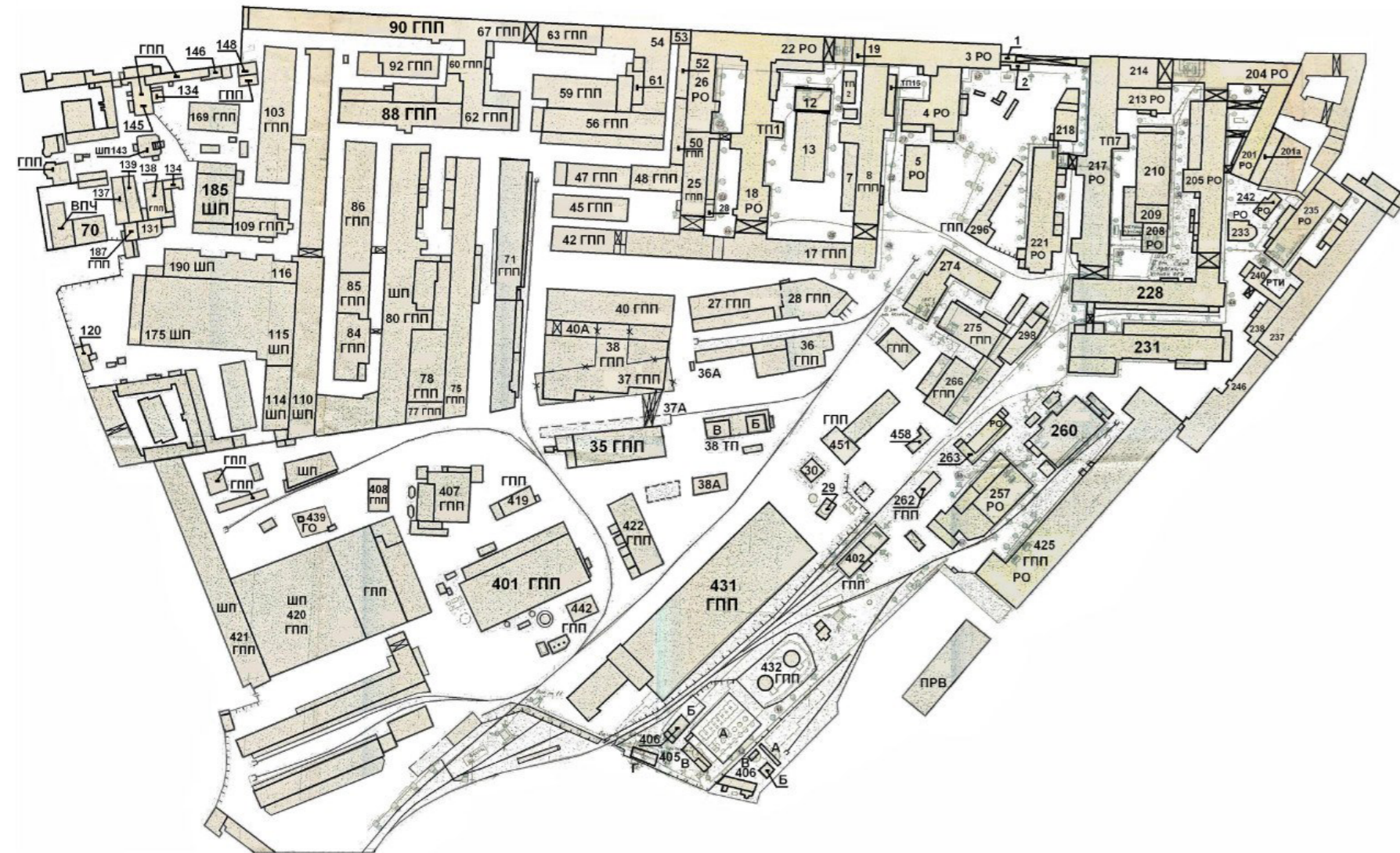
Its architecture manifests the ideals of the time: the strictness as a synonym to civilisation and control. To mark a distance from the earthbound peasantry life was of highest importance for any modern citizen of late 19:th century.

This period was an era of promises. Just as static as the buildings are standing, as much was the factory's outcome a sign of the new era to come: the time of mobility. Tires for cars, mopeds and bicycles was the main products , spreading over Europe bearing the quality sign of the red triangle.

As much as the factory was an engine in the new society of mobility, it was highly dependent on a global chain of transports. The raw material in its initial phase, the natural latex was a product of the colonial slave system at the time. The factory was accordingly one point in the linear metabolic chain that industrialization process created: the chain of nature resources being transformed into products and finally waste.



BUILDINGS AND FUNCTIONS



SYMBOLS

- ГПП - buildings Enterprise "Red Triangle".
- ШШ - buildings of tire production.
- ПО - buildings and structures of production of rubber footwear.
- Buildings and structures existing.
- Buildings and structures projected.
- Buildings and structures to be demolished.
- Buildings under renovation.
- Existing railroad tracks.
- Guarding

EXISTING BUILDINGS AND ENTERPRISES

- 3, 4, 5, 8, 18, 25, 26, 48, 53, 54, 56, 62, 67, 75, 80, 86, 88, 96, 101, 114, 138, 201, 204, 214, 217; 221, 231, 233, 235, 237, 238, 246, 257, 262, 263 - production building.
- 12 - Compressor and home appliances.
- 13, 17 - 13 and the housing 17.
- 22 - Section of OGM.
- 27, 37, 38, 40, 42, 45, 71 - warehouse building.
- 36, 47, 77, 78, 248 - preparation shop.
- 28 - electric department
- 59 - department № 2.
- 61, 109 - pumping station.
- 85 - department number 7.
- 92 - department № 2.
- 103 - department number 9.
- 110 - products warehouse, avtokamerny shop.
- 115 - assembly shop.
- 131 - garage DOSAAF.
- 134 - blacksmith
- 35 - bunker storage technical charcoal.
- 139 - building workshop.
- 143 - building OKS.
- 175 - common building.
- 187, 265 - washhouse
- 205 - industrial and domestic building.
- 209, 210, 407 - boiler room.

218 - machine shop.

228 - warehouse and home building.

243 - compressor station.

254, 296 - transformer substation.

266 - car-counting station.

274 - commercial

275 - repair

401 - TATS

408 - Laboratory, OTK.

419 - Compressor Station

420 - textile impregnating department.

421 - Engineers department.

422 - central compressor station.

425 - engineer department for warehouse support materials.

431 - casting

432 - semi-underground storage facility for oil - 2000tn.

439 - JR.

442 - service and amenity building.

451 - pump station water recycling.

458 - chlorination.

BUILDINGS AND CONSTRUCTIONS

29 - pumping station automatic fire.

30 - fire water storage tank 2 pcs.

36A - tank for waste water recycling

37 - Mixers

37A, 40A - transport gallery

38 - treatment plant in the center of the mixing: a) purification unit industrial stormwater B) industrial wastewater pumping station, B) storage tank.

405 - storage of solvents and plasticizers in the composition: a) storage tanks, B) enclosure, B) pumping station, F) storage container storage.

406 - treatment plant storage of solvents and plasticizers consisting of: A) purification unit storage of solvents and plasticizers, B) pump station with storage tank, B) reservoir flooded oil.

THE METABOLISM OF RUBBER PRODUCTION

The first manufacturing process that took part in the buildings of the Red Triangle handled a linear production system, where organic matter (latex from rubber trees), was transformed into industrial components and consumer products, which, at the end of their lifespans, end up as waste. The organic raw material is thus transformed into toxic waste – a linear flow from organic to toxic that gradually drain on the ecosystems of the earth.

Rubber production was also one of the first truly global industries, since it depended on imported raw materials, and export of ready products. This creates a complex chain of trade relations over the world, affecting humans and nature on very far distance from the actual assembly line.

Nature resources

The raw material for the first rubber industries was natural latex from the rubber tree. The liquid latex can be extracted from the branches of the tree. To increase the harvest volumes, rubber plantations soon came to replace the natural forests where rubber was first collected.

The labor-intensive harvest work was a driving engine for an expansion of slavery in late 19:th and early 20:th century. The rubber used in the European industries was mainly taken from Congo in central Africa, but also from Latin America.

The rubber slavery is one of the darkest chapters in the history of European colonialism. Killing and brutal battery were common in the raw material extraction.

Manufacturing

The first latex products were fragile and brittle as the material dried and cracked. With the invention of chemical vulcanization, it became possible to convert the natural rubber into more durable materials. Sulfuric acid was the most common chemical used for this process.

The manufacturing process also demanded a high amount of human labor. The industrial work became the new reality for many of the former Russian peasants that migrated into St Petersburg from poor conditions at the countryside.

The rapid urbanization process at the turn of the century was a melting point where



new habits around the daily life started.

Consumption and market

Another result of the industrialization and urbanization was the creation of the modern consumer. The new worker class, which, in difference with the peasants, couldn't produce their own food or clothes to the same extent, contributed to the most important need for a growing industrial economy: a market.

Waste

In difference with synthetic plastic, rubber cannot be reshaped whilst once formed. The vulcanization process is irreversible. This material condition means that rubber is hard to recycle. Today, abused and highly toxic car tires are flooding the world. Only in EU, 250.000.000 car tires add to this mountain every year.

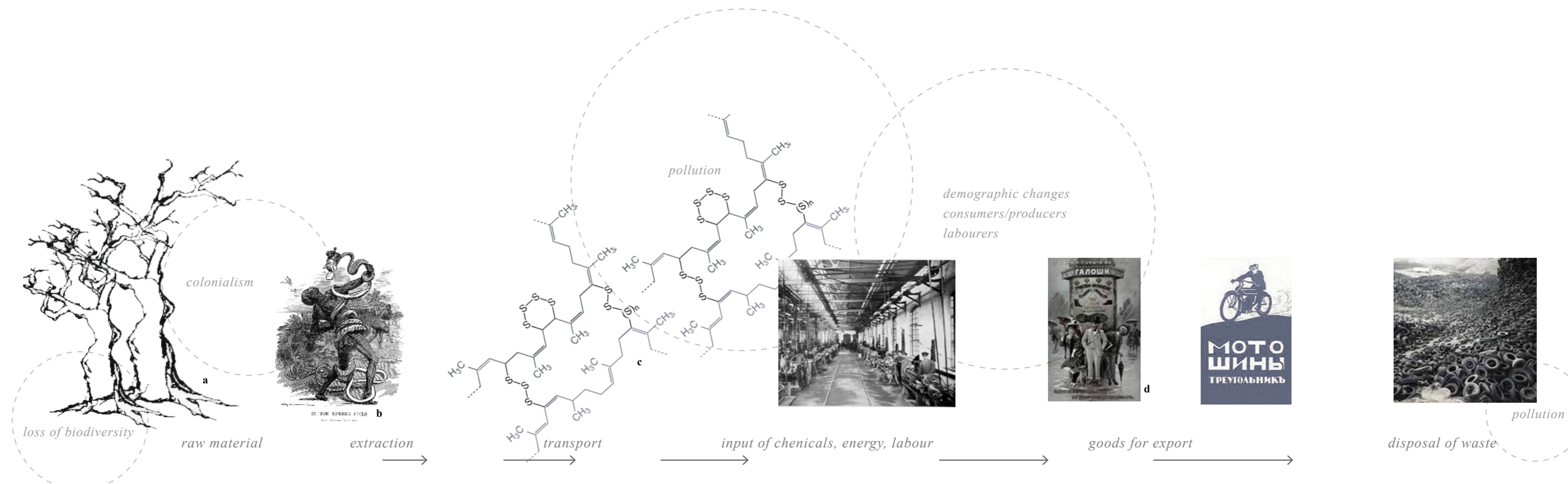
The only way to recycle rubber is to grain into small particles that can be used as ballast in new plastic conglomerates. This is a good way to encapsle the toxic emissions that otherwise set free from disposed rubber.

Mobility and modernity

Rubber was one of the key inventions that made the whole societal transition of the 20:th century possible. Tires for cars, bicycles and military vehicles were essential inventions that enabled a society of mobility that took shape during the last century. On an individual level, bicycles and cars meant a freedom to move, a sense of modernity and part of a new lifestyle. On a societal level, globalized transport chains and the "modern war machinery" were closely connected to the supply of lorry tires and military equipment.

Along with a growing market for private consumption, clothes and accessories became part of the creation of a personal identity. Galoshes, rubber boots and bike tires from the Red Triangle factory were sold all over Europe with the help of advertisement that proved the products ability to provide the bearer with the status symbols of that time.

THE METABOLISM OF RUBBER PRODUCTION



NATURAL RESOURCE
 The raw material for the first rubber industries was natural latex from the rubber tree
 (a) The liquid latex is extracted from its branches. To increase the harvest, rubber plantations soon replaced the natural forests with a loss of biodiversity as a consequence.

EXTRACTION
 From the late 19th and early 20th centuries, demand for the labor-intensive harvesting of rubber expanded slavery (b) in both Latin America and Africa. Killing and brutal battery were common methods in the raw material extraction of the early rubber industry.

MANUFACTURING
 With the invention of chemical vulcanization (c), it became possible to convert the natural rubber into more durable materials. Sulfuric acid was the most common chemical used for this process.

DISTRIBUTION OF PRODUCTS
 Development of the rubber industry was a key factor in the whole societal transition of the 20:th century. The possibility to produce tires of good qualities was a breaking point for thre creation of a mobile, car driven society, as well as a globalized transport sector.

WASTE
 In difference with synthetic plasters, rubber cannot be reshaped whilst once formed. This condition makes rubber a hard material to recycle. Abused and highly toxic car tires are flooding the whole world. Only in EU, 250.000.000 car tires adds to the mountain every year.

PART FOUR
**contemporary
industry**
what is
production, and
what could it be?



WHAT IS AN INDUSTRY?

Zooming out a bit, industries could be described as human machines, created to fulfill our needs without efforts. What the industrial revolution, paired with the breakthrough of fossil fuels, once brought humanity, was the uplift from the travail for basic food supply and achieve a material and cultural increase of living standards.

Architecture could be seen as a protocol for organization of the physical human environment. This field was historically mainly meaning the design of churches, palaces and other significant buildings. The most extensive impact on the landscape around us today is however not a product of architectural planning, but of comprising production activities such as minery, ocean fishery, agriculture and forestry. The industrial city of the 19:th century was a smoky, dark redbrick occurrence. Their disappearance from the city cores for hygienic and environmental reasons, didnt mean that their impact disappeared - they exist somewhere else.

Facts on the contemporary Russian economy renders and image of a nation based on the export of oil, and a a vulnerable agricultural sector - both for the nation itself and for the environment affected by it.

THE OIL AND THE EARTH

Two remote regions of Siberia form what can be seen as the heart of a fossile economy, fuelling Russia as well as Europe with oil and gas. The YNAO and HMAO regions, almost unsettled areas, account for 85% of Russia's gas production (16% of world total) and 67% of oil production (8,7% of world total). They are the main source of funds for the State: 73% of total Russian export is dedicated to gas, oil and oil products.¹

Agricultural production has not yet recovered from the crisis of the 1990's. Over the past ten years, Russia has lost one-third of its fertile land, and more than 40 million hectares of productive lands have been built up or become overgrown with forests.² Following the breakup of the Soviet Union in 1991, large collective and state farms – the backbone of Soviet agriculture – had to contend with the sudden loss of state-guaranteed marketing and supply channels and a changing legal environment that created pressure for reorganization and restructuring. In less than ten years, livestock inventories declined by half, pulling down demand for feed grains, and the area planted to grains dropped by 25%.³

The share of household plots in Russia's agricultural production increased from 26% of aggregate value in 1990 to 53% in 2005. The high import ratio on food stocks reveals the low range of domestic production.⁴ Taking a city as Moscow, import dependency means very long transports and a vulnerable food security situation for the urban population if something disturbs these transports.

1 "Thinning project group". Stelka institute, Moscow

2 "Thinning project group". Stelka institute, Moscow

3 Wikipedia (2012) http://en.wikipedia.org/wiki/Agriculture_in_Russia

4 Nefedova, T. (2011) *The Impact of Urban Population on the Rural Development: Agroholdings, Dachas and their Geographical Preconditions*. Moscow: Institute of Geography RAS



1. Household plot in Fedyakovo, Nizhny Novgorod.
Photo: Vladimir Menkov, Wikipedia commons



2. Gas trunk pipeline heading to Europe
Photo: Armin Linke
"Thinning project group". Stelka institute, Moscow



THE OCEANS

“Many marine ecologists think that the biggest single threat to marine ecosystems today is overfishing. Our appetite for fish is exceeding the oceans’ ecological limits with devastating impacts on marine ecosystems. Scientists claim that the maritime ecosystems are now profoundly changing, perhaps forever. The speed of which the populations collapse lacks previous comparison, and it continues to increase.”¹

One of the last century’s creations of industrial food production, is the modern fishing industry. This floating harvesting machinery, forms a silent abattoir of satellite navigation and sonar equipment. According to a Food and Agriculture Organization (FAO) estimate, over 70% of the world’s fish species are either fully exploited or depleted. This causes a major threat not only to the ecological system, but to the food supply of millions of people. ¹

The coastline of the Russian Federation is the fourth longest in the world after the coastlines of Canada, Greenland, and Indonesia. In 2005 the total catch of the Russian fishing industry was 3,190,946 tons of wild fish. This made Russia the ninth leading producer of fish in the world. Accordingly, Russia is also in the lead of ecological impact on the world’s oceans.

The potential of aquaculture
There are already political targets for an increased development of aquaculture – a potential to reduce the negative environmental impact of fishery and still ensure economic development. Over sixty species of fish, invertebrates and seaweed are commercially cultivated by aquaculture or fish farming in Russia. In 2007 there were 300 aquaculture enterprises.



SILENT AND CLEAN: THE INDUSTRY OF TOMORROW

To search for new, sustainable systems for food production is crucial. Could the empty manufacturing halls of the Red Triangle be seen as an opening in this development, holding a potential to be reprogrammed and reinterpreted into a new industry, a sustainable, clean food engine?

One of the most compact and efficient food production systems known on earth, is the aquaponic farming. It is not a new technology, it dates back to the Aztecs, but recently it has been re-discovered. Aquaponic farming combines the techniques of Aquaculture (fish farming) and Hydroponics (plants grown in water) to create the most sustainable food production system on earth. The system works by using a type of fresh water fish (usually Tilapia or Trout) in combination with vegetables grown in circulating water. The relationship works perfectly between the fish and the plants. The fish produce waste in the water, and through natural bacterial processes, fertilize the plants, which in turn clean the water for the fish. The process is completely organic and sustainable for both parties. The system can be used on a small scale in a backyard, or for commercial production on large farms. The intensity, long growth season and high outcome paired with the ecological and silent format makes it one of the most potentially urban food production systems.

Possible production capacity:
5,2 kg tilapia fish / sqm and year
200 lettuce heads / sqm and year

“No identity is fixed, each one needs to be constructed – and moreover, without any guarantee that the construction will ever be finished and that the roof will be laid over the completed edifice. There is no ‘return’ to natality – the past has not been stored in a warehouse until such time has come when it may be taken out, dusted and restored to its former beauty, it needs to be sewn anew, from the selfsame tokens of meaning encountered – always fleetingly – in the city street. In this respect there is no status difference between back and forth, past and future, ‘glorious heritage’ and daring project”

Zygmunt Bauman, *Life in Fragments*. 1995

PART FIVE

conservation and transformation

what should be preserved, for whom, and how?

ON MODERN RUINS

The empty halls inside the Red Triangle tell about our position: this is the amount of fragility you have created in your attempts to control nature, to raise yourself from the hard life close on the muddy ground.

Usually, the material structures transform and adapt as an integrated part of general societal change. Purposes, owners and facades of buildings shift with economic conditions, fashions and demands. This transition normally happens gradually and seamlessly as an imperceptible part of any normal community. It is not until an area or a building, for some reason, is left behind this constant change that the process becomes visible. That is what happened with the Red Triangle. During the chaotic decade of the 1990's, it lost contact with the surrounding city. It became like a small island of sand in a river of time – an isolated part which the transformation process bypassed. The factory was left in a vague condition of un-time, a state lacking all markers of time everywhere in of the outer world. Meanwhile, the city continued its journey into a new era.

To enter such an abandoned space, is to enter a field where the sharpness between different layers of time diminishes. The boundaries are floating, nothing is completely certain. A cathedral or old castle is an obvious ruin, something not belonging to our time, it can be explained. The modern ruins bear subtle traces of what could have been now. They attract us with their worrying, vague feeling of lost activities. It is a condition still comparable with our own world. It provokes our truths, our comfort and our faith.

What they empty industries actually mirror is our own time. What was unquestionable and stable one day - the work place of thousands - proved to diminish over a night. In its inverted state of activity the abandoned manufactories reflect the fragility of our utopias and economic machineries.

The process of decay in a building cannot be frozen in one specific moment. It is a constant movement forward, a progress which is tied to the impact of climate, weathering and time. The somnambulistic condition is kept just as long as this process is unbroken. As soon as any reparation or restoration started, the dialogue changes. The voices from the past will quiet as fallen fragments are cleaned away and dissolving walls are replaced with modern, standardized products.

Petersburg –and Russia - is a story of constant breakages. The break of continuity is perhaps the only constant in a story of dramatic changes.

The industrial ruins, in their discomfiting contemporary appearance, provoke us to answer complicated questions. The empty halls inside the Red Triangle tell about our position: this is the amount of fragility you have created in your attempts to control nature, to raise yourself from the hard life close on the muddy ground. Standing, as in St Petersburg, slightly outside the official narrative interpretation of the city's identity, they also bear the opening for new interpretations of a contemporary urbanity, still rooted in the city. Every collapse is an opening - a moment where new definitions can be found.

ON HERITAGE AND TRANSFORMATION

For thousands of years, the Red Triangle area was a huge marshland, holding a vaporous ecosystem of seabirds, sedge and gaunt trees. All in a sudden, this was replaced by the huge rubber machinery, blowing brimstone and toxic air over the landscape. For a little more than a century, this activity created thousands of employment opportunities, a huge economic asset and endless amounts of car tires, galoshes and other rubber items flowing out through the factory gates. Just as abrupt as it once started, the activity stopped. The effort once spent on this, is reflected in the highly detailed and constructive complex architecture. As a represent for the vanguard industrial development in the 19: th century, the area belongs to what experts consider as an important historical setting both on a regional and global level. But how, and why, should this structure be kept?

The criterias for classifying an area as a heritage is, in a contemporary practice, connected to the idea of integrity. The area should have a strong integrity both in its structure, its urban location and also in its association. A heritage should also be understandable and accessible for all, since the idea is to maintain important pieces of our common human assets. The Red Triangle could easily be described as having a strong integrity in all aspects, but it is at the current moment not accessible, and has no formal protection. As the activities on the Red Triangle area shifted from one, large scale manufacturing system into a fragmented pattern of small business, the perceived ownership blurred. It is nowadays not obvious if it is a private estate, or just a part of city – publicly accessible just like any normal street.

Heritage management and restoration could be seen as a process of bringing products of human activities back to common efficiency – to find ways to make them useful. The contemporary heritage management is strongly connected with an emphasis of authenticity, and this affects how restorations and transformations are carried out. The notion of authenticity was thoroughly addressed in the Nara document , in which the ability to understand heritage values depends on the degree to which the relevant information may be understood as credible or truthful. This means that stylistic restorations and reconstructions of lost historical pieces is actually a threat to the authenticity of an architectural object. Jokka Jokilehto writes in his book “A history of architectural conservation that compare the “authentic with the identical is like to compare the specific with the general”. The artistic concept that a building or artwork embodies must be seen as non-physical, as a whole, rather than a geometrical total of its parts . This whole is something that is perceived by the viewer in the presence, and also something that potentially may continue to exist in its parts, even if the original is broken into pieces. Basically it means that a reparation of a building, in which original pieces are replaced with new ones, might mean a threat to the historic values that the renovation aim to protect. The strategy for dealing with sensitive historical environments often means that new parts should be clearly distinct from the original ones.

Strategy

A dynamic transformation of an area such as the Red Triangle should include possibilities to display its complex and intriguing history without turning it into a historicizing scenography. Heritage protection often becomes the protection of a certain narrative, in which other stories than the dominating may be forgotten. The protection of the historic center of Saint Petersburg is one example of this phenomenon. The palaces, boulevards and churches materialize the history of an empire, in which the ordinary citizens and their work places – the industries – are excluded from the protected area. Moreover, a large number of buildings are demolished in contemporary developments and replaced with imitations of the former buildings carried out with modern building techniques. This creates a strange, artificial atmosphere in the city.

The strong narrative of the imperial St Petersburg is today somewhat in conflict with the additions made during Soviet times. In the search for a new identity after the fall of the Soviet union, the tendency is to put these two stories in opposition to each other. There has been a strong trend in many urban projects to recreate what could be described as a neo-imperial style, flirting with the prerevolutionary ideals.

Since the industrial areas are not part of any of these narratives, and also often underused, they leave an opening for new interpretations of a contemporary city, still rooted in the city's history. To better integrate them in the urban landscape would be a way to blur this strict narrative reading, and open for new interpretations of the city and its history.

The Red Triangle area is by its structure holding a strong potential for any kind of urban development. The factory area consists of buildings with an extreme generality and repetitiveness. The large halls could provide space for almost any activity, which give a potential for very different usages. The spatial clarity which forms defined streets and outdoor spaces is another a great quality. Pollutions from the former usage however put an obstacle for turning it into residential or office buildings. A strategy for transformation could be divided into an *architectonic strategy*, dealing with the material relations between different time layers, and a *programmatic strategy*, where the usage serves as an engine for a new development.

Program

The program I propose is a combination of a new production activity, and an industrial museum. These activities take advantage of the large interior halls, and need no extensive rebuildings. Surface layers and remaining equipment can be kept – the new usage is just inserted as a new layer on top of the existing ones.

The production activity as an aquaponic system for food production. This program has both a potential to contribute to the development of a more sustainable and secure food production sector, as well as it has aesthetic qualities with its use of large water surfaces. Moreover, it requires little – it could be set up in the buildings without any larger investments in building reparations. With the difference between the former and the new production methods, the historical development is mirrored. The new production layer of aquaponic farming creates a circular metabolic flow, in difference from the linear cradle-to-grave concept of the rubber manufactory. It also means that the area is kept in a dynamic condition, and not turned into a static museum. The system is a low-tech, silent production system, which allows it to be combined with public access. I intend the production system to occupy some parts of the buildings, while others are kept in the current condition. Allowing access by a simple infrastructure let visitors explore the area themselves. This also means that the story of the collapse is kept as one part of the common narrative.

An early investigation of the spatial connections was followed by a consideration of possible new programs and their best location in relation to the surrounding urban structure.

ARCHITECTONIC STRATEGIES

AUTHENTICITY. Keep a clear distinction between different time layers. Accept decay as one of these time layers. Maximize the character of each such layer – let each have its own integrity

MATERIALITY Let the existing material qualities guide new decisions on design

CHARACTER Use additions to create a dynamic dialogue between the past and the presence

REFERENCES : DEALING WITH TIME LAYERS

1. ABSTRACTION

Färgfabriken art hall, Petra Gipp architects 2010

The process of transforming the former paint factory into a gallery for contemporary art was a project of abstraction and reduction. From the current conditions, a new character was extracted from the historic layers by refining and tuning colors and glossiness of the structure.

2. STRUCTURAL INTEGRITY

Kolumba museum, Peter Zumthor 2007

The romanesque church ruin is functioning as a museum, where new layers are added to the old one. The different time layers are clearly distinguishable, each adding complexity to the whole.

3. INTERMISSION

Kalasadamaa, Helsinki

The former fish harbour area in Helsinki is under transition, where industries give room for residential structures. During the development process, temporary activities of art, culture, urban farming and concerts are encouraged in the area. Some might appear just shortly, while others could become permanent and affect the final planning decisions for the area.

4. REINTERPRETATION

High Line Park, New York

An abandoned railway track is transformed into a park walk, adding greenery and new pedestrian connection in a dense city area.



1.



2.



3.



4.

PROGRAMMATIC STRATEGIES & URBAN POTENTIAL

GREEN RE-INDUSTRIALIZATION

Silent, clean production methods to create a more resilient regional food supply. Potential to take advantage of large halls and to achieve economic feasibility to bear renovation costs.

INDUSTRIAL MUSEUM

Combine new production with display of the history to create a new kind of visitor's attraction supplementing the historicizing and formal character of Petersburg's tourist attractions - currently the largest income source for the city.

ALLOW PERIPHERY

A city needs its backsides – the place where new inventions, ideas and enterprises grow. Access to cheap space is crucial for any dynamic urban economy – keep some parts in bad condition.

LANDSCAPE TRANSFORMATION

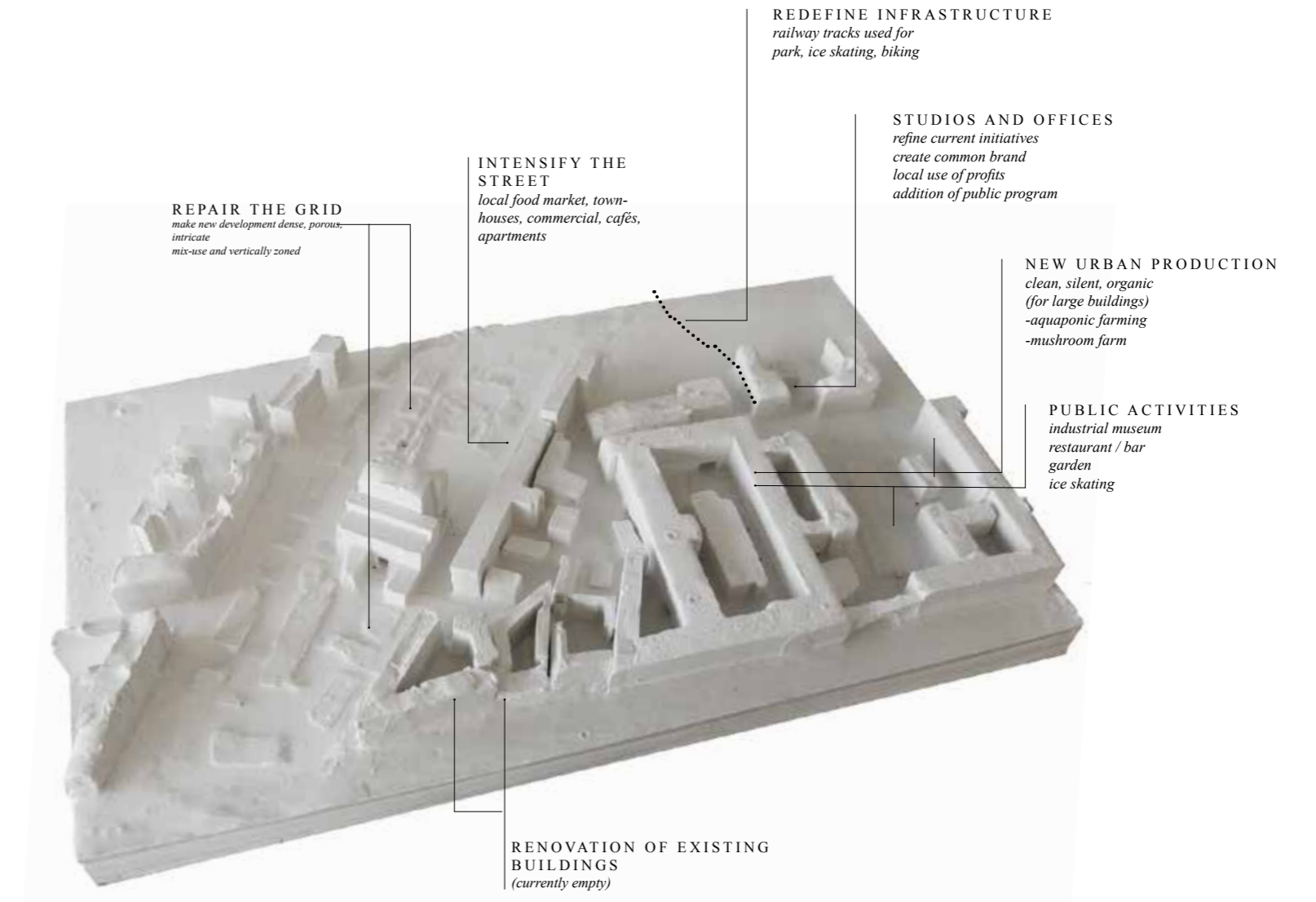
Develop the space between the buildings to become a new kind of recreational area.

LANDSCAPE DETOX

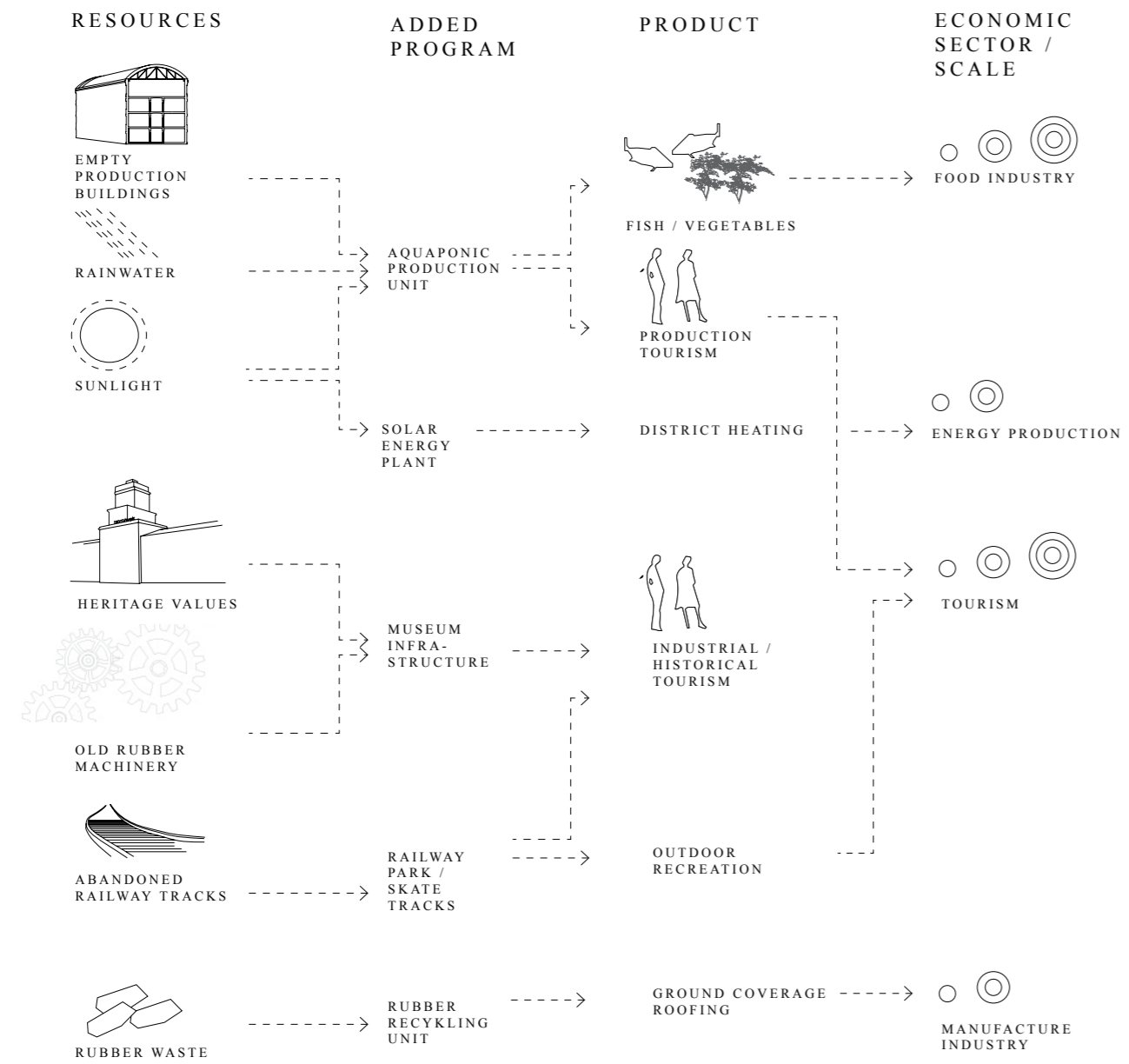
Use bioremediation techniques to create new greenery and restore the ground.

URBAN FABRIC

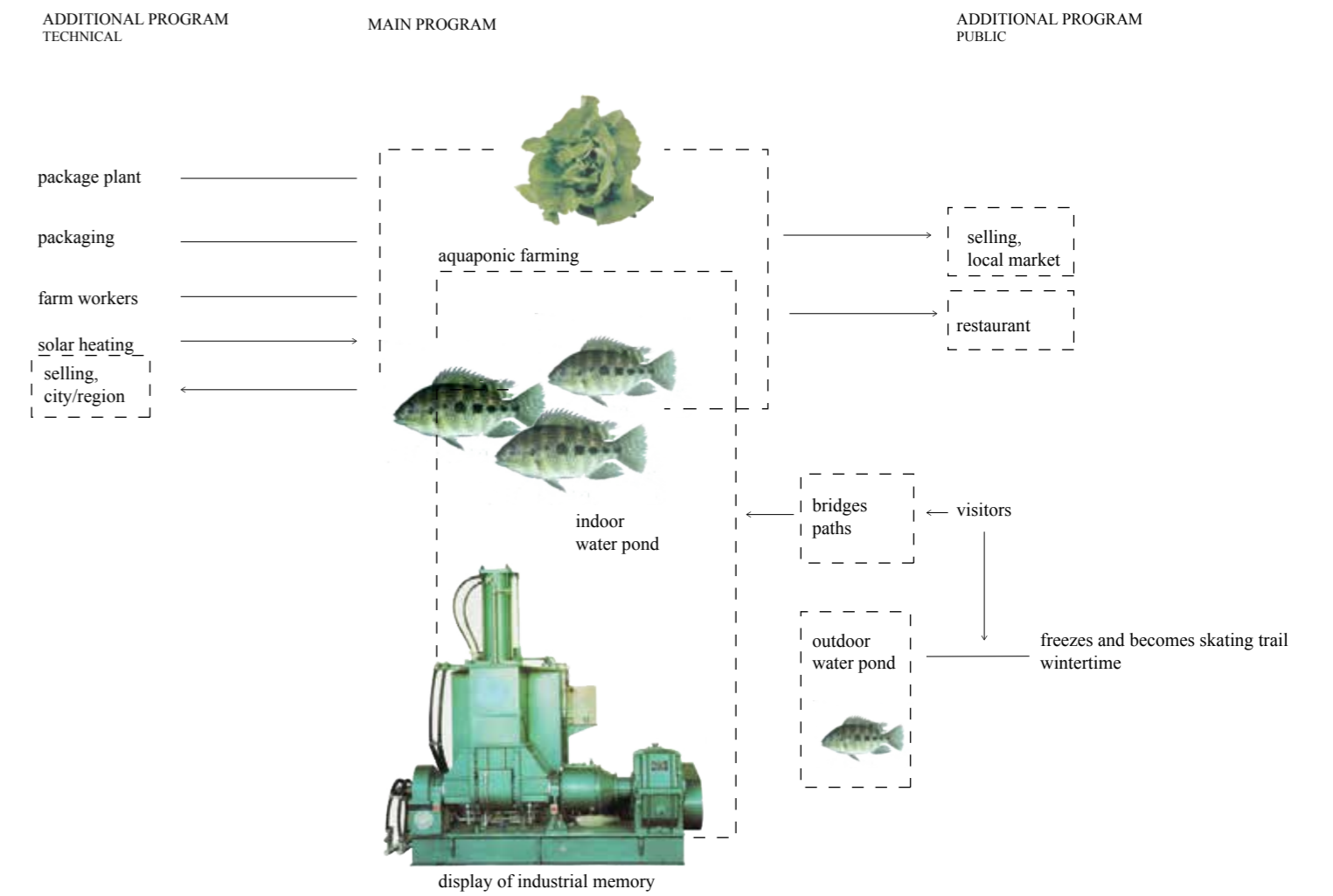
Use the street-like structure for anything normally found in a city: shops, apartments, businesses. Make sure activities are turned outwards.



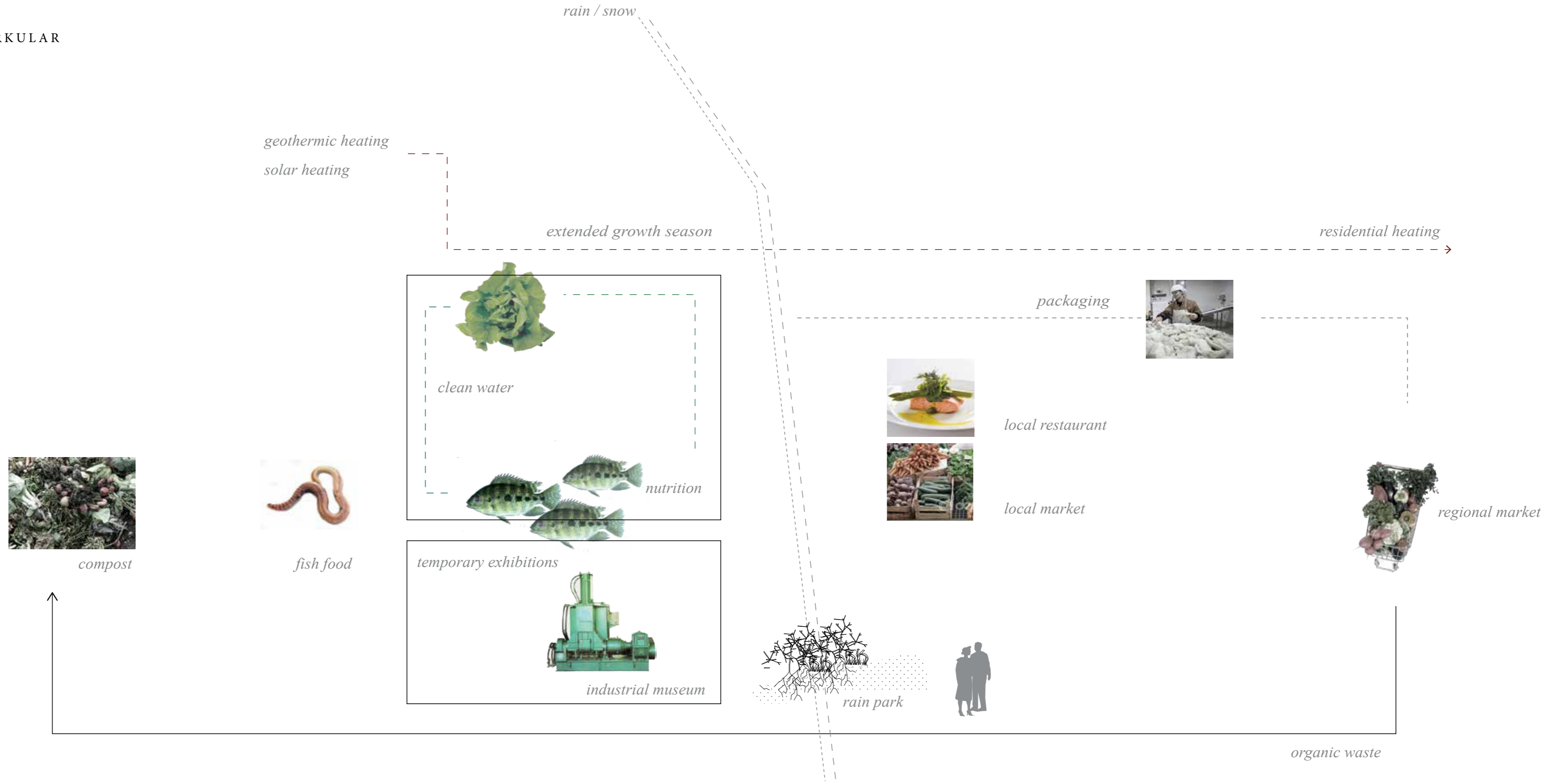
ECONOMIC POTENTIAL



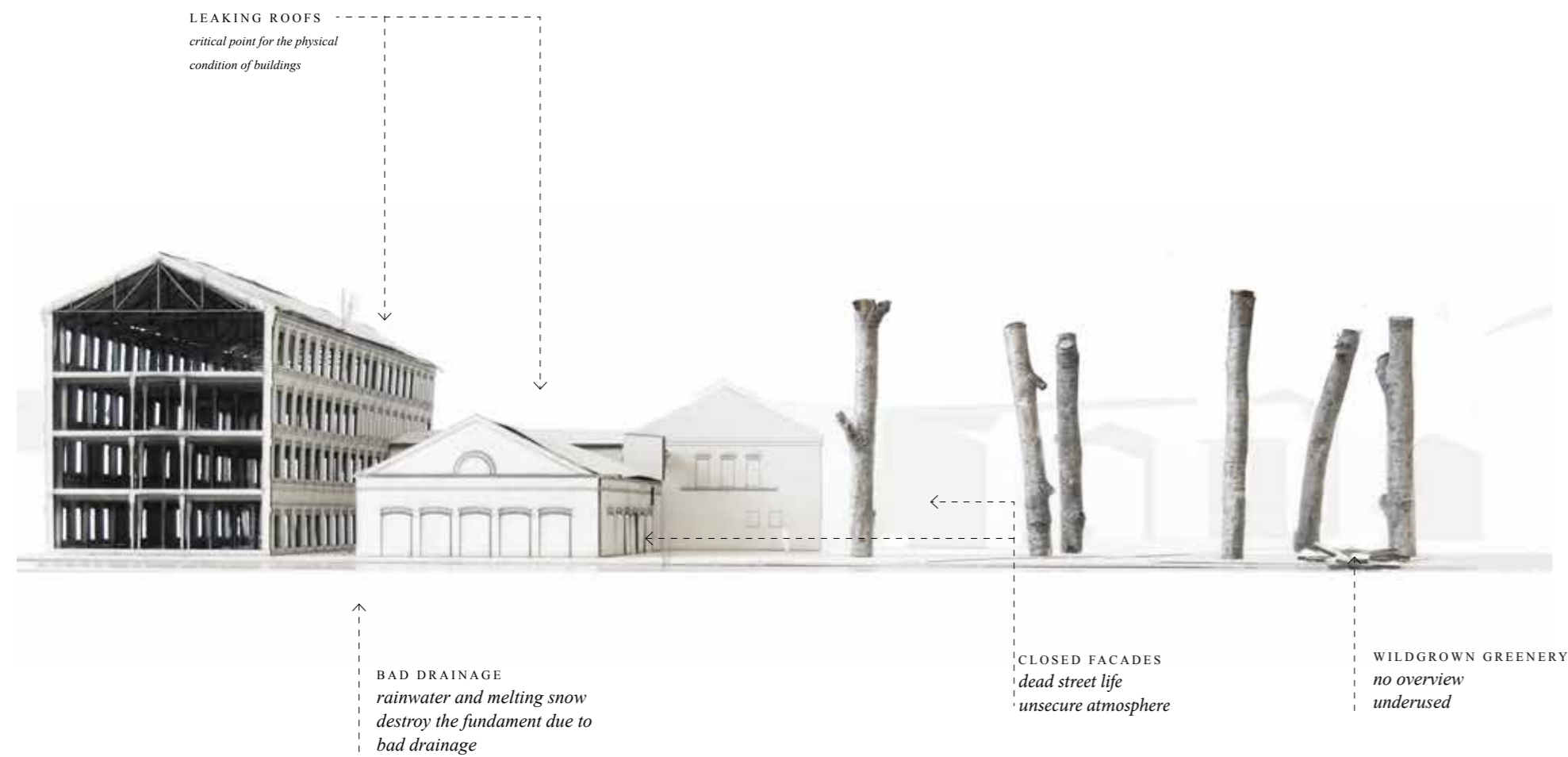
TRANSFORMATION CONCEPT: COMPONENTS



METABOLISM:
FROM LINEAR TO CIRKULAR



PART SIX
towards a
new industry
project
application



PROJECT AREA

A spot just inside the main gate to the area was selected as a case study where the project could be tested and applied. A section through this spot assembles several of the typical situations to deal with inside the area. The section is cut through one four-story, former manufacturing hall, standing as a backdrop on a smaller, individual building in front of it. The spot is the mere entrance, a southerly directed, enclosed space. Though it is a specific spot, this scale and situation is similar on many places in the area. Since this is the first thing that meets any visitor, an elaboration of its openness and its sense of common ground would strengthen the whole area's connection to the city.

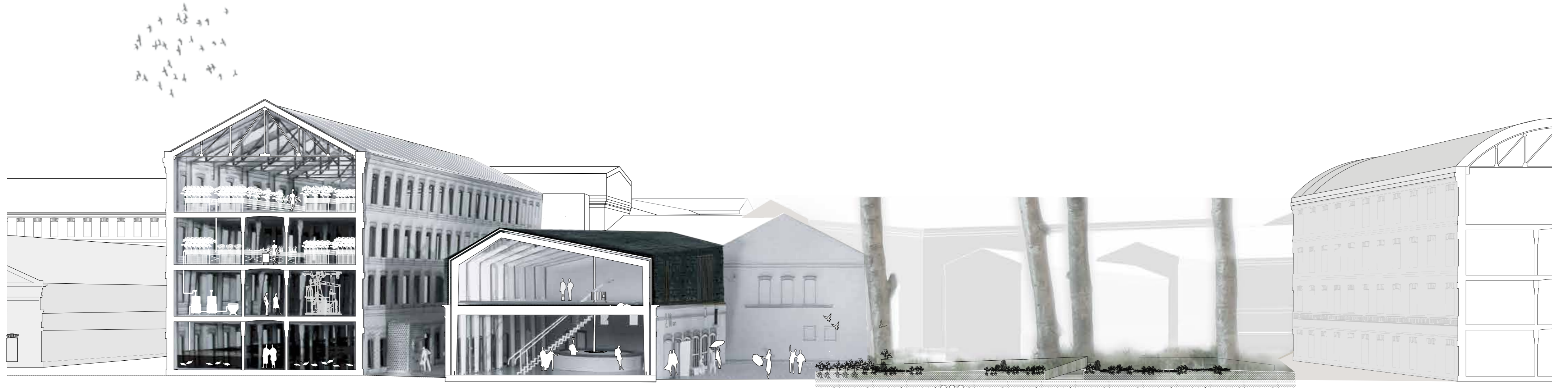
The small building, nr 218, has a strategic location for a new public usage. The large abandoned halls could serve for the proposed combination of industry and museum. Building 218 could become the entrance spot that brings a visitor in. The landscape between the large buildings has large-grown poplars, a typical tree of St Petersburg. This large open area is suggested as a rainwater park, where bioremediation plants are introduced in order to clean out pollutions from the ground. Wooden paths crossing through the park create a landscape for exploring birds and insects. At the end of the park, a small pavilion offers ice skates for rent wintertime. Here, the skate track starts that embeds the former railways in ice.

The additions have the purpose of give access to what is already there. The area is already interesting, and there is little need for the creation of new attraction points.

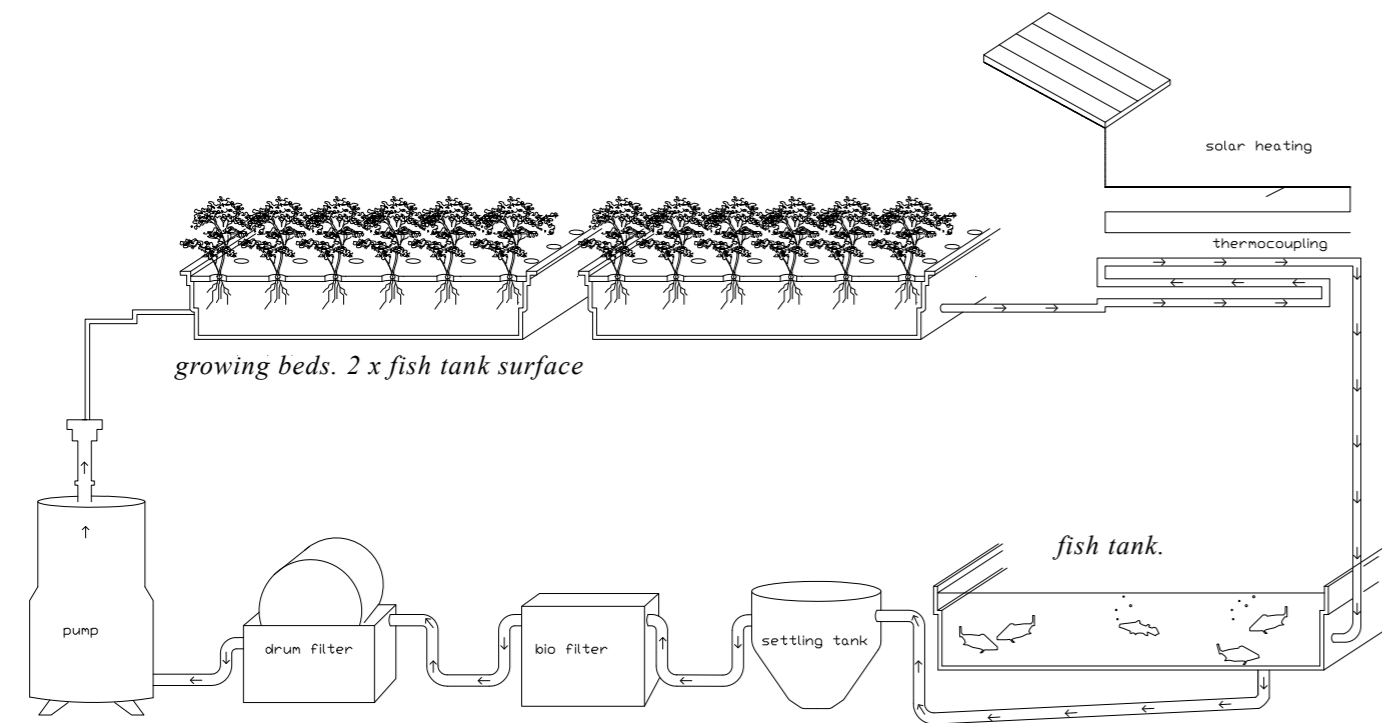
<CURRENT SITUATION

*section a-a
model 1:100
cardboard, wood*

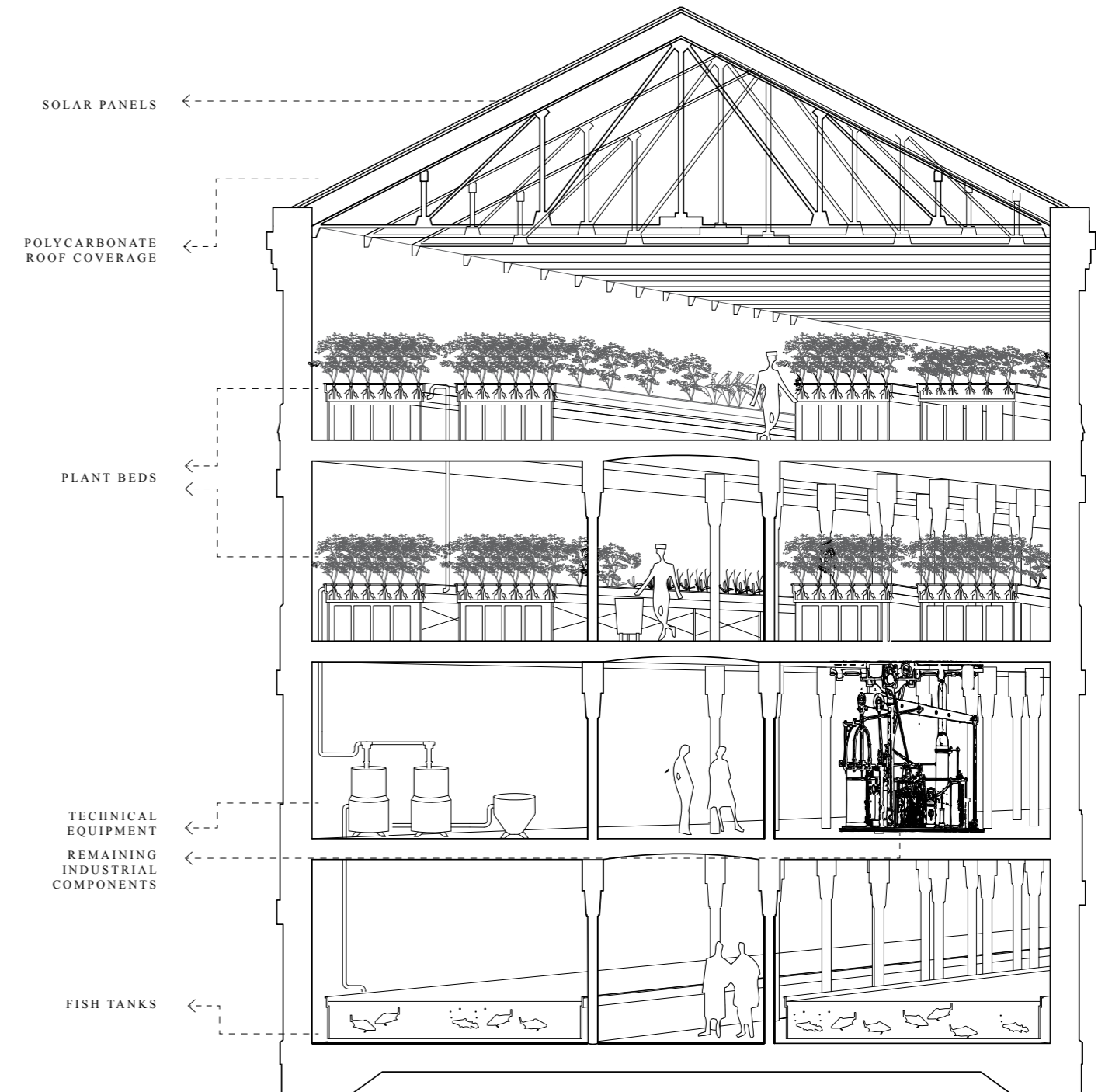
SECTION A-A



AQUAPONIC SYSTEM

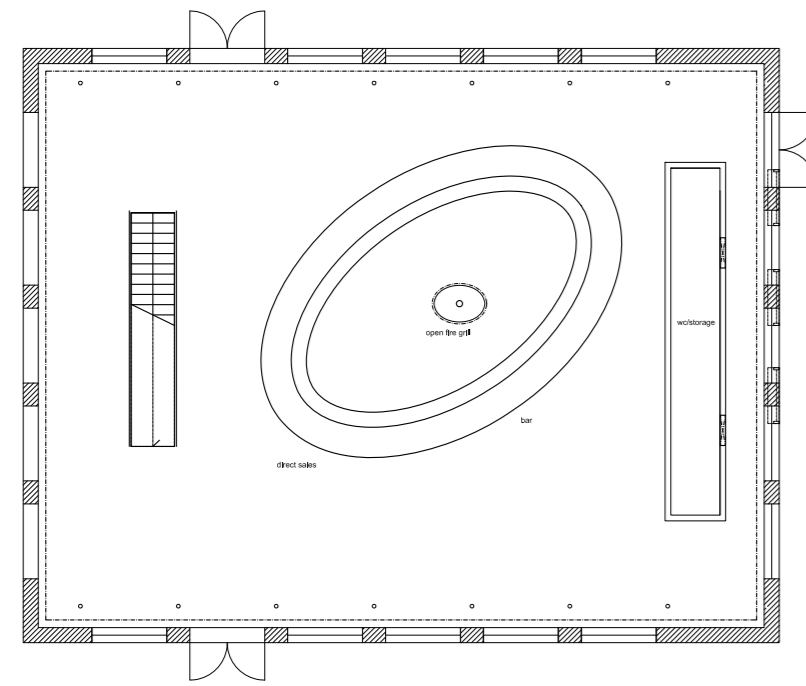


The fishes provide the vegetables with nutrition, and the plants clean the water returning to the fishes. The system can be used on a small scale in a backyard, or for commercial production on large farms. The intensity, long growth season and high outcome paired with the ecological and silent format makes it one of the most potentially urban food production systems. The production capacity for 100 sqm is around 20,000 lettuce heads and 500 kg fish yearly.

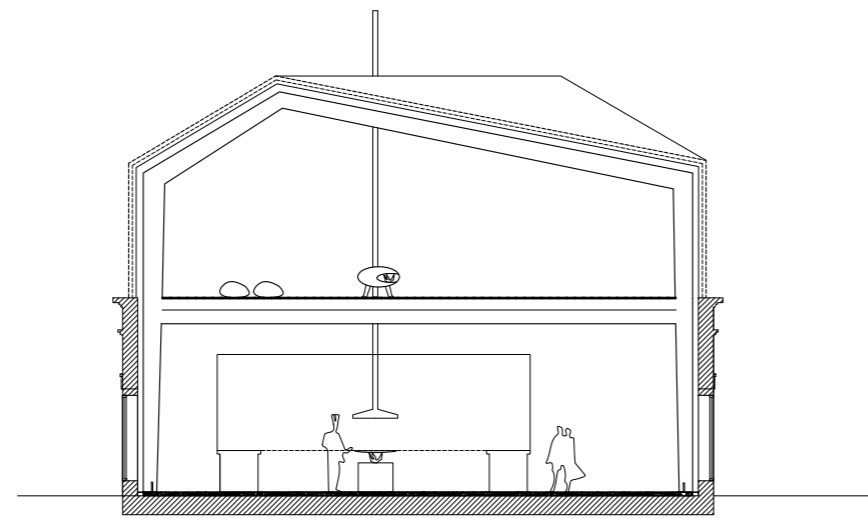


Scheme for how the aquaponic system could be developed to a large-scale production unit for a four-story building of the Red Triangle. Fish are kept on the ground floor due to the weight of the water bassins. Plants are kept on third and fourth floor. The broken roof is replaced with transparent sheet, turning the top floors into large greenhouses. Solar panels provide additional heating for the system.

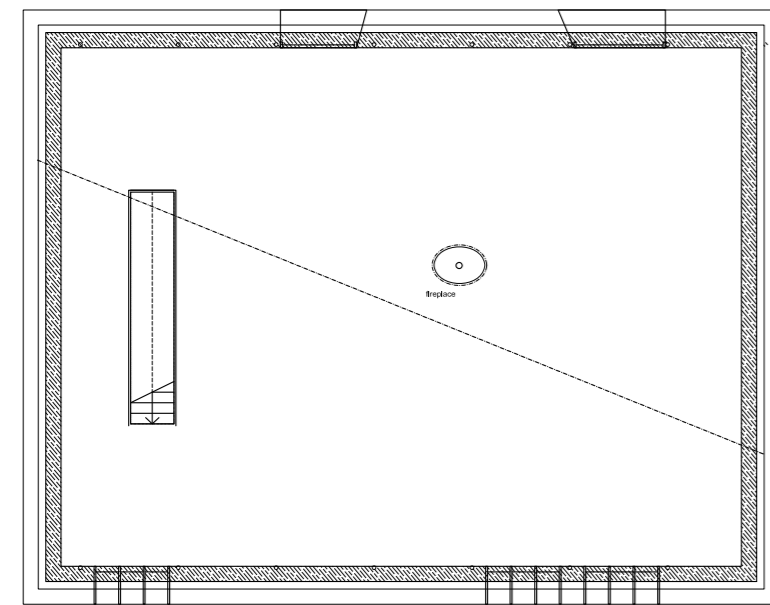
BUILDING 218: CASE STUDY



GROUND FLOOR

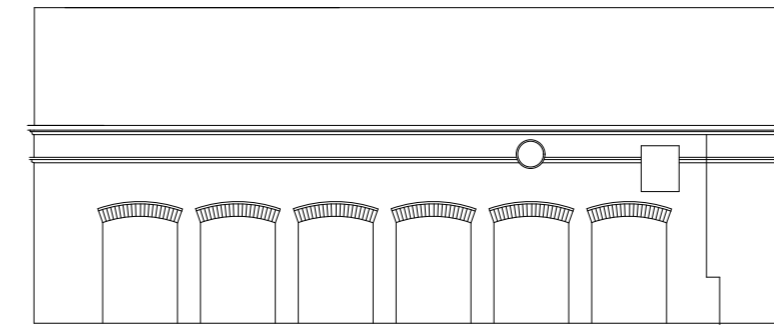


CROSS SECTION

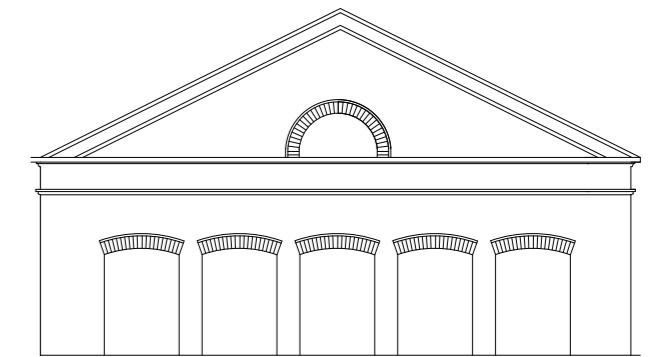


LOFT

A transformation of a former warehouse, exploring material relationships between new and old. A well insulated volume is placed on a freestanding loadbearing structure inside the existing brick structure. The climate shelter is separately hung as a skin above it.



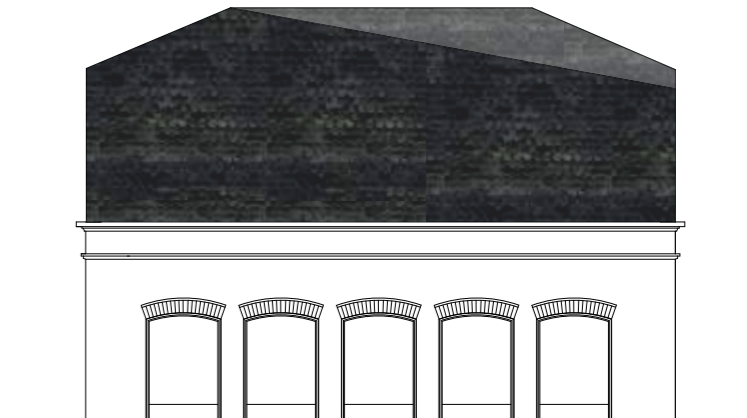
ELEVATION WEST: CURRENT



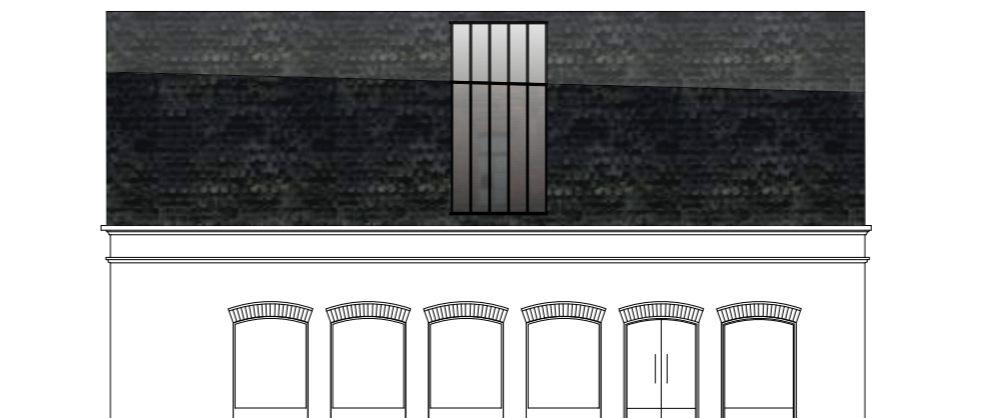
ELEVATION NORTH: CURRENT



ELEVATION WEST

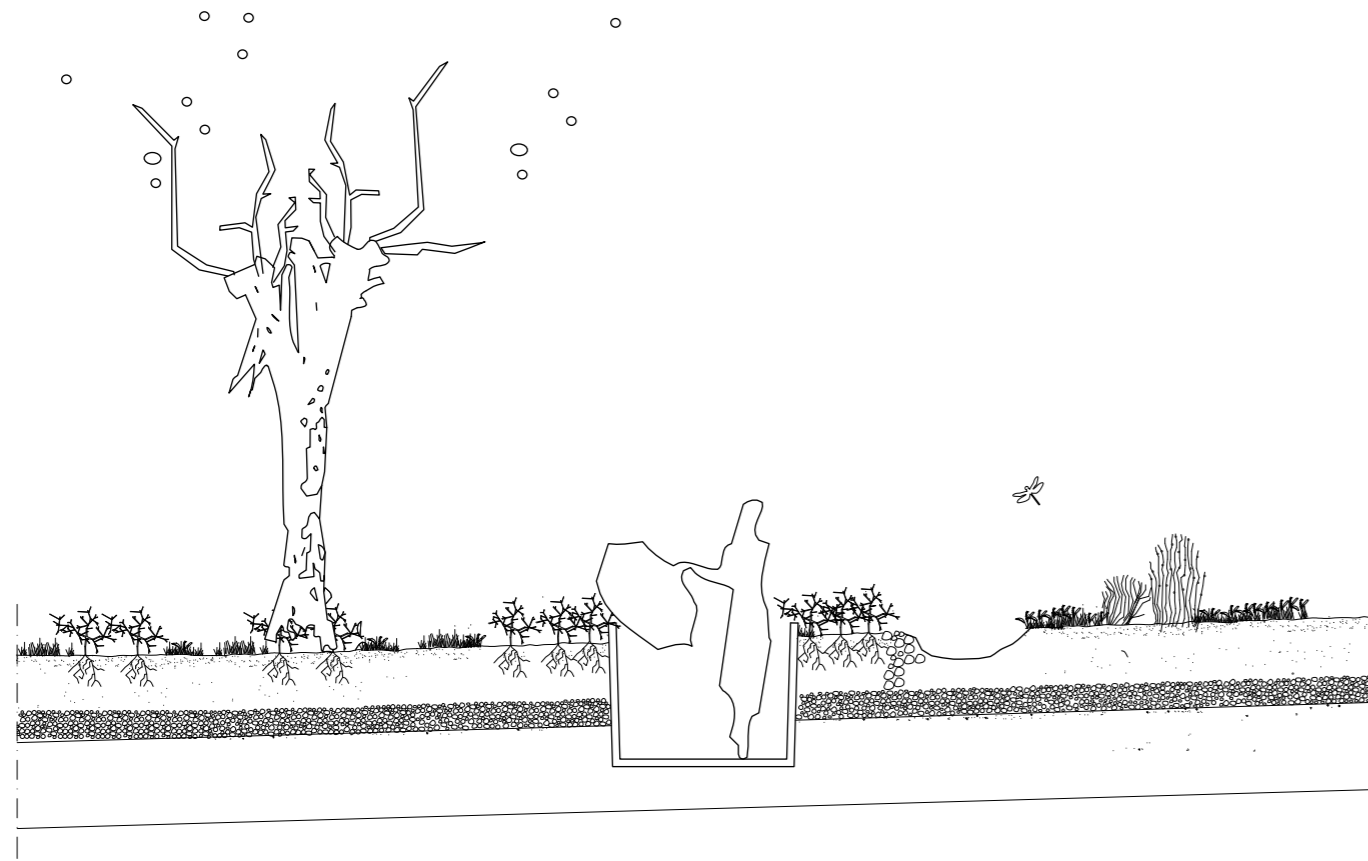


ELEVATION NORTH



ELEVATION EAST

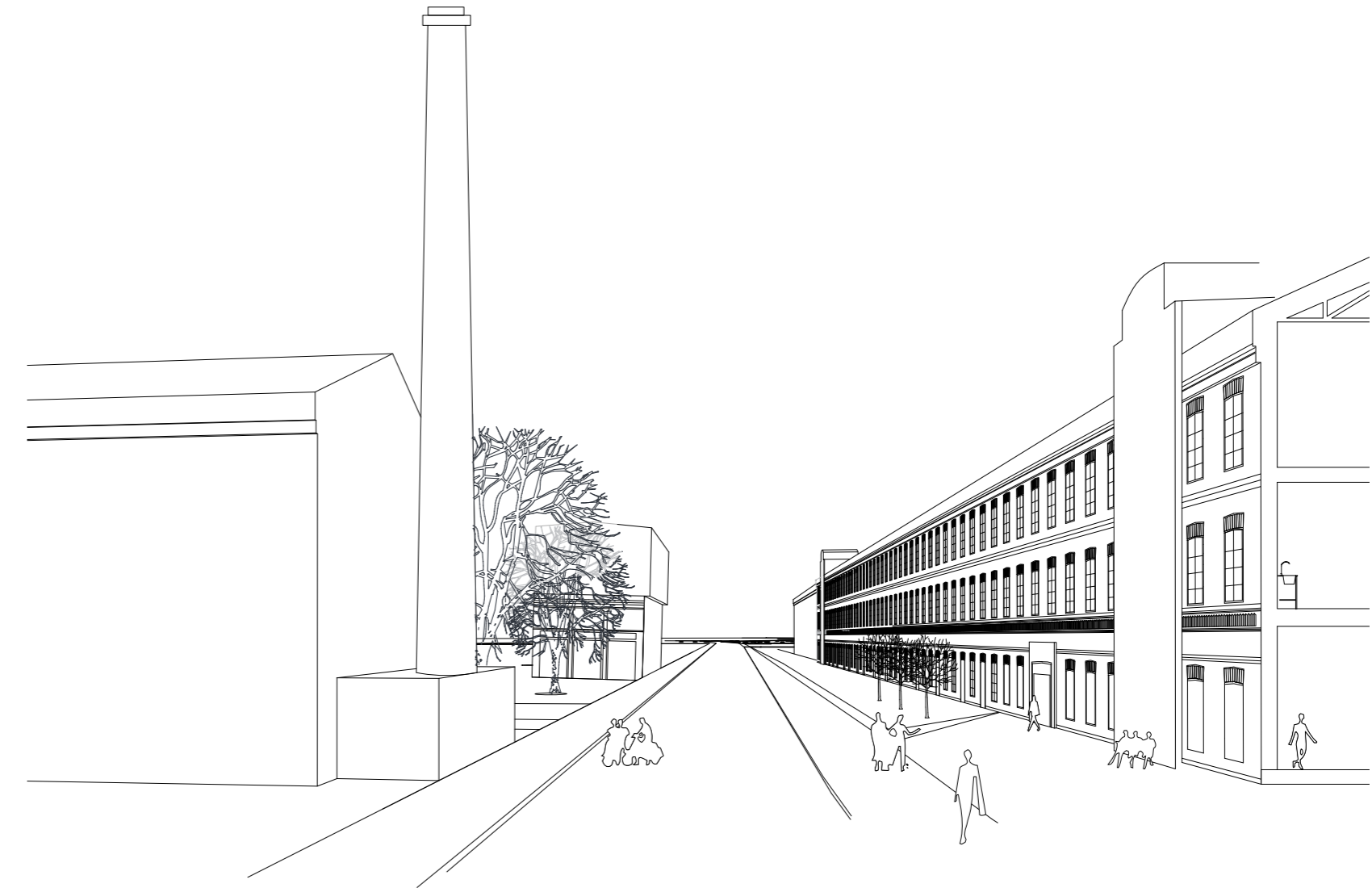
BIOREMEDIATION OF THE LANDSCAPE



RAINWATER PARK

Wetland garden with recessed walking paths. The landscape combines salix with flowering plants providing habitat for insects and birds. The paths serve as supplementary water channels during spring and autumn rains.

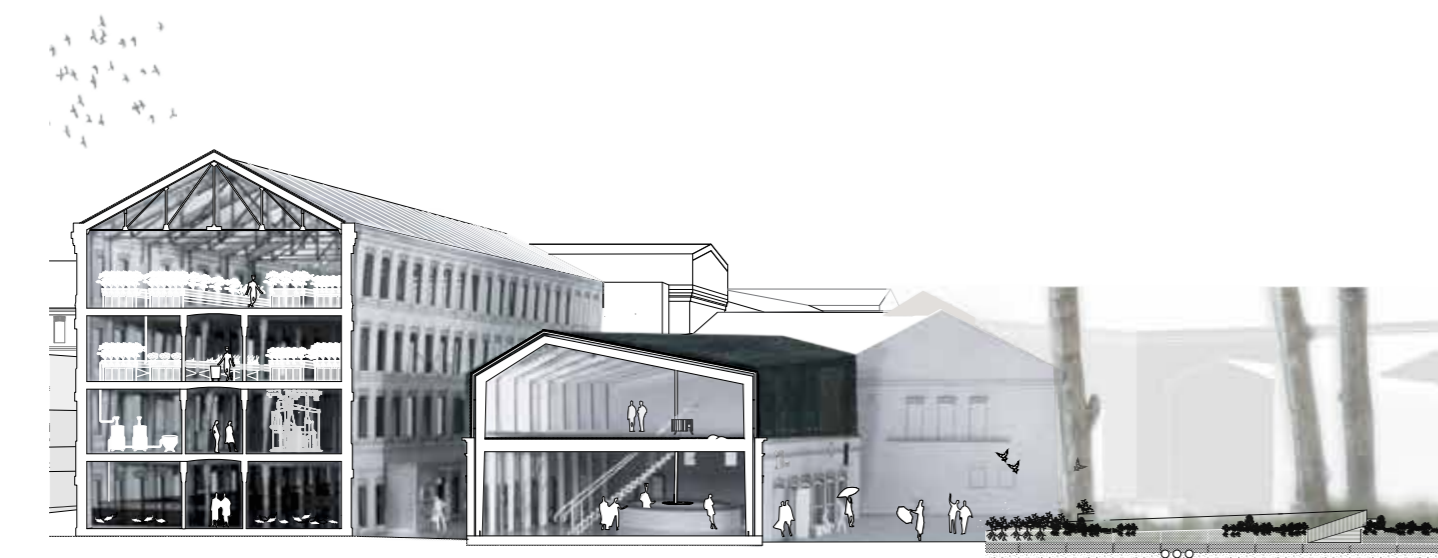
SECTION B-B



ROZENSTEIN STREET

The old factory is kept, behind it the fence is removed revealing a small park.

Former factory buildings of the Red Triangle towards the street could provide urban row houses with small entrance gardens from the street. The ground floor holds a market hall for fresh food.



IMPLEMENTATION

Current situation

The program of aquaponic farming and a café/restaurant could start in a small and more temporary scale, and gradually upgrade. This would allow a dynamic transformation process, starting from the existing situation and actors.

Intermission

The car washery runs a coffee shop as a side business, providing an openly addressed public function in the area. Renovations to improve drainage and roof coverage is taking place simultaneously. Visitors are welcome to enter the pilot project of aquaponic farming, running summertime.

Permanent transformation

The large buildings hold a hybrid system of aquaponic farming and industrial museum. The system is running all year round with additional heating from solar panels. The museum is accessed through small gateways found on several places in the area, but no formal history exhibitions are staged. The buildings are telling their own story, for everyone to interpret guided by maps and a tiny marked trail. Building 218 is the node for all ways to access the area as a visitor.

SITE REVISIT

On top of the existing structures, new layers emerge
- subtle additions, reflecting the history, the decay
and suggests new paths forward. Water is today the
mechanisms of decay - crumbling the brick walls and
nourishing the trees growing on the roofs.

When the water takes other shapes, the entropy is
slided into another direction.

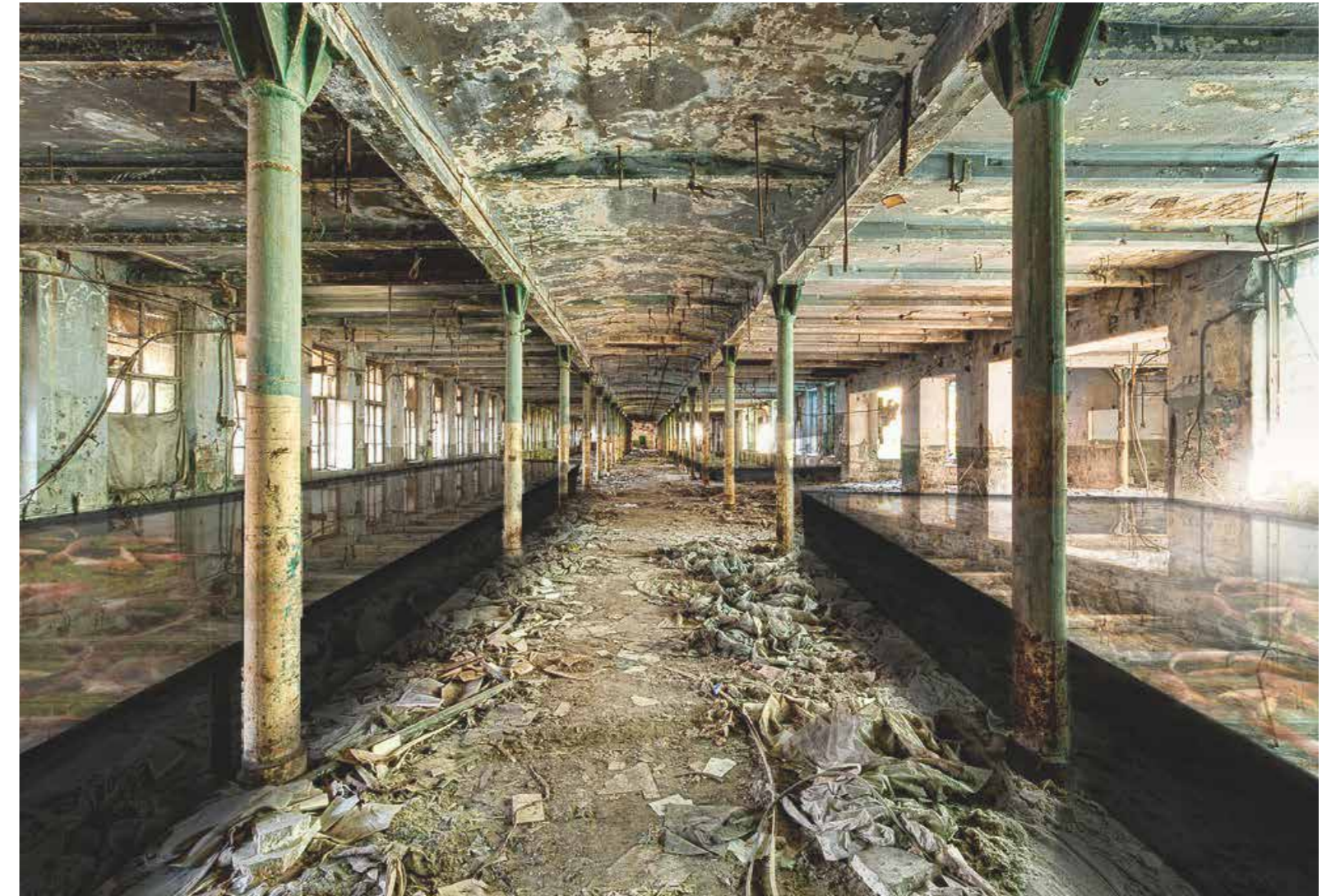
In the slumbering manufacturing halls, the silence is compact. On top of the weathering floors, a new layer is written. It is a mirror, a dark skin of water, reflecting the vanishing ceilings. The endlessness of the empty halls and the fragility of the fading windows glows back from the water surface, and all directions – up, down, front, back – are the same. Once, the construction was on the vanguard of engineering and architectural knowledge. Now, its decayed condition reflects how nothing in this world is eternal. The absence of activity makes it all clear – it is an inversion of labour, of production, of speed. Tiny pathways are drawn in the dusted floors, someone was here before. Below the water surface, subtle dark shadows can be distinguished. Fishes, seeking in the water, is the only movement in the room. They are part of the new production engine – they live in the mirror, and feed the new industry now overgrowing the fallen one.



The system is inserted as a new layer on top of the current
- an instant way to put the buildings in use. A time respite
opens for the accelerating decay process. Once inhabited by
this new engine, renovations can start parallell. Water is
today the mechanisms of decay - crumbling the brick walls and
nourishing the trees growing on the roofs.

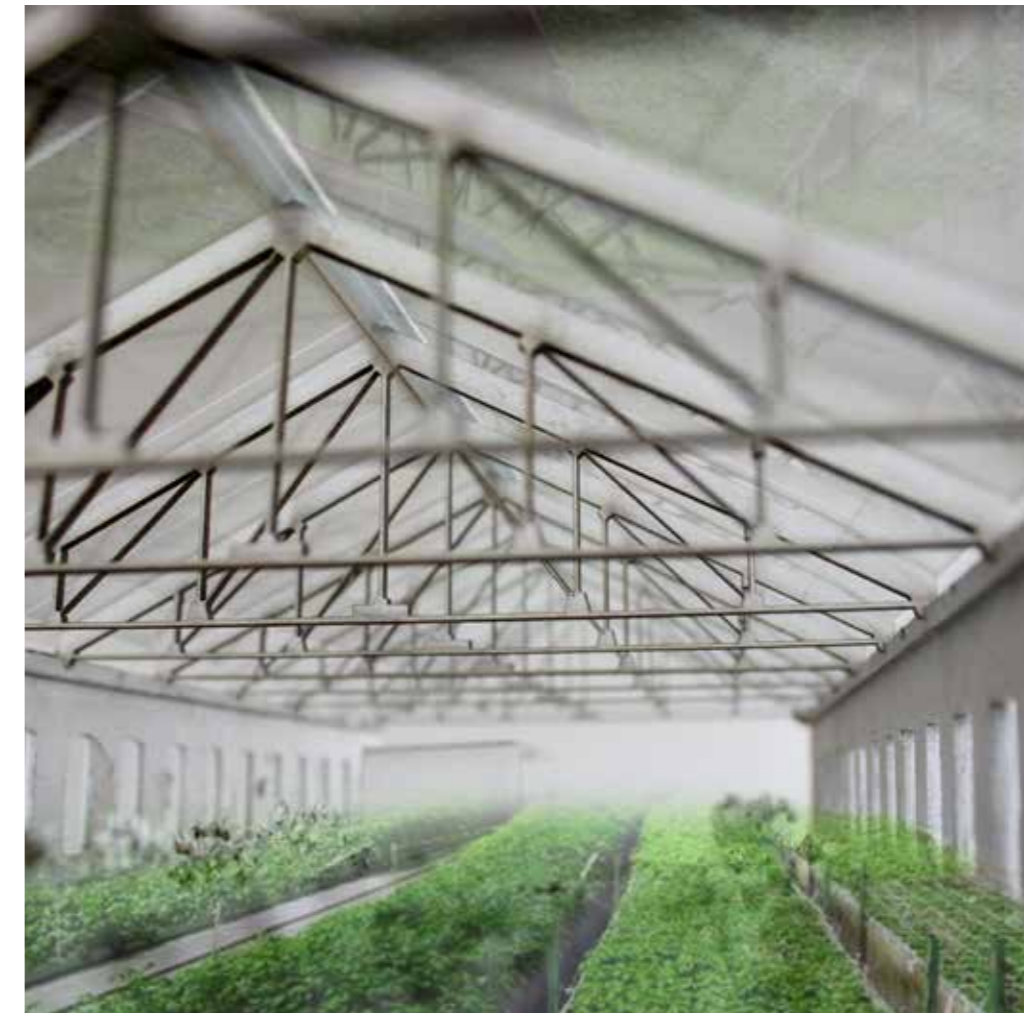
When the water takes other shapes, the entropy is slided into
another direction.

Walking through the sunlit halls, a low whirring is heard from
the pumps. Day and night it works to transfer the liquid fecals
from the fishes up to the roof floors.

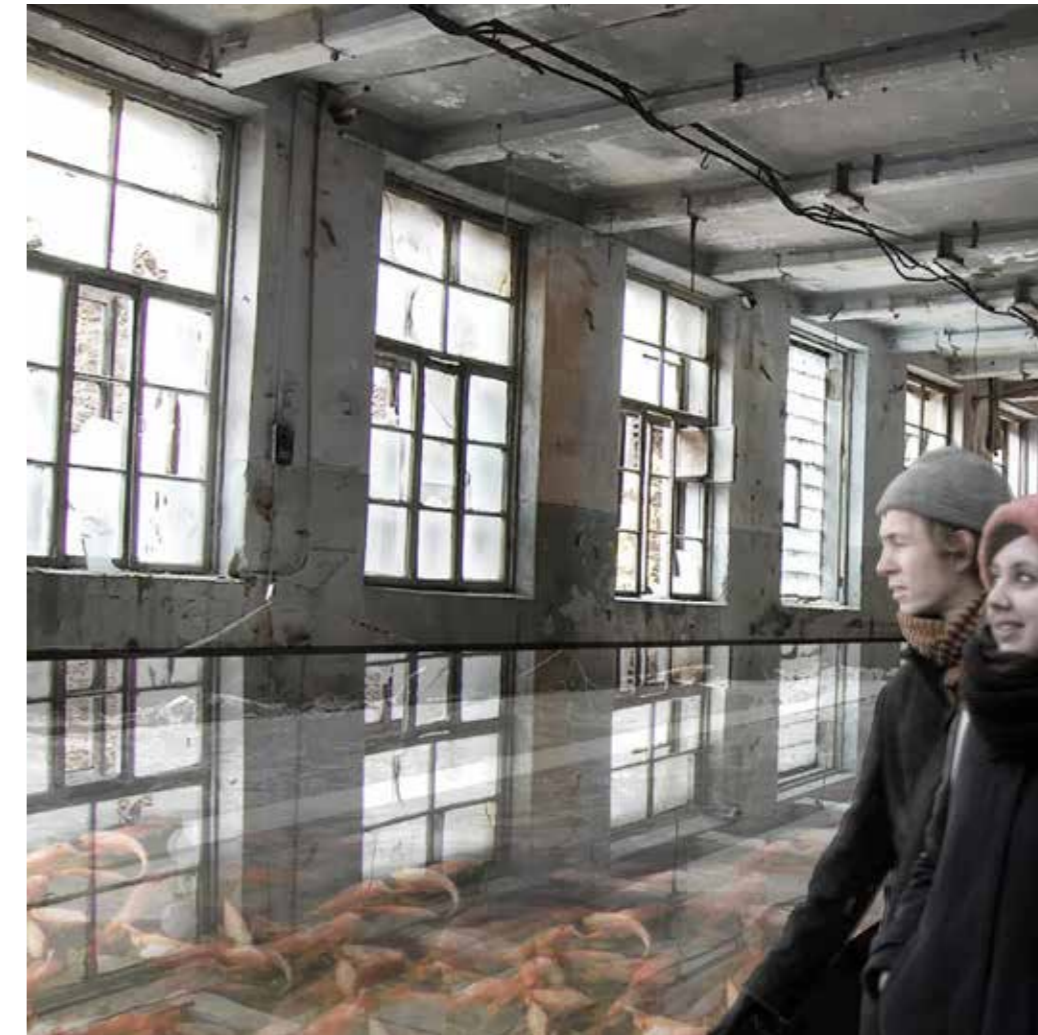


There, the scent of basil, lemongrass and coriander fills the halls for kilometres. Broccoli, pumpkins, rucola, tomatoes and spinach grow fast and high in the optimized condition of a constant nutrition supply and flowing daylight. The broken roof surface has been replaced by transparent polycarbonate sheet, a light and insulating construction.

In the mornings, the blue dressed women come to harvest the mature plants in large wagons, delivered directly to the new food market on Rosenstein Street. The office people, rushing by to the metro, are seen stopping by for the freshest food available in the city. The market hall was the first shop to open in the enclosed brick building along the street, starting to fill it with life.



When the morning harvest is finished, the entrance is open for public. It is a museum for explorers – its main artifact is layers of time, and the possibility to enter and wander through them. There are no attempts of recreating a former condition; and the interpretation must be made by each visitor alone. The water ponds can be followed as a path, and tiny lamps suggest new directions for the visitor. Here and there, sound installations appear. Suddenly, an empty room might be filled with the roaming of mechanical driving belts and the voices of thousands of invisible workers. The corroding machineries, standing in the dust, remember this sound. Sometimes, temporary art exhibitions can be found along the way.



Deeper in, there are still untouched patches, hidden from the movement of time. The white lamps are the only signal to the visitor that they are still welcome. The last stairs are broken, and to reach the roofs it is necessary to climb.



The winter is a complicated season in Saint Petersburg. The darkness, the climbing over ice covered streets, the falling icicles and the parks lost under snow makes the city much narrower to live in. One place of comfort is building 218, the tiny warehouse just inside the factory gates. The broken roof was changed and transformed to create a warm and sheltered top floor, laying on top of the raw brick walls as an independent structure. The heaviness and solidity of the rubber covering the roof is similar to that of the brick stones; their materiality is similar.



In difference with synthetic plasters, rubber cannot be reshaped whilst once formed into a certain shape. It can be recycled by grinding it to small grains, and mixing it with new polymers to sheets of recycled rubber. This way the toxic contains are capsuled. The sheets can be heat-shaped or cutted into various shapes.

The new roof, of recycled rubber shingles are made of a small amount of the mountain of rubber waste that floods Europe nowadays as a consequence of the last centuries production.



Inside, people stop by for a coffee downstairs, keeping their coats on. Fish and vegetables are grilled on an open fire, filling the air with a sent of lemon, burnt wood and parsley. Upstairs, the beams twist in a peculiar way over the small fireplace. The interior has a light wooden atmosphere, and and furs cover the soft stools.



From the windows, the start of the new skate path can be seen, which covers the former railway tracks through the area with ice. Through the milky white surface, the railings are subtly visible. The whiteness of the dust concrete plant blends with the frosted air over the new skating line. In the early mornings, they are still empty, waiting for the noise of skaters, children and the small orchestra playing waltzes below the trussed beams. The short track embraces the new park and its nearest buildings – the long way stretches all the way down to Narvskaya, where it makes a sharp turn and reaches northwards again.



As the winter loosens its grip sometime in March or April, all the snow melts away, turning the whole city into a strange delta of flooded streets. The open landscape inside the factory gates is however able to absorb surprisingly much of this water. The hard, polluted factory ground is penetrated with a new layer of vegetation and water, which transfers precipitation out to the Obovodny Channel. The plants; willow, sunflowers, pennycress and ragweed absorb liquid pollutions as they pass by. Little by little, the earth is cleaned from arsenic, cadmium and mercury. Birds and insects started to find their way to the new greenery and from the paths stretching through from arsenic, cadmium and mercury. this rainwater landscape, the subtle sound of their wings can be heard by any trespasser.



conclusion
discussion
& references

DISCUSSION

Process and result

This work allowed me an opportunity to make deep research in the mechanisms behind an urban situation, to improve my understandings of how historical and economical development affect our built environment. This of course reduced the time for improving drawings and illustrations, but my main ambition was to raise questions rather than answer them. The attempts to answer my own questions, as done in models and drawings, are not intended to present final solutions, but rather a way of getting deeper into the questions by enter them as a design task. To use writings as a tool for sketching was an important part: many of the texts presented in the last fictional re-visit took shape very early in the process and formed the outlines of the project.

Sustainability

Ecological

First of all, it deals with the question of take advantage of existing structures and buildings, in order to save resources. Secondly, it suggests a program that cleans ground that was polluted by former production, and upcycle it to a landscape in balance. Cities depend on operating ecosystems: green plants as air filters, pollination for food production, forests for water cleaning, etc. To boost the functions of the urban ecosystems is a necessary strategy to create a more productive and clean urban living environment.

Economical

To establish new forms of resilient food production systems would support a better national food security, and create new job opportunities.

Fish farming as a complement to sea fishing is already one of the priorities of the governmental goals. Traditional fish

farming is though very polluting, and has a devastating effect also on marine ecosystems. Aquaponic fish farming offers an opportunity to invent new technological systems with a very low environmental impact.

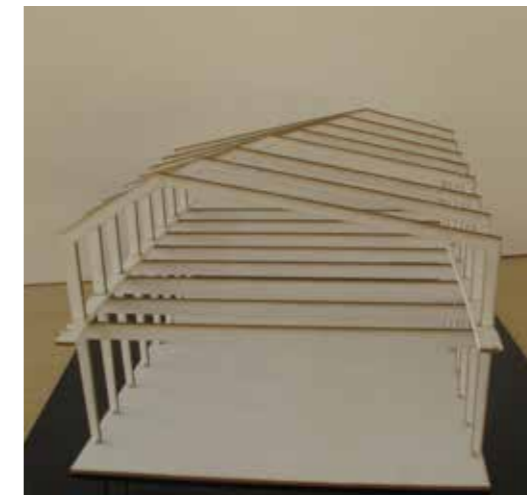
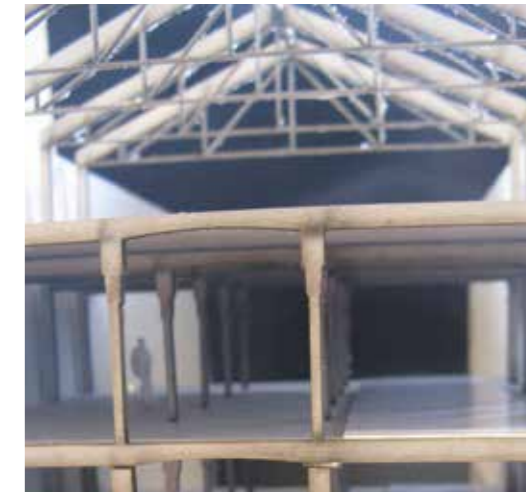
In this case, it could be combined with facilities for visitors, creating a hybrid of production and museum. A large part of the revenues to St Petersburgs urban economy comes from tourism. Today, it is the aristocratic heritage that is highlighted - palaces, cathedrals and art collections.

The unique industrial environment has a great potential to broaden the target audience and attract new types of visitors. Highlighting also the industries as a unique part of the city's history can strengthen the identity and contribute to increased urban incomes.

Social

The new program is an attempt to provide access to common memories, and to create new public space. A critical point however, is the issue of potential actors to implement the proposed measures which has been left out. This was a conscious decision due to the difficulty to identify relevant actors locally. I could see two main scenarios for a realization: one is that it is driven by governmental fundings on the development of new aquaculture systems, which is today already given large funding. Another one is that it is carried out as a cooperative between a number of small investors.

APPENDIX: MODEL PHOTOS



ACKNOWLEDGEMENTS

Elizaveta Parkkonen
for maps and information

Vladimir Frolov
*who introduced me to the architecture world of St
Petersburg from the beginning*

Alisa Gill
*for generous hosting and help with photos for
collage*

Kostya Budarin
who accompanied me on site visits

Michail Grigorev
who allowed me to use his photos

Jesper Brygger
*with whom I had important conversations on ruins,
industries and poetry*

Sofia Wendel
for support at the right time

Sergei Kulikov
for references and proofreading

Спасибо! Thank you! Tack!

REFERENCES

- Alexander, M. (2011) Surface and space. *Project Baltia magazine* vol 13, pp 18-22
- Buckler, J (2007) *“Mapping St Petersburg”* Princeton : Princeton University Press
- Hejduk, J.(1986) *Victims*. London : Architectural Association
- Hejduk, J.(1989) *Vladivostik*. Rizzoli.
- Hellberg-Hirn, E. (2003) *Imperial Imprints – a post-Soviet St Petersburg*
- Jacobs, J. (1961) *Den amerikanska storstadens liv och förfall*. Daidalos
- Jokilehto, J. (2002) *A history of architectural conservation*. Oxford : Butterworth-Heinemann
- Jörnmark, J. von Hausswolff, A. (2011) *Avgrunden*. Göteborg: Tangent
- Kuryachiy, I (2011) *Thinning. Research Report*. Moscow: Strelka Institute
- Nefedova, T. (2011) *The Impact of Urban Population on the Rural Development: Agroholdings, Dachas and their Geographical Preconditions*. Moscow: Institute of Geography RAS
- Nesbit, L (2003) *Brodsky & Utkin. The complete works*. New York : Princeton Architectural Press
- Noever, P (2010) *Urban Future Manifestos*. Ostfildern: Hathe Cantz Verlag
- Osminkin, R. (2012) St Petersburg – architecture of creativity. *Project Baltia magazine*, vol 16, pp 54-57
- Pare, R. (2007) *The lost vanguard: Russian modernist architecture 1922-1932*. New York: Monacelli Pr.
- Stieglitz, M. (2003) *“Promyshlennaya architectura Peterburga- ‘industrialnoj archeologii’ (Industrial architecture of St Petersburg. ‘industrial archeology’)*
- Urban Urban Design: (2012) *The Spontaneous City*. Amsterdam: BIS Publishers

PHOTO CREDITS

pp 40, 41, 45, 63, 133, 139:
Michail Grigorev

pp 38, 39:
Alisa Gill

Historical photos
pp 80, 81, 90:
St Petersburg encyclopedia
www.encspb.ru

Other photos without reference:
The author