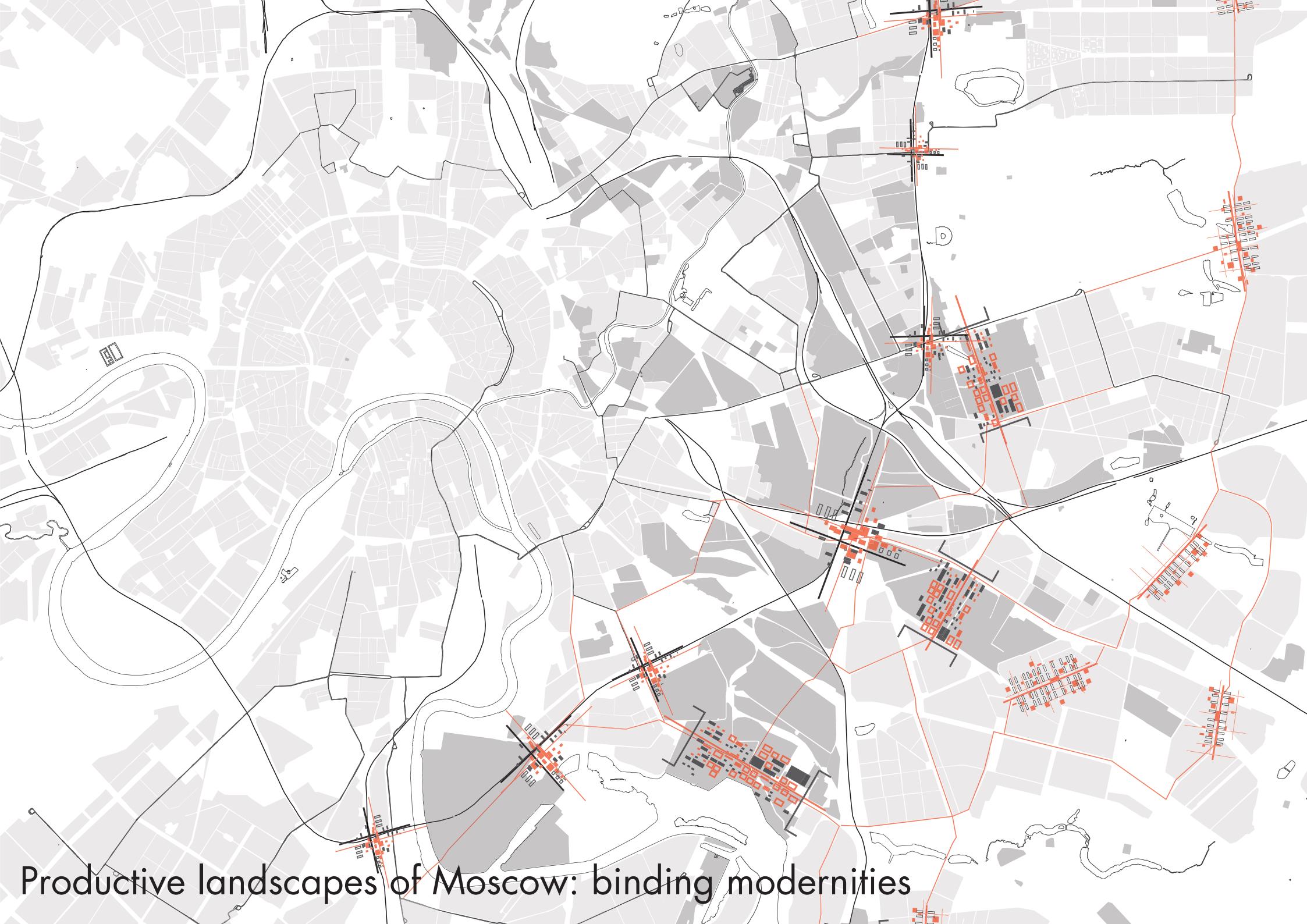

Productive landscapes of Moscow: binding modernities

COLOPHON

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To my family

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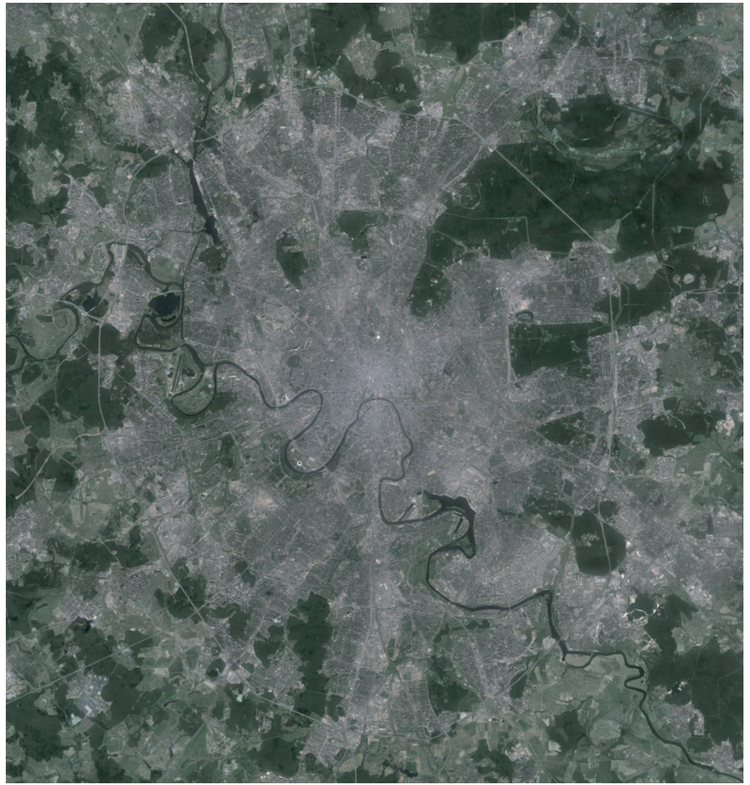


Introduction

Preface

Methodology

Gasprom headquarters

Image source: http://photo-discovery.livejournal.com/171355.html

Moscow periphery

Image source: author's own

Preface

General context

The city of Moscow is a highly pronounced dominant in Russian urban system. It is the biggest and the wealthiest city in the country and there is a strong antagonism between Moscow and another Russian cities and territories. Being now on the stage of the neo-liberal development, Moscow experiences the period of extreme hierarchy. It is the one-fifth of the Russian economy, and its wealth is based on the concentration of financial flows generated from a huge resource-export income (Kosareva, et al., 2013). Economy of the city is mainly constituted by tertiary sector and construction market.

Contemporary city of Moscow is constructed through the integration of fast networks and big production hubs: city center, outer ring road (MKAD), area around Moscow State University, and a North-West direction towards Sheremetyevo airport. Coupled with uncontrolled market forces, this type of development results into the fragmentation of the urban fabric on local scale and leads to the loss of basic relations between production and inhabitation. Moscow periphery now is monofunctional, socially deprived territory completely dependent from the city center.

The framework for strategic plan is dealing with the need to change an economic profile of the city: to bring production back to abandoned industrial territories and to provide spatial conditions for establishment of diverse types of open and safe types of production. If research institutes, techno parks, local manufacturing, light industries or creative clusters are introduced in the industrial belt, it would help to bring jobs closer to inhabitable areas, to restructure transport systems and, in the end, to create a livable city on the territory where the most of population is living.

City under transformation

The process of colonizing industrial territories is already happening. Yet, the projects of upgrading industries are very few in relation to overall building construction (the main demand on market is housing), and their character is punctual – without complex approach to production in relation to mobility and surrounding neighbourhoods. Along with market colonization, there are also city initiatives to redevelop industrial territories. But, while the goals of providing jobs, housing and qualitative public spaces are declared, the closer look shows, that these projects do not serve the goal of integration to the urban fabric on the local scale, and, if realized, will possibly reinforce local fragmentation and will not contribute to the problem of uneven development towards the center (see chapter "Dynamic context").

Aim of the project

The aim of the thesis is to show how to reconstruct live and work relations in the city of Moscow, and, what is more important, to demonstrate how to deal with existing complex urban landscape without causing new problems and not destroying previous modernities, but keeping alive the bonds that tie the present with the past. It is done by the study and the evaluation of the logic of contemporary and historical transformations of Moscow. The city was constructed through history according to certain logic of integration (Harvey, 2003) (through technologies and infrastructures), which often was not complex enough: causing fragmentation on another level, which was out of the planners' concern. It is important to propose a different rationality of acting in the urban space where integration is done not only horizontally, but across all the levels of the scale.

Bringing lacking functions and infrastructure, where they are needed, is not enough. In order to create places meaningful on local and global scale, to spatially and socially integrate locally fragmented fabric, to activate introduced functions, to reduce extremely hierarchical structure of the city, the more elaborate and attentive action is needed. The wider goal of the thesis is to create an operative metropolitan region, where all the scales are active and integrated. If respect is given only to the meaning of the city on the global scale (airport areas, enclaves of business districts, fast train connections with another cities) or only to local problems ("beautification" of neighbourhoods, punctual interventions on industrial zones, minor improvements in infrastructure), the whole system is in danger to fail.

Even that long-term objective is to create metropolitan region active on all the levels, the space of action is limited by eastern part of industrial belt. It is now one of the most deprived parts of the city (fragmented urban fabric, abandoned industries, low quality housing, industrial pollution, lack of jobs and insufficient infrastructure). At the same time, the industrial belt is now in the focus of high attention of the city government and real estate companies. As there is high demand for housing, and all the other areas in the city are already built up, industrial belt in the future will be subjected to many transformations. How to make this territory work as a heart of a system, instead of increasing an urban divide is one of the primary concerns of the project.

Research question

How to reconstruct contemporary city and to make it operative across all the scales, without destroying previous modernities?

Thesis structure

The structure of the thesis includes the problem field, historical deconstruction, evaluation of dynamic context, the vision, three case studies, the strategy and the reflection. The problem field covers three layers of space: production, mobility and open space. The routes of problems are explained in historical analysis. Its goal is to rediscover the palimpsest of Moscow through the lens of changing modes of transportation in relation to production and inhabitation. In the chapter "Dynamic context" current trends are evaluated. The vision demonstrates on a city scale how to regenerate industrial territories without reinforcing discontinuity of urban tissue. The vision then is tested in three case studies and elaborated into the strategy for industrial territories, mobility and open spaces. In the reflection part it is discussed whether developed methods can contribute to a broader theme of transformation of industrial territories in contemporary reality of the cities of post-socialist block.

Methodology

City as a resource

During the course of the last century Moscow was objected to many large-scale transformations. The processes which transformed the urban form of the city had their routes in complex dynamics of political and technological space. As Moscow was a capital of socialist totalitarian state for seventy years, political will was most of the time directed to accumulating all the power in the capital city at the expense of the rest (Heller & Nekrich, 1986). Regarding the technological space, as all the cities must carry on the same functions regardless the planning system, its evolution has been following almost the same route as the western capitalist cities, but with a substantial time-lag behind them (French, 1995).

David Harvey, in his work "Paris, capital of modernity" (Harvey, 2003) discusses the meaning of radical transformations in the context of Haussmann's Paris. He argues that the idea that modernity means the radical break with the past is a myth (Harvey, 2003) and proposes instead (referring Saint-Simon and Marx) that "no social order can achieve changes that are not already latent within its existing condition" (Harvey, 2003, p. 1). This point is indeed important when remembering all the modernists of the last century who desperately believed that "modern technology and social organization could create a world without ashes" (Berman, 1982, p. 304). Nevertheless, when speaking about Russian context, where the "radical break" had started in 1917 and had immense in scale devastating effects on the whole country, and, consequently, on Moscow, the notion of modernity deserves special attention.

In historical analysis, I will deconstruct the city of Moscow into spatial-temporal layers, and explore the processes hidden behind each step of city evolution, behind each modernity.

First of all, it is necessary to study modernities of the past not only as the acts of "creative destruction". There were always hopes, dreams and fears that were motivating people for action (Harvey, 2003), and it is crucial to study planning failures of the past from this perspective. Planning actions always served particular rationalities to achieve particular goals and never meant to cause fragmentation, or social segregation or the like. It was external effects of planning actions that were causing problems, rather than the planning actions itself. As Stephen Read writes "at different times different integrations have been effected, establishing in each case a difference between what was included and what was excluded in network or empire, as well as boundaries between these domains. The domain of the inside and included in the network defined edges beyond which the domain of the excluded started" (Read, 2009, p. 092:3). Exploring hidden order behind seemingly chaotic actions is one of the ways to learn how the city was constructed through history. Furthermore, it helps to propose a more elaborated rationality of action on the territory. Every intervention will always have its externalities, and it will always result in fragmentation, as it is never possible to cover all the negative issues or to satisfy all the actors. But it is possible to reduce the externalities to the minimum if the deeper understanding of the hopes and fails of the past is developed.

Evolution of technological space

Evolution of Moscow is studied through the lens of technological progress, which includes of evolution of infrastructures in relation to the changing modes and types of production and patterns of inhabitation.

The idea of "technology" is described by Hard and Misa as "the human-made materialities designed with the needs of the urban population and urban commerce in mind" (Hard & Misa, 2008, p. 6). Newly introduced modes of transportation (whether it were the tram networks, or underground lines or highways) had always a goal of not only improving accessibility, but of re-formation of the city (Read, 2009), they were a response to the crisis of previous modernity. And, as it was also noticed by David Harvey (2003), the result of the improvement in infrastructure is often not the solution of the problem of congestion, but recreating it on another level of scale and with different speed (Harvey, 2003). To conclude, despite the fact that technology is frequently understood as a modernising and integrating force (Hard & Misa, 2008), its effects on another levels are ambiguous.

Acting across scales

At this point the issue of scale is critical. As evolution of technology means the expansion of spaces where people and commodities can move (Harvey, 2003), the evolution of the city is also marked by radical jump to another scale. Change of modes of transportation also involves changing patterns of production and inhabitation (Smith, 1984). Jump in scale can result in series of problems, such as uneven distribution of jobs and housing, urban sprawl, socailly deprived areas and so on. This is how Neil Smith in "Uneven Development" (1984) explains it: "the geographical limits to daily labour markets express the limits to spatial integration at the urban scale: where the urban limits have become over-extended, there threatens a fragmentation and disequilibrium in the universalization of abstract labour; where they are too constrained geographically, the urban labour force is comparatively limited and the possibility arises of premature stagnation in the development of the productive forces." (Smith, 1984, p. 137). If networks of relations between production and inhabitation, in order to be effective, should not be over-extended, but at the same time not limited geographically, that means that they should be meaningful across several levels of scales.

Relations between production and inhabitation are articulated through the infrastructures, and the significance of places is formulated by the overlapping of infrastructures of different scale and speed (Read, 2009). Nested hierarchy of scales is the critical condition which makes the place operative through all the levels. And, to get a real sense of local and global scales working together in everyday life of the city users, the possibility of an easy switch between scales has to be performed (Read S., Budiarto L., 2003).

As I have discussed before, each step of the city evolution was marked by a certain rationality, whether it was integration of local quarters of artisans into global trading routes or integration of heavy industries and city center through the undeground networks. I suggest, if it is possible to imagine a next step in a city evolution, not as an another jump towards bigger scale of infrastructures, but as a step back in order to integrate, to bind all the already existing spatial-temporal layers of space together.

Technological progress does not necessarily mean a speed-up. Fast infrastructures of Moscow city (both underground network and roads) serve now as transit routes and keep periphery connected, but at the same time segregated from the rest of the city. Development of the slow modes of transportation could be a means to integrate local neghbourhoods into global city processes and to make spaces of socially deprived periphery attractive through all the scales.

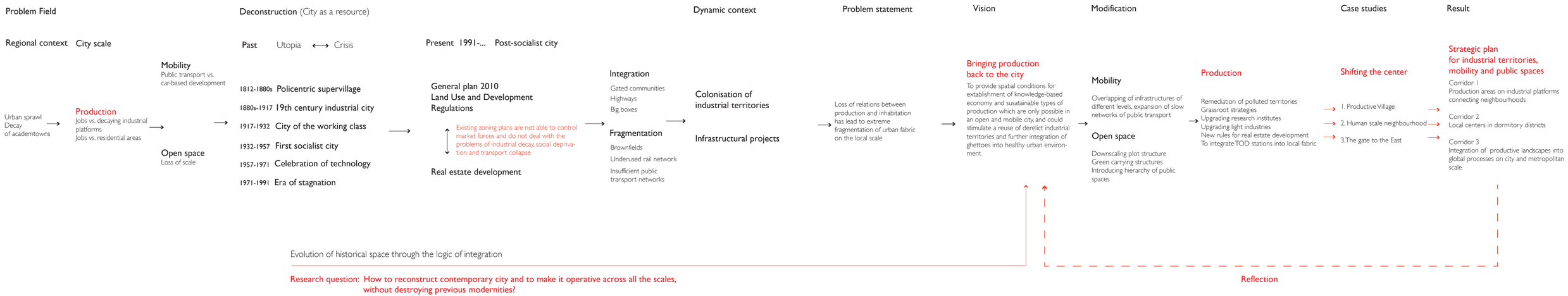
What is more, the evolution of modes of production allows to downsize manufacturing processes, and, many of them are not dangerous or polluting anymore (Whadcock, 2012). Thus it is possible to balance the uneven distribution of jobs and housing, by bringing Industries where they were before – to industrial belt. Surrounded by densest residential districts industrial zones could become new production hubs as alternatives to the city center.

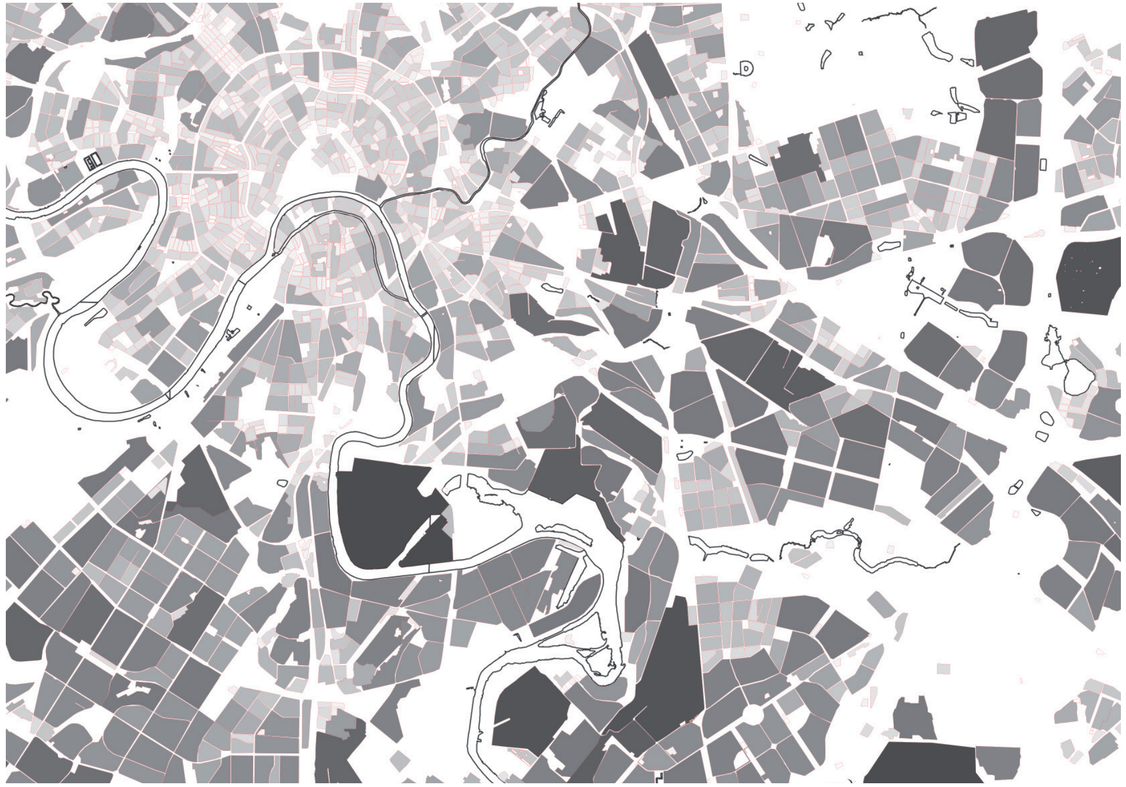
Localization and step back in scale also mean the possibility of the in situ expansion, where consumption of existing space is intensified and restructured, instead of the endless sprawl of the metropolitan area (Smith, 1984). In metropolitan area, where daily journey to work reaches up to two hours, this point is essential, and the size of industrial territories (approximately fifteen thousand hectaresoverall) makes the intensification possible.

Waste landscapes

If new modernities have always been making the modern cities old-fashioned and obsolete (Berman, 1982), it is necessary to claim, that any process of transformation should be strongly tied to the context of the existing urban fabric. One of the challenges of the thesis project is to test how to transform waste landscapes of Moscow, not ruining them. According to Alan Berger, waste landscapes include not only abandoned industrial platforms, but also landscapes of dwelling, transition, infrastructure, exchange and contamination (Berger, 2006). This is, actually, the whole periphery of the city. "In these apparently forgotten places, the memory of the past seems to predominate over the present. /…/ They are foreign to the urban system, mentally exterior in the physical interior of the city, its negative image, as much a critique, as a possible alternative." (de Solà-Morales Rubió, 1995). What is already there, even if perceived as waste, is also the history to accept and preserve, instead of neglecting it and transferring the problems to another level. Ignasi de Solà-Morales Rubio (1995) argues, that waste landscapes (or "terrain vague") can be kept and transfromed through the attention to their conituity: "we should treat residual city with a contradictory complicity that will not shatter the elements that maintain its contiuity in time and space" (de Solà-Morales Rubió, 1995). The waste landscapes could be incorporated into the city's circuits through the new infrastructures passing through them, the infrastructures that would bring flow of people, activate new functions and facilitate intensification, but that would keep existing artefacts on their place, alive and reused.

Methodology





Problem field

Regional context

City scale:
Production

Mobility

Open space

Yaroslavskoye highway: urban sprawl in North-West direction
Image sources: author's own

Regional context

Metropolitan area

Moscow is located along the Moscow River in the Central Federal District of the European part of Russia. The population of the city is officially 11.5 million people, and 15.5 million in Moscow agglomeration. Yet, the estimated non-official population is close to twenty millions. This number includes everyday commuters who live in Moscow region but work in the city, non-registered residents and illegal migrants. Starting from the 1990s the city of Moscow and Moscow Region are two independent federal subjects of the country. Urban planning strategies of the Soviet period considered the city and the Region together, but during the last twenty years the two subjects developed almost independently.

There are three civil airports, one airport as a testing ground for aviation and two military airports. The biggest airport Sheremetyvo is located to the North-West from the city and acts as one of the major attractors for the global business in Metropolitan area of Moscow.

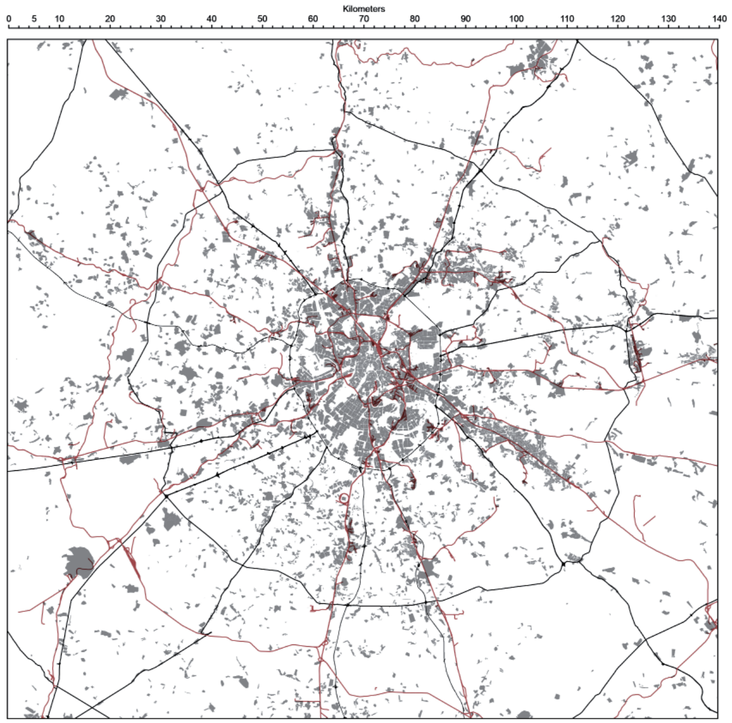
There are several academ towns surrounding Moscow. In soviet times they used to operate as science and research clusters of high technologies, but after the 1990s there was low demand for their resources. Now there is a threat that they can become Moscow dormitory satellites (Molodikova & Makharova, 2007), as the city is sprawling and there is an extreme need to build housing to accomodate migrants.

Academ towns

Source:maps.google.com

Airports

Source:maps.google.com



Moscow region. urbanised territories.

Source:GIS data

Industrial platform South Port and dormitory district Pechatniki

Image sources: author's own

Production

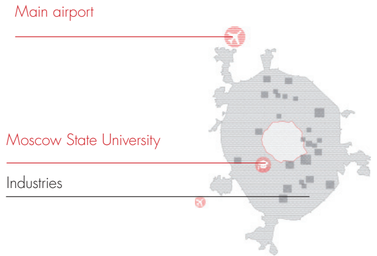
Jobs vs. decaying industrial platforms

The former industrial areas occupy now seventeen per cent of the city. Most of these areas are concentrated along the ring railroad, but mainly in the eastern part of the city.

In the nineties, with the transition to service-oriented economy, most of the industries within the city have declined, the number of people involved in production decreased from 1,2 millions in 1990 to 284 thousands in 2011 (Vendina, 2012). At the same time, the amount of jobs in the center is close to 2.4 million [1].

Location of the main industries on the East has caused a reasonable disparity between the Eastern and the Western part of the city (Vendina, 2012). As the ecology in the western part is much better, than in the east (due to the lack of the industries), neighbourhoods there are traditionally associated with a more qualitative living. What is more, while the Eastern industrial part mainly accommodates working class related to production, the biggest universities and research institutes are located in the western part of the city. The presence of the biggest airport Sheremetyevo in the North-West direction from the city is an another aspect causing the tendency of businesses to gravitate closer to the western part of the city.

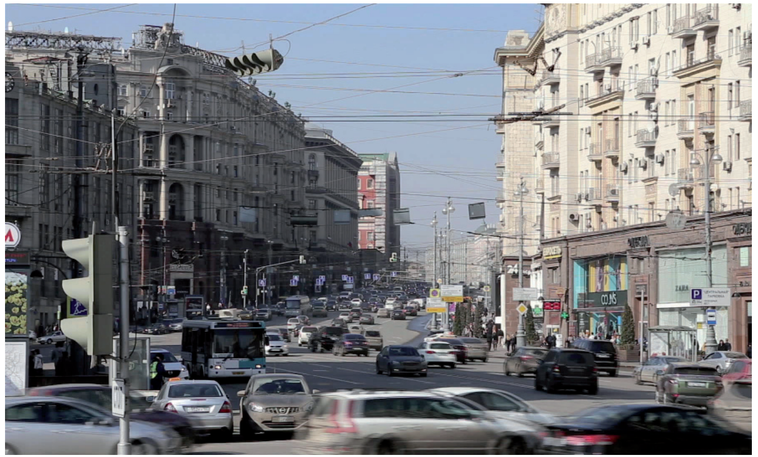
1 Strategy of the Socio-economic Development of Moscow till 2025.



East-West disparity

Areas attractive for investments (in shades of red) and decaying industrial territotires (in grey))

Sources: GIS data, Vendina, O., 2012. Social atlas of Moscow. Annex to Project Russia: Greater Moscow, 4(66), p34



Tverskaya street

Image source: http://ak7.picdn.net/shutterstock/videos/5956796/preview/stock-footage-moscow-russia-march-traffic-of-cars-in-moscow-city-center-tverskaya-street-near-the.jpg

Production

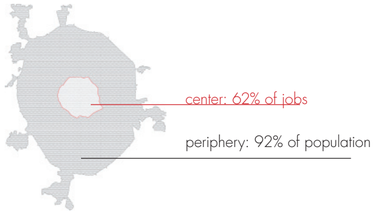
Jobs vs. residentail areas

After the shift to the market economy in the nineties, the accessibility and importance of the center resulted into radical increase of the rent prices: many residents and lower level services were forced to move out from the inner city (Wiessner, cited by Stanilov, 2007). Many former residential buildings were reoriented to office and commercial use, and during the 1990s the population of the inner city decreased by 200 thousands people (Bater, cited by Stanilov, 2007).

At the same time, while the most of the people live on periphery, around 65 per cent of jobs are located in the center (Bokova,2010).

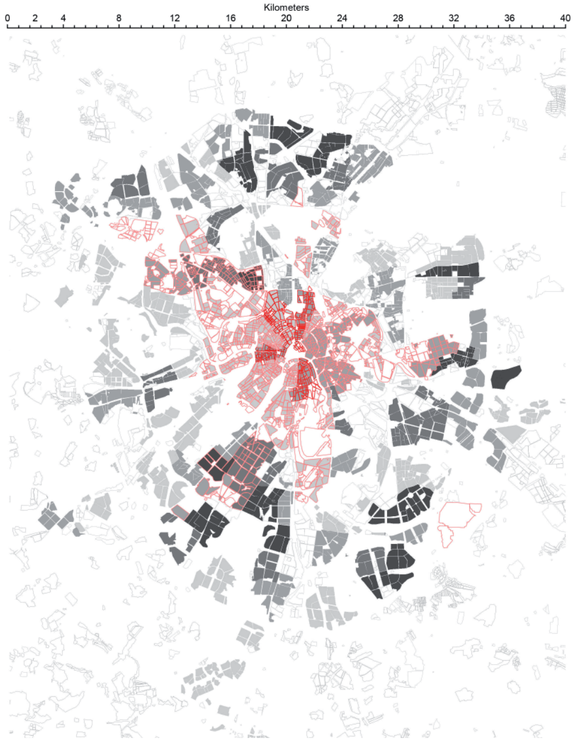
The core of the city is now the strongest dominant in the city. It accumulates most of the functions, and all the infrastructures converge in the center. At the same time, monofunctional periphery remains paralyzed and dependent from the center.

It is necessary to reconsider the relations between jobs and residential areas and to bring jobs closer to where people live.



Distribution of population and jobs

Source: Bokova, A., 2010. Moscow: Diagnosis. Project Russia, 57, pp. 77



Investment attractiveness (in red) and densest dormitory districts (in black)

Sources: Vendina, O., 2012. Social atlas of Moscow. Annex to Project Russia: Greater Moscow, 4(66), p.34,

Population census 2010

Moscow traffic congestion

Image sources: http://upload.wikimedia.org/wikipedia/commons/a/a4/Moscow_traffic_congestion.JPG

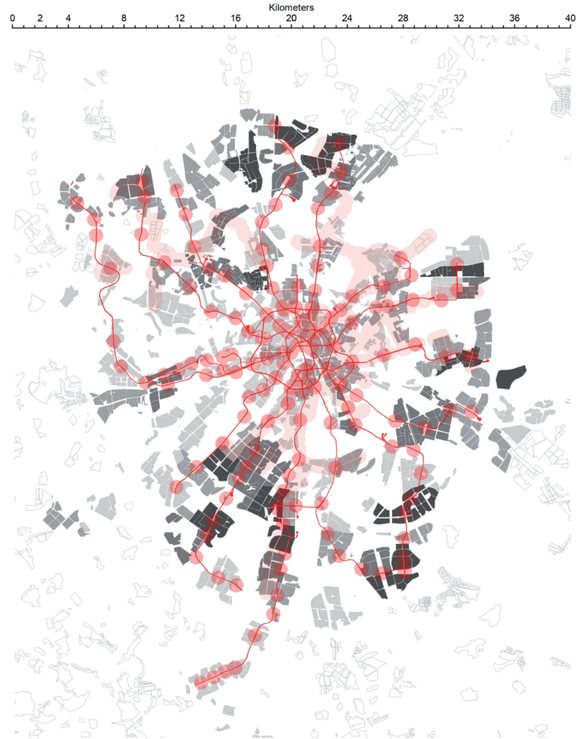
Mobility:

Public transport vs.

car-based development

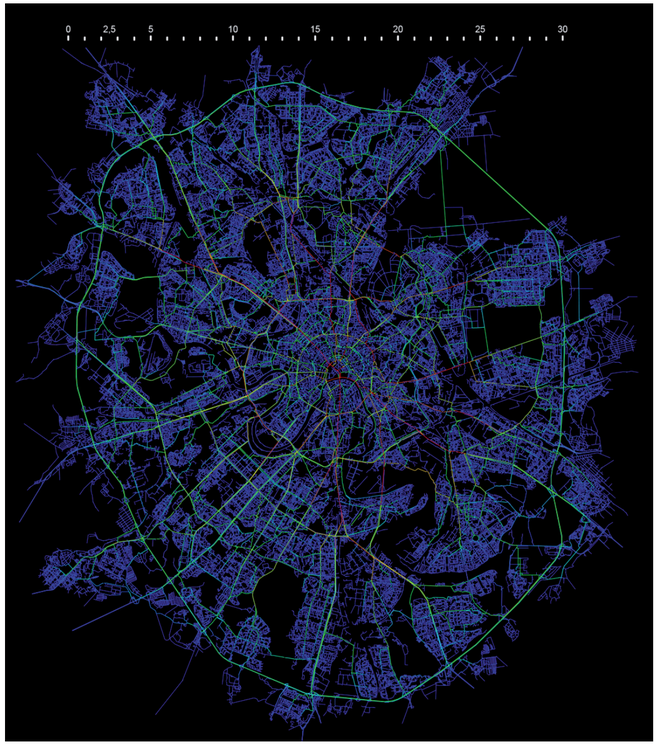
Large dormitory districts on the periphery are not adequately served by metro lines and are still hardly accessible, despite the fact that the metro system is running on the maximum capacity (with the 40-second interval between the trains). The population density of residential areas increases towards periphery, up to thirty thousand people per km^2 (the dark grey on the map), while areas in the center, with the densest undeground network have the population density of less than ten thousand people per km^2 .

Configuration of public transport networks is primarily a result of a strong historical dominance of the city center, where most of the jobs are currently concentrated. If restructured in order to connect the densest residential areas and industrail platforms, public transport networks could become a strong catalyst for regeneration of deprived areas.



The densest dormitory districts (in black) in relation to public transport coverage (in red)

Sources: GIS data, Population census 2010



Mobility

Public transport vs.

car-based development

The road network density, due to the large scale of urban blocks in the periphery, is not high enough in relation to population density to provide a "healthy" operation of transport networks. Global metric choice (on the left) shows that fast roads serve mainly the center of the city, which is also due to the road width is car-oriented.

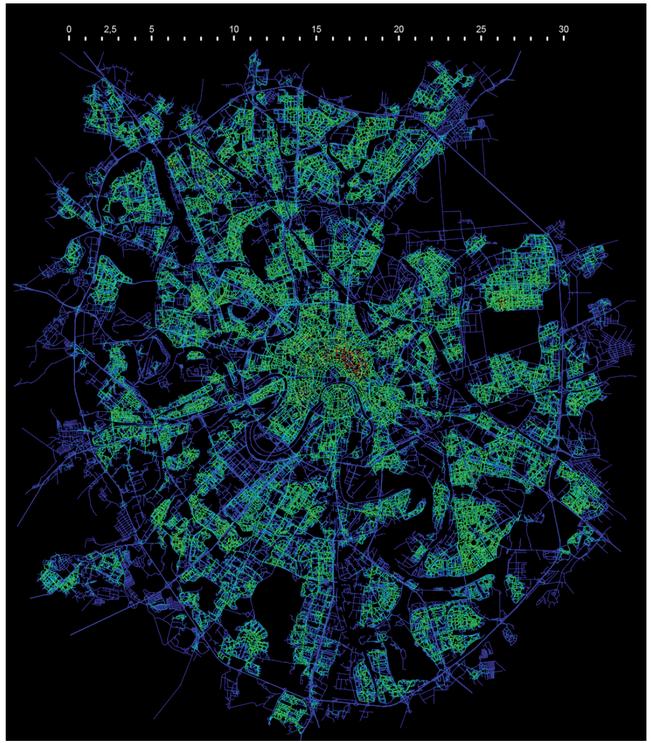
Local metric choice (on the right) shows missing links in local street network: in some cases because of parks, but mainly because of dense rail network and industrail platforms. Closed for the public, and not having enough streets they serve as the strongest barriers in an urban fabric.

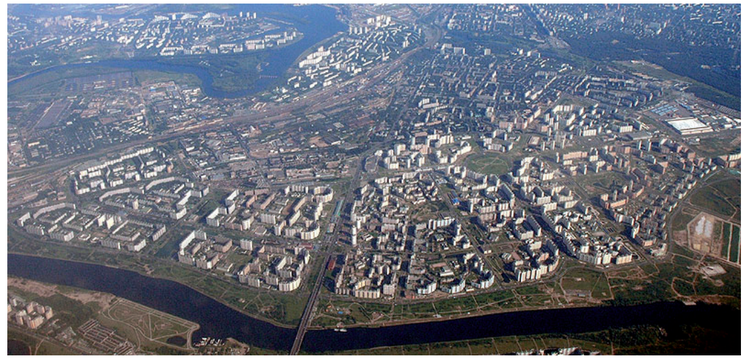
Moscow segment map global metric choice R38000

Sources: tracing on maps.google.com

Moscow segment map local metric choice R600

Sources: tracing on maps.google.com





Dormitory district Maryino (1990s-2000s)

Image sources: http://upload.wikimedia.org/wikipedia/ru/

Open space

Loss of scale

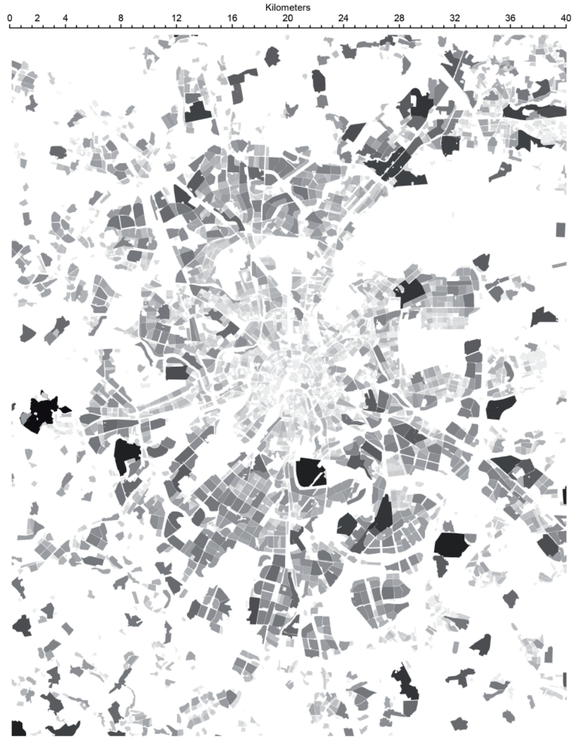
Moscow inner periphery (territory between MKAD [1] and the Third ring[2]) is currently a large buffer zone between the city and the region. It is homogeneous and monofunctional, it keeps global scale "through" movement and it lacks local identity. At the same time it represents almost 93.5 per cent of the city territory and accommodates 92 per cent of the population (Bokova, 2010).

The size of urban blocks, as well as population density increases dramatically towards periphery – the largest dormitory districts as well as industrial platforms are marked by a complete loss of the human scale

In order to make it easier for small actors to colonize the availible areas and to make the dormitory districts walkable, it is necessary to downsize the enormous plots of land and to introduce hierarchy of public spaces.

1 MKAD – Moscow Automobile Ring Road, the outermost road, which starting from the 1950s was considered ad a city boundary

2 The Third Ring – the high speed freeway constructed in 2005, basically divides the inner city center of 1930s from the peripheral dormitory districts



Plot size (the biggest - dark grey, small grain - light grey)

Sources: GIS data

Kitay-gorod

Image source: http://zyalt.livejournal.com/685927.html

"If modernism ever managed to throw off its scarps and tatters and the uneasy joints that bind it to the past, it would lose all its weight and depth, and the maelstrom of modern life would carry it helplessly away. It is only by keeping alive the bonds that tie it to the modernists of the past – bonds at once intimate and antagonistic – that it can help the moderns of the present and the future to be free"

(Berman, 1982, p. 346)

Deconstruction

Storyline

Urban growth

Policentric supervillage

19th century industrial city

City of the working class

First socialist capital

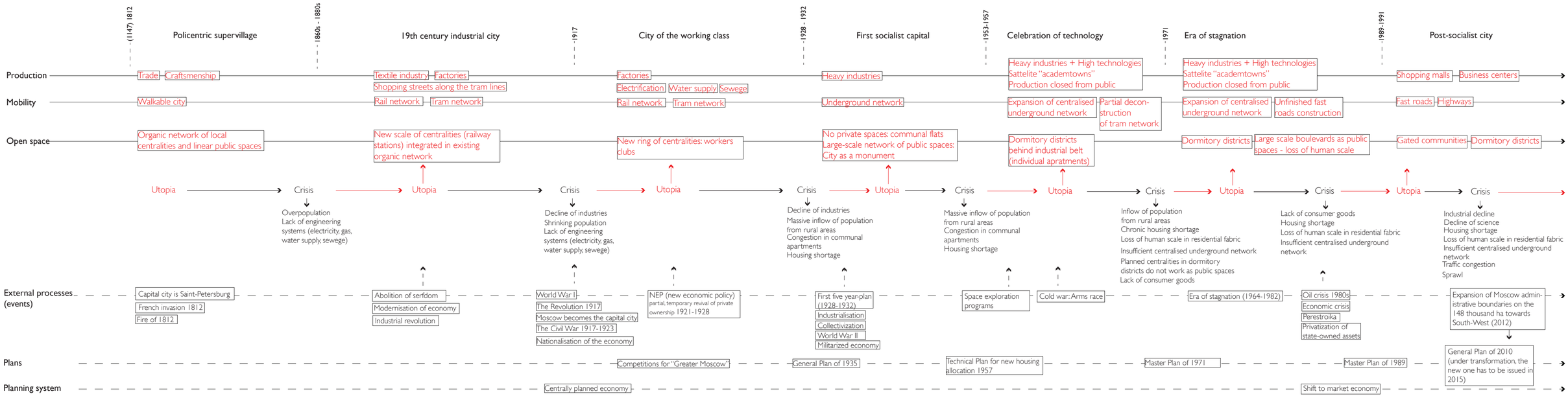
Celebration of technology

Era of stagnation

Post-socialist city

Conclusions

Storyline


(1147) 1812
Policentric supervillage
1860s - 1880s
19th century industrial city
1917
City of the working class
1928 - 1932
First socialist capital
1953-1957
Celebration of technology
1971
Era of stagnation
1989-1991
Post-socialist city
Production
Trade
Craftsmenship
Textile industry
Factories
Shopping streets along the tram lines
Factories
Electrification
Water supply
Sewege
Heavy industries
Heavy industries + High technologies
Sattelite "academtowns"
Production closed from public
Heavy industries + High technologies
Sattelite "academtowns"
Production closed from public
Shopping malls
Business centers
Mobility
Walkable city
Rail network
Tram network
Rail network
Tram network
Underground network
Expansion of centralised underground network
Partial decon-struction of tram network
Expansion of centralised underground network
Unfinished fast roads construction
Fast roads
Highways
Open space
Organic network of local centralities and linear public spaces
New scale of centralities (railway stations) integrated in existing organic network
New ring of centralities: workers clubs
No private spaces: communal flats
Large-scale network of public spaces: City as a monument
Dormitory districts behind industrial belt (individual apratments)
Dormitory districts
Large scale boulevards as public spaces - loss of human scale
Gated communities
Dormitory districts
Utopia
Crisis
Overpopulation
Lack of engineering systems (electricity, gas, water supply, sewege)
Utopia
Crisis
Decline of industries
Shrinking population
Lack of engineering systems (electricity, gas, water supply, sewege)
Utopia
Crisis
Decline of industries
Massive inflow of population from rural areas
Congestion in communal apartments
Housing shortage
Utopia
Crisis
Massive inflow of population from rural areas
Congestion in communal apartments
Housing shortage
Utopia
Crisis
Inflow of population from rural areas
Chronic housing shortage
Loss of human scale in residential fabric
Insufficient centralised underground network
Planned centralities in dormitory districts do not work as public spaces
Lack of consumer goods
Utopia
Crisis
Lack of consumer goods
Housing shortage
Loss of human scale in residential fabric
Insufficient centralised underground network
Utopia
Crisis
Industrial decline
Decline of science
Housing shortage
Loss of human scale in residential fabric
Insufficient centralised underground network
Traffic congestion
Sprawl
External processes (events)
Capital city is Saint-Petersburg
French invasion 1812
Fire of 1812
Abolition of serfdom
Modernisation of economy
Industrial revolution
World War I
The Revolution 1917
Moscow becomes the capital city
The Civil War 1917-1923
Nationalisation of the economy
NEP (new economic policy)
partial, temporary revival of private ownership 1921-1928
First five year-plan (1928-1932)
Industrialisation
Collectivization
World War II
Militarized economy
Space exploration programs
Cold war: Arms race
Era of stagnation (1964-1982)
Oil crisis 1980s
Economic crisis
Perestroika
Privatization of state-owned assets
Expansion of Moscow admin-istrative boundaries on the 148 thousand ha towards South-West (2012)
Plans
Competitions for "Greater Moscow"
General Plan of 1935
Technical Plan for new housing allocation 1957
Master Plan of 1971
Master Plan of 1989
General Plan of 2010 (under transformation, the new one has to be issued in 2015)
Planning system
Centrally planned economy
Shift to market economy

The Russian urban history of the Soviet time is the story of massive industrialization and industrial policy (Lappo & Polyan, 1999) in the context of centrally planned, command economy and constantly underdeveloped infrastructure. Urban transformation of Moscow was largely influenced by these processes.

The history of the city is studied through the lens of changing modes of transportation in relation to the evolution of production and inhabitation.

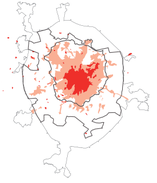
Being trading city with local quarters of craftsmen untill the end of the nineteenth century, by the beginning of the twentieth century Moscow had become industrial city (mainly oriented to textile production) and biggest transport hub in the country with nine railway stations and dense tram network. After the years of the Revolution of 1917 and the following years of the Civil War (1917-1923), when population radically shrank and any kind of production was in decline, the radical transformation of the city took place. Along with the goal to create a city as a monument of power, Moscow was reconstructed to become the biggest hub of heavy industries. The main attention of planners of that time and further on was given to developing heavy industries and military sectors of economy at the expense of manufacturing, consumer goods, and housing sector (Becker, et al., 2012). Regarding public spaces, - in context of complete lack of privacy (approx. 4-5m2 per person between 1920s and 1950s) (Heller & Nekrich, 1986) a great attention was given to the networks of public spaces and to public transport infrastructures. This type of development (though industrialization was made successfully) had put the city of Moscow in a deep housing crisis. In the situation of the constant inflow of population from rural areas and lack of housing stock, the planners of 1950s had radically shifted their attention to massive construction of pre-fabricated housing. New dormitory districts were connected with the center and with the industrial belt through the growing underground network. With regards to production, starting from the 1950s the attention had shifted from heavy industries to high technologies and science (aerospace and nuclear technologies). New scientific centers were mainly located in satellite "academtowns" around Moscow, and this type of production was in general closed from public. After the shift to market economy in the 1990s heavy industries as well as science sector have started to decline. The city center has become the main financial hub where most of the jobs are concentrated, and outer periphery of the city with the ring road has served as the main location for the trading sector. Dormitory districts, where most of the population is concentrated, in turn, are poorly connected with jobs (as public transport is not effective and car network is close to a collapse) and do not benefit from decaying industrial territories.

The deconstruction of the city into spatial-temporal layers is a way to articulate the routes of current conflicts within the city and to explore hidden potentials on the territory.

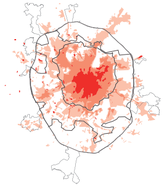
Maps are made with the use of historical maps and materials from the research „Archaeology of Periphery" (2013), excluding layers of production, which are drawn by the interpretation of the writings about each period.

Urban growth

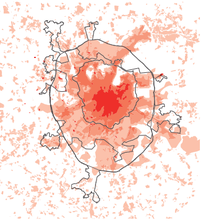
Urbanized territory beginning of the 20th century
Administratvie borders
beginning of the 20th century



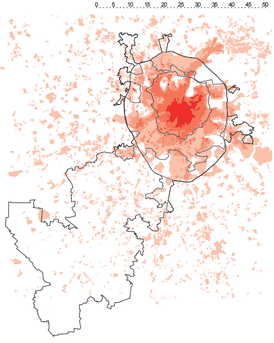
Urbanized territory 1939
Administratvie borders
according to General plan 1935



Urbanized territory 1968
Administratvie borders according to General plan 1971



Urbanized territory 2012
Administratvie borders
before July 2012



Urbanized territory 2012
Administratvie borders after July 2012

Moscow 1880s

Image sources: http://dedushkin1.livejournal.com/513873.html

Production — Trade — Craftsmenship

Mobility — Walkable city

Open space — Organic network of local centralities and linear public spaces

1. Policentric supervillage (1147- 1860s/1880s)

Local and global networks [Utopia]

The city was founded in the twelfth century as a fortress, and in fourteenth century the residents of Kremlin quarter built a new fortification, the Kitai-gorod Wall, which laid the foundation of Moscow's annular structure. During the course of the following eight centuries, until the middle of the twentieth century, what now is the center of Moscow took shape. Moscow is almost the only Russian metropolitan city which kept its radial-annular structure and escaped planning transformations which were common during eighteenth and nineteenth centuries (Bokova, 2010). For these two hundred years, the capital of Russia was Saint-Petersburg, while Moscow was functioning mainly as a trading city and was growing in a self-organizing way. Local quarters of artisans and tradesman grew naturally along the main radial roads, and roads used to connect the city with other villages and monasteries and then with the other cities and with the neighbouring countries (Sitin, 1958). Supergrid networks were integrated into local networks of public spaces.

Local street network

Map source: Moscow map 1880, 1852 Sources: http://www.etomesto.ru

Global trading routes (in black) and local quarters of artisans (in grey)

Map source: Moscow map 1880, 1852 Sources: http://www.etomesto.ru

Tverskoy boulevard (on the bottom) leading to Strastnoy monastery (on the top)

Image sources: https://pastvu.com/, http://stchekov.wordpress.com/

1. Policentric supervillage (1147- 1860s/1880s)

Networks of public spaces

Orthodox churches were focus points of every small city quarter. They formed irregular public spaces which served for gathering of public guilds (Bogoescu, 2010). Situated on public squares, they provided sense of place for local networks and played an essential role in people's everyday life.

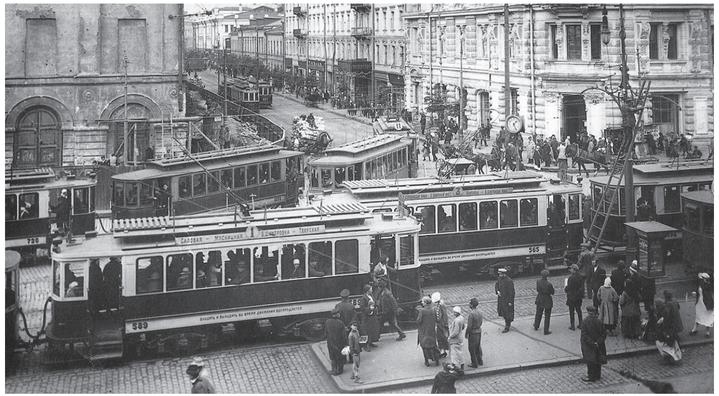
Boulevard and Garden rings were created on the place of old fortifications in the end of the 18th and the beginning of the 19th centuries respectively. They represented rings of linear public spaces with beads of centralities strung on them. Parks were originally used for hunting or as estates of noblemen, but in the 19th century they were given to the city for public use.

The medieval city of Moscow represents a place where infrastructures of different scale are overlapping, what makes it meaningful across all the levels.

Policentric supervillage is not comparable with the contemporary city nor in size, nor in the ways it operates. It also had faced the crisis of overpopulation and had to deal with the problems of lack of basic engineering systems. Nonetheless, the way it was constructed across the scales can be examplary, when new rationalities of acting in the urban space are being developed.

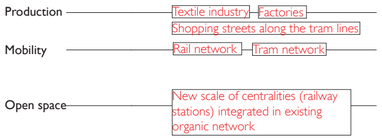
Churches, monasteries and estates as centralities grouped along boulevards

Map source: Moscow map 1880, 1852 Sources: http://www.etomesto.ru



City center, 1925

Images source: http://varlamov.me/ru/tags/staryefotografiimoskvy?page=2



2. 19th century industrial city (1860s/1880s-1917)

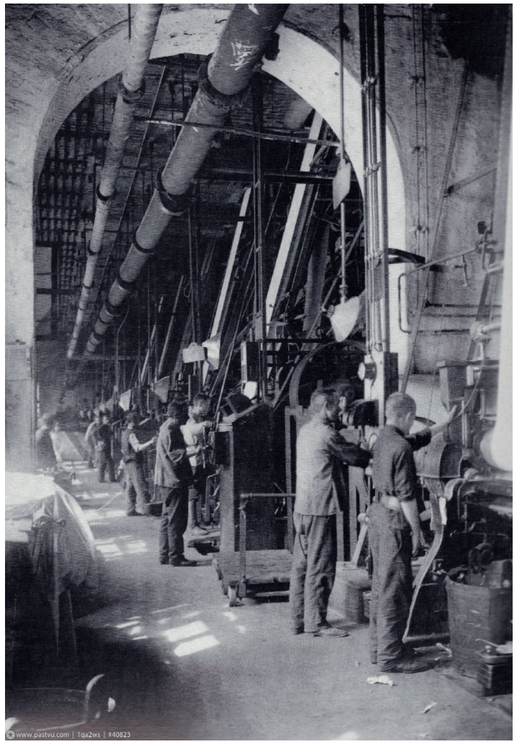
Mobility as a public space [Utopia]

As a response to a rapid modernization of the country in the end of the 19th century nine railway stations were constructed around the inner city and then were later connected with a ring railroad to shape a largest transport hub in the country. Newly constructed dense network of tramlines was naturally integrated into network of railways. Railway stations represented new type of centralities, providing a smooth shift from one scale to another.

In the 19th century industrial city mobility served not only to connect different places, but as a public space itself, offering 'explorability' of the city through movement.

Integration of local tram network into railway network. Railway stations as centralities

Map source: Moscow map 1915, 1913 Sources: http://www.etomesto.ru



Prokhorovskaya factory

Images source: https://pastvu.com/_p/a/6/6/3/6633b7b1150c3408478f65a21b7006ec.jpg

2. 19th century industrial city (1860s/1880s)

Factories [Utopia]

Modernization of infrastructure was a response to new factories emerging in the city. Heavy industries were located in the eastern part of the city (due to wind direction) and downstream, while light industries and textile manufacturing were located close to the water and mainly upstream (western part of the city).

In pre-evolutionary Moscow the main economy of the city was the textile production.

Despite the fact, that the scale of production increased in comparison to the previous period (factories replaced local quarters of artisans), the relation between production and inhabitation was still presented, and transportation networks adequately bound together layers of production and open space.

Maps of Moscow in the beginning of the twentieth century show that the city was not so monocentric as it is now. Being developed without real plan, it expanded towards the North. There were several reasons for that: flatter topography on the North, swampy lands on the South-East, existing 'strong' centralities on the North-East (three railway stations, park 'Sokolniki'), the presence of another river Yauza. The location of ring railroad also shows that it was supposed that in the future northern parts of the city woud be much more urbanized.

[Crisis]

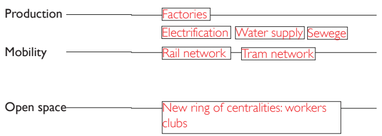
By the 1917 Moscow city faced many common problems of industrial cities of that time. City was overpopulated and its structure was still archaic: buildings were low-rise, mainly wooden,and water supplies, sewerage and electricity were extremely short (Kharin, 2007). The quality of life was still very low and urban form of the city required modernization.

Ring of factories: heavy industries (dark grey) on the east, downstream; light industries on the west, close to the water
local production (grey)

Map source: Moscow map 1915, 1913 Sources: http://www.etomesto.ru

Big Moscow plan by Shestakov, 1926. New centralities built according to Shestakov plan:
Kitchen-factory, Kauchuk factory club, Zuev's workers club

Map source: http://retromap.ru/links/album39.html Images source: http://oldmos.ru/old/photo/tag/Branson+DeCou



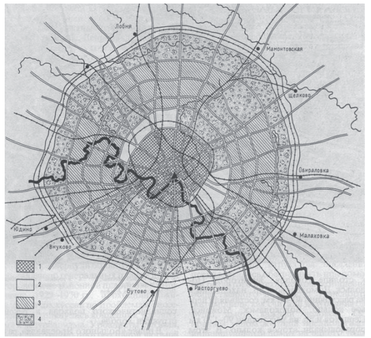
3. The city of the working class (1917-1928/32)

[Utopia/crisis]

The Revolution, the Civil war and complete restructuring of the society had devastating effects on the city of Moscow after the 1917. In the first years of socialism the whole economy of the city was destroyed and population of Moscow shrank drastically (Heller & Nekrich, 1986). At the same time the capital of the country was shifted from Saint-Petersburg to Moscow. The city had to be transformed to represent an utopia of the first socialist capital in the world. Not so much was done during the 1920s, but it is still important to follow the traces of the concepts in the urban fabric of Moscow. Transformations, modest in scale, had a strong cultural and historical meaning. What was done is the construction of projects of Russian avant-garde: mainly worker clubs as new temples of socialism. They shaped a ring according to Shestakov plan of Bigger Moscow (1926) which meant to reinforce radial-concentric structure of the city.

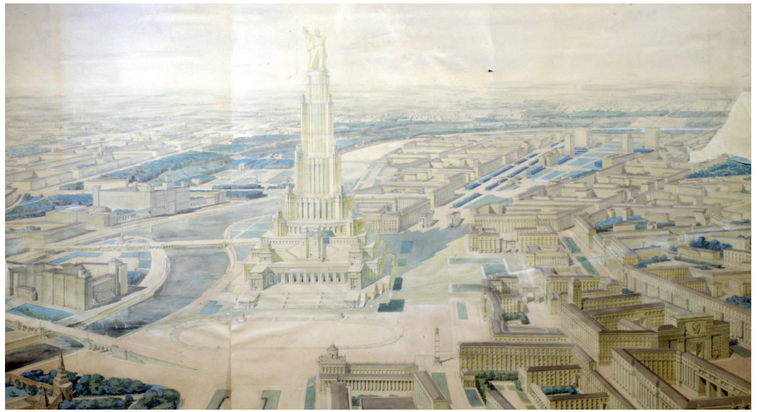
After the nationalisation of the economy, due to the transition to communism all the local production in the city had declined[1]. The process of disintegration of production and inhabitation had started from this moment in history.

1 The short period of New Economic Policy, when private ownership was temporary revived was the only driving force, that facilitated constructions in the city(mainly engineering systems).



Residentail fabric (in light red) - decline of local production
Avan-garde projects as new centralities (in red) and the ring of factories (in grey)

Map source: Archaeology of the Periphery. Research for the Moscow Urban Forum 2013. Moscow: OOO Printmarket Mc
pp.256-257, 284-285; Moscow map 1930, 1915 Sources: http://www.etomesto.ru



Project of the central part of Moscow, bird's view Images source: http://nnm.me/blogs/kryaker41/dvorec-sovetov/v

4. First socialist capital (1928/32-1953/57)

During the Stalin regime the city had to be transformed into a majestic ensemble which would represent the first socialist capital in a period of ten years. Actual plan meant complete reconstruction of the existing city, as well as huge expansion, especially to the South-West, in order to make the city more even towards all the directions from the center and by doing this to reinforce a centralized position of Moscow.

Besides making a monument from the city, the first and primary goal was to transform Moscow into the largest in the country hub of heavy industries.

Production — Heavy industries

Mobility — Underground network

Open space — No private spaces: communal flats
Large-scale network of public spaces:
City as a monument

General Plan of Moscow Reconstruction 1935

Source: http://www.kadashi.ru/images/conf/5/Gen%20plan1935.jpg

Kutuzovsky prospect,
by Naum Granovsky
Source: http://mosfo.ru/
image/b/229.jpg

Wooden slums next to
Serp & Molot factory
Source: pastvu.com

4. First socialist capital (1928/32-1953/57)

Industrialisation [Utopia]

The plan was never fully implemented. Yet, looking at what was done, it is possible to see a logic of upscaling the city to a single monument. The main transformation involved expansion of industrial belt, creation of the wide thoroughfares with new housing blocks along them and introduction of the new underground network. New infrastructure was connecting the city center where most of people was living with the belt of heavy industries.

Public space

New roads even extremely wide were designed to be used mainly by public transport. What is more, immense in scale they did not serve as transit roads – they were carefully integrated into surrounding street network. Yet, this type of roads aggravated the problem of traffic congestion, which happened in the nineties with a rapid increase of car users.

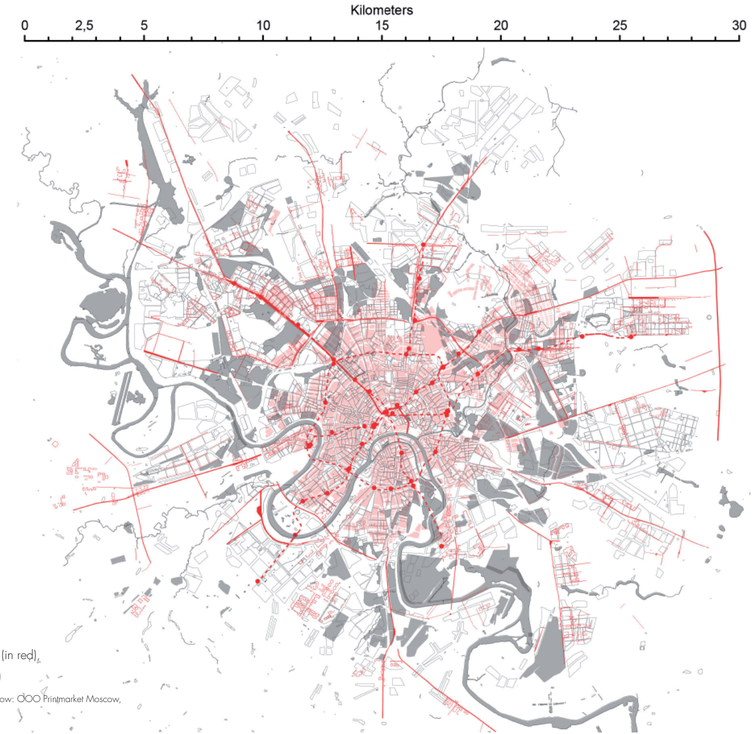
Underground stations were not merely points of intensity in the certain locations of urban fabric. The underground network of public spaces was planned in relation to the centralities above the ground. Metro stations, designed as the temples provided continuity and explorability of spaces both above and under the ground.

[Crisis]

The main interest of planners was dedicated to the rehabilitation of the economy, which was completely destroyed after the yearsof the Revolution and the Civil War.

While industrialisation was successful, and development of infrastructures provided connections between production and inhabitation on a city scale, the attention to housing conditions was very low.

Most of the population lived in communal flats (4m^2 perperson) or in the wooden slums hidden behind the posh facades of the new buildings in extremely low conditions. Crisis of the city as a monument was very deep and required strong and radical actions from the next generation of planners.



Underground network (red dashed line) connecting new parts of the city (in red),
existing residential fabric (in light red) and new belt of industries (in grey)
Map source: Archaeology of the Periphery. Research for the Moscow Urban Forum 2013. Moscow: OOO Printmarket Moscow,
pp.256-257, 284-285; Metromap 1957 http://www.metro.ru/map/1957/

Moscow State University

Source: http://uwd.ru/uploads/posts/2009-06/11200720moskvamoskva_194.jpg

VDNKh
(All-Russia Exhibition Center)

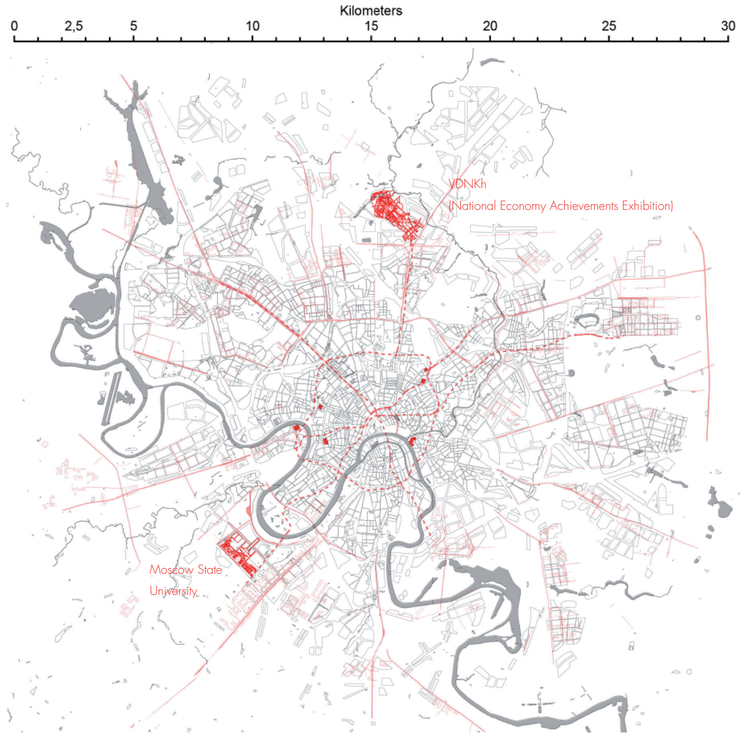
Source: http://all-pages.com/img/repphotos2/repphoto_4711_2212.jpg

4. First socialist capital (1928/32-1953/57)

Big projects as large-scale centralities

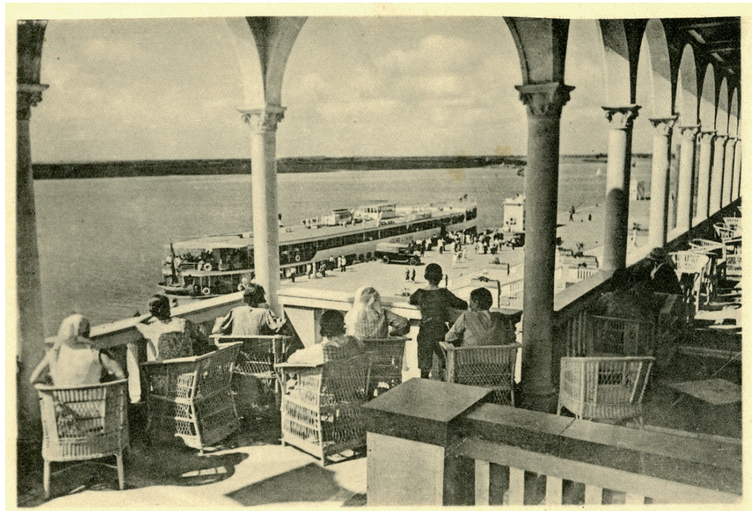
After the Second World War the plan of 1935 was partially changed. Originally planned Palace of the Soviets was never built, but several large-scale centralities were constructed. They were seven high-rises in a city center, and two big projects: Moscow State University and National Economy Achievement Exhibition (VDNKh). The last two emphasized the importance of northern axis (which was there already) and the newly introduced South-Western axis.

Starting from this moment urban development on the South-Western part of the city became one of the most prestigious districts for living. University campus became an important focal point which attracted later another universities and research institutes to this area.



Big projects - Moscow State University and National Economy Achievements Exhibition

Map source: Archaeology of the Periphery. Research for the Moscow Urban Forum 2013. Moscow: OOO Printmarket Moscow, pp.256-257, 284-285; Metromap 1957 http://www.metro.ru/map/1957/



North River port

Source: http://ic.pics.livejournal.com/ig_kuv/41170862/34142/34142_original.jpg

4. First socialist capital (1928/32-1953/57)

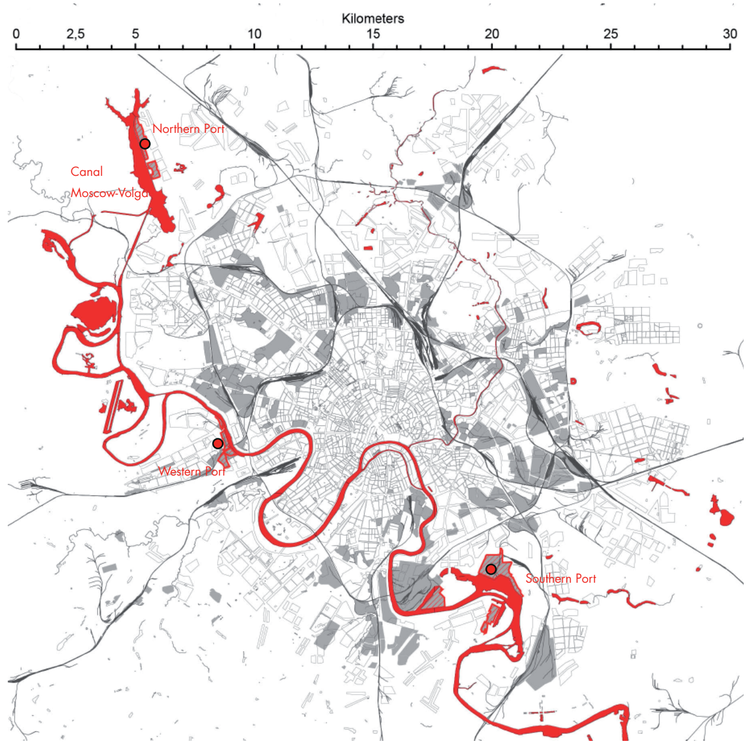
Port of the five seas

Reconstruction of the city involved not only the reconstruction of the urban fabric, but also strong transformation of its water landscape. The wider goal was to make Moscow a port of five seas: to connect Moscow river with Baltic and White sea on the North and with Black, Azov and Kaspian sea in the South. Three big canals were constructed, and one of them (Moscow-Volga) was constructed within the city. It also provided the city with extra fresh water which was in shortage before.

The ambitions to make Moscow a port city were never truly successful, but, what is important, that the river was for the first time rethought as a meaningful part of the city. Ring of industries by that time has already almost reached its modern size. Industries that gravitated to the South Port located downstream later shaped one of the largest industrial territories of the city.

New canals linking Moscow with five seas (in dark blue)
General Plan 1935

Map source: General Plan of Moscow Reconstruction, Moskovsky rabochy, 1936, p.75



Ports (red outline) and Industrial terrtiroties (in grey)

Map source: maps.google.com

The Girl with an Oar in Gorky Park, by Naum Granovsky

Source: http://slavikap.livejournal.com/5826536.html

4.First socialist capital (1928/32-1953/57)

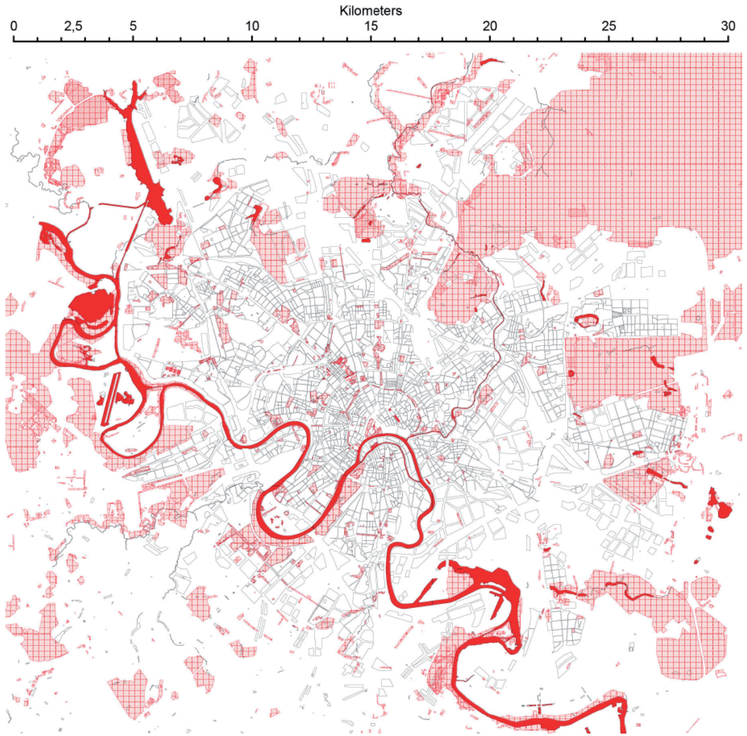
Celebration of the landscape

Great attention to the large-scale, qualitative public space greatly influenced the shape of green and water landscape of Moscow. Green and blue networks became both centralities and carrying structures for the networks of public spaces. System of green wedges was established to reinforce the star-shaped structure of the city.

Being now one of the greenest in the world, Moscow urban fabric has lost the logic of the carrying green structure: equally dispersed everywhere green spaces do not serve anymore as backbones for networks of public spaces.

Scheme of the main thoroughfares, water and greenery. General Plan 1935

Map source: General Plan of Moscow Reconstruction, Moskovsky rabochy, 1936, p.280

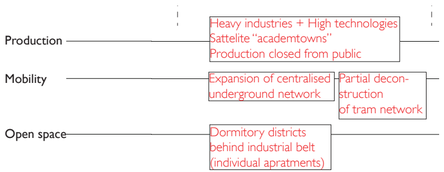


Waterfronts and green wedges

Map source: maps.google.com

Moscow South-West, 1976

Source: http://postomania.ru/post273466441/



5. Celebration of technology (1953/57-1971)

The period is marked by a radical change in inhabitation patterns. Fascinated with technological progress, (there was a time of space exploration programs) the planners of the city believed that technology can completely change the way people live. The result was that the production of housing was put on fully pre-fabricated base.

With regards to production, from this moment, besides industrail belt, it was also concentrated in newly constructed scientific cluster - sattelite „academ" towns outside Moscow.

As tis type of production was related to aerospace, aviation and nuclear energy, most of the plants and research institutes were closed from public.

Starting from the Technical plan of 1957, general plans had less and less influence on real constructions in the city. They had more and more retroactive character (Sitar, 2013) and became merely document made to legalize what already had been built (Sitar, 2013).

Master Plan 1957

Source: http://retromap.ru/gallery/albums/userpics/10055/FF0524_0519571_medium.jpg

Construction of „Khrushchovka" - first residents

Source: http://nnm.me/blogs/kot_vaska/kak-stroili-hrushevki/page2/

5. Celebration of technology (1953/57-1971)

Extreme minimalism [Utopia]

An extreme need for housing coupled with Nikita Khrushchev' s technocratic optimism resulted in an immense in scale program of massive housing construction after 1957 (by 1965 amount of massive housing came up to 5,02 million square meters, while in 1949 it was 0,4 million square meters [1]). Such a strong jump in scale and in speed of construction became possible because production of the housing had been put on a fully industrial base. The very idea of housing and open space related to it was reduced to extreme minimalism: home as a sleeping box, mobility as transit, public space as "just " green equally dispersed everywhere (Sitar, 2013)

The idea of modest life, while reducing the complexity of the city (or even the complexity of the human being) was a solution to housing shortage in the end, every family got the opportunity to have their own place to live.

The underground network was expanded along with dormitory districts, and transportation systems were still public transport oriented. Yet, the pathos of the fast movement went along with the fascination of the technological progress. It is important to mention, that between 1950s and 1970s the amount of goods transported by cars became equal to those transported by cargo trains (State Statistics Committee of USSR, referenced Sitar, 2013, p.226). Since that moment , the share of goods transported by cars was only increasing.

1 Data from Central Statistical Administration of RSFSR. National economy within 60 years. Statistic Yearbook. - M., Statistics, 1977, p. 222, referenced by Sitar, 2013

[Crisis]

One of key conflicts related to a period of massive housing construction was that most of dormitory districts were designed without any relation to local context (Kraynyaya, 2013).

The integration happened through the underground network, and while it worked well (to a certain extent) connecting large chunks of dormitory districts and industries, the fragmentation of the local urban tissue was a result on another level of scale.

Celebration of technology has shaped a huge amorphous mass strongly dependent from the center and industrial belt. There was a strong need to introduce hierarchy in completely monofunctional urban fabric of new peripheral territories.

Housing construction (in light red) in relation to underground network, tram networks (in red dashed) and industries (in grey)

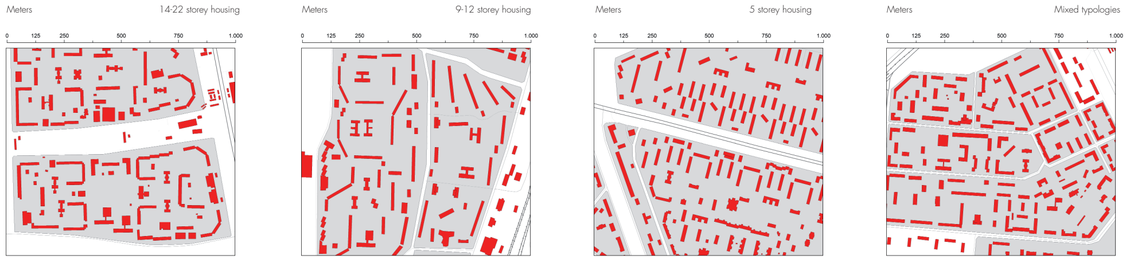
Map source: Archaeology of the Periphery. Research for the Moscow Urban Forum 2013. Moscow: OOO Printmarket Moscow, pp.256-257, 284-285; Metromap 1970 http://metroworld.ruz.net/moscow/maps_1970.gif

Tram map 1973 http://tram.ruz.net/maps/sh19730300.gif

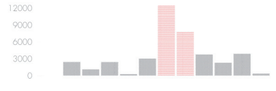
Photo by Marina Lystseva, source: https://ssl.panoramio.com/photo/22229160

5. Celebration of technology (1953/57-1971)

Each next generation of the housing construction was marked by radical increase in scale of not only housing typologies, but of a public space related to it. While first series of "Khrushchovkas" were mainly 5-storey housing blocks, the next series were 9-12 storeys, and after the 1970s their height increased to 14-22-storeys. The scale of the public space (as the width of the courtyards had to be the double of the building height) increased respectively, while the density of the street network was decreasing towards the periphery.



Source: GIS data



Housing construction by year

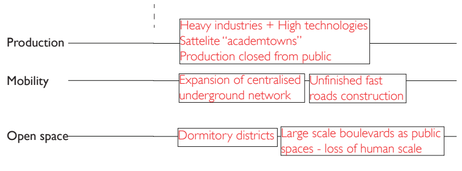
Source: Bokova, A., 2010. Moscow: Diagnosis. Project Russia, 57, pp. 77

Housing typologies by height

Map source: Archaeology of the Periphery. Research for the Moscow Urban Forum 2013. Moscow: OOO Printmarket Moscow, pp.256-257, 284-285;

Master Plan 1971

Source: http://www.kadashi.ru/images/conf/5/Plan%20Moskvi1971.jpg



6. Era of stagnation (1971-1989/91)

Mobility as transit [Utopia]

The plan of the 1971 clearly reflects on the problem of monofunctional periphery completely dependent from the center. There is an attempt to decentralize the city by introducing the grid in radial-concentric city and by creating new urban centers with jobs on the periphery. Created in the period of stagnation of the Soviet system this plan was never realized. Yet, some transformations took place.

Several fast roads were constructed, but never integrated into urban urban fabric: large scale of dormitory districts did not allow to create a dense street network.

Road construction in a period between 1971-1991 (shown in red)

Map source: Archaeology of the Periphery. Research for the Moscow Urban Forum 2013. Moscow: OOO Printmarket Moscow, pp.256-257, 284-285;

Moscow. Suburb.
by Igor Palmin
Source: https://fbcdn-sphotos-e-a.akamaihd.net/hphotos-ak-ash2/t1.0-9/395405_362614867098807_562619517_n.jpg

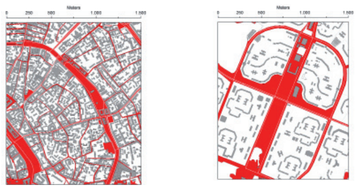
Moscow. Veshniaki.
by Igor Palmin
Source:https://fbcdn-sphotos-f-a.akamaihd.net/hphotos-ak-ash3/t1.0-9/625408_624874737539484_1463019337_n.jpg

6. Era of stagnation (1971-1989/91)

Loss of human scale

Urban centers, though partially realized, were just immense empty boulevards or squares. Meant to be used as centralities, but having wrong scale, they became another non-places or voids in a huge mass of Moscow Periphery.

Even though the construction of the microrayons went along with underground expansion, the pace of residential constructions had been much faster than the expansion of metro lines (Glazychev, 2008). As a result, public transport was always congested and is not able to adequately serve the periphery of the city.

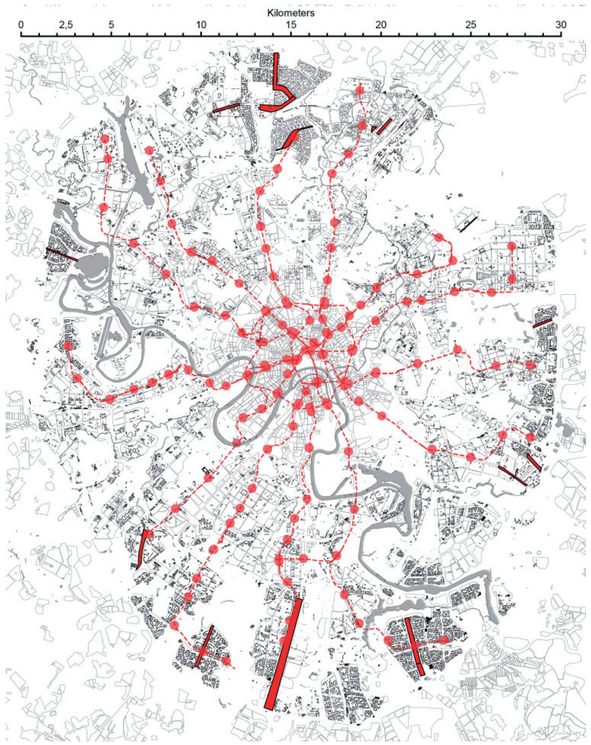


Comparison of the scales of public spaces in the city center (on the left) and in the dormitory district of the 70s (on the right)
Map source: GIS data

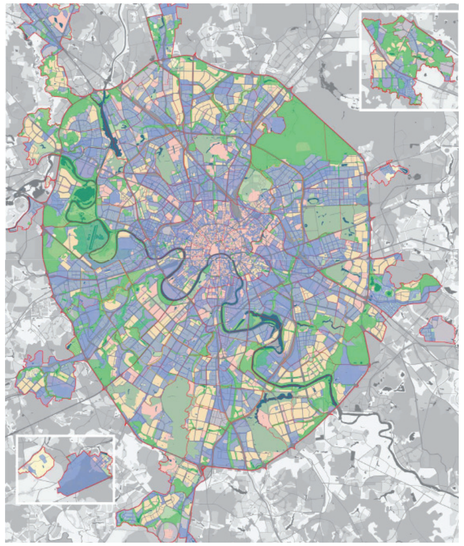
[Crisis]

On this stage, it is possible to observe the complete loss of scale in the public space, the crisis of transportation networks, which become dependent from the center and industrial territories.

At the same time, the pace of construction reached such a high speed, that any general plans issued from 1957, were not able to regulate processes shaping the urban structure of Moscow.



Housing construction and new local centers (in red) in relation to underground network (red, dashed)
Map source: Archaeology of the Periphery. Research for the Moscow Urban Forum 2013. Moscow: OOO Printmarket Moscow, pp.256-257, 284-285; Metromap 1991 http://metroworld.ruz.net/moscow/maps_1991.jpg



General Plan 2010. Territories of reorganisation are shown in blue

Source: http://gpinfo.mka.mos.ru/kniga_3/ pp.568-569

7. Post-socialist city (1989/91-...)

Zoning plans and land use regulations

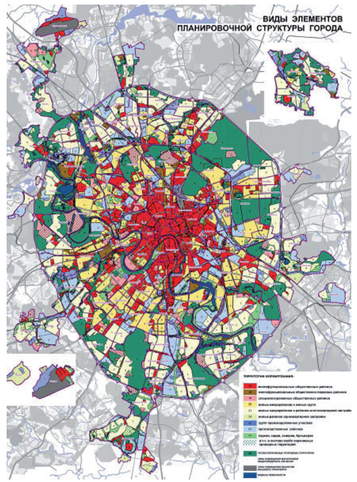
The main feature of a contemporary post-communist city is the inability of the planning system to regulate market forces which shape the urban form of Moscow for the last twenty years. What is more, during this time, urban planning system was in a period of a deep crisis, as the whole idea of the government control over the private initiatives was regarded as an attempt to reintroduce former socialist practices (Stanilov, 2007). As a result, all the plans issued after the 1990s were only documenting what was already happening. In this context, construction market became the main actor on the field: endless demand for shopping malls, office buildings and housing made construction business extremely profitable (Bronovitskaya, 2013).

The General Plan 0f 2010[1] reflect more clearly than any plan before, the crisis of the post-socialist city. It establishes only the most general quantitative parameters within particular functional zones (Muratov, 2010). In some cases the change of use is prescribed (from industrial to residential, from residential to mixed-use and so on). But when one makes a closer look to detailed drawings, it is possible to see that basically everything can be transformed. The overall plan of territories of reorganization (on the map they are shown in blue) covers almost the whole city. Without giving guidelines of how to build, it only gives prescriptions where to build and how much (Muratov, 2010).

The density and the height of urban fabric are established in Rules for Land Use and Development (see example). Not only they give very basic quantities, they also do not regulate the scale of constructions: the size of plots is extremely big. It means that it is possible to build any project of any scale, without paying attention to the scale of public space or density of existing street network.

The key problem of the Plan (which is actually is an intended policy) is a complete lack of any principles (Muratov, 2010). The General Plan of 2010 allows building anything anywhere.

1 After the doubling of the administrative borders of the city in July 2012 this plan is being changed: the new one has to be issued in 2015. Still, now it is the main document to be used when regulating all the constructions in the city.



General Plan 2010.
Zoning plan

Source: http://gpinfo.mka.mos.ru/kniga_2/ pp 9-10

Land Use and Development Regulations,
district Pechatniki

Source: http://duma.mos.ru/files_rtf/gen-plan/tom_1_uvao_new_.pdf p. 35

Shopping mall „Golden Babylon"

Source: http://www.projectline.ru/images/user_images/1273575704.jpg

7. Post-socialist city (1989/91-...)

Big projects: big boxes and highways

One of the most important trends from the beginning of the 1990s was a decentralisation of commercial functions (Sykora, cited by Stanilov, 2007). Shift of large-scale commercial functions to the outer periphery, due to the lower administrative barriers for the business community in the Region, meant dramatic change of commercial patterns. Later "big boxes" developments have spread into the city periphery along the major thoroughfares, forming a new type of centralities with the residential districts.

From the one hand, contemporary neoliberal development of Moscow is typical for many cities. But, it is important to remember that the previous socialist periods were marked by a constant shortage of consumer goods.

So, the complete reorientation to tertiary sector of economy was not only a global trend, but also a response to a deep crisis of the former system.

In this context, an extreme celebration of individualism and endless consumption is a logical reaction to lack of privacy and to shortage of consumer goods which lasted for seventy years.

Big boxes (in red), fast roads and densest residential districts

Sources: GIS data

Industrial platform near Pechatniki Source: author's own

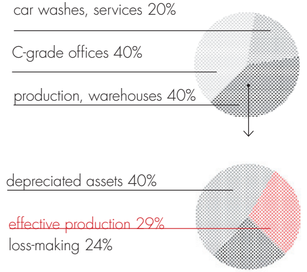
Industrial platform Projector Source: author's own

7. Post-socialist city (1989/91-...)

Externalities: brownfields

The external effects of the change in modes of production from industries and science to tertiary sectors of economy were the huge spaces of exclusion, which cover almost all the territories of industrial territories.

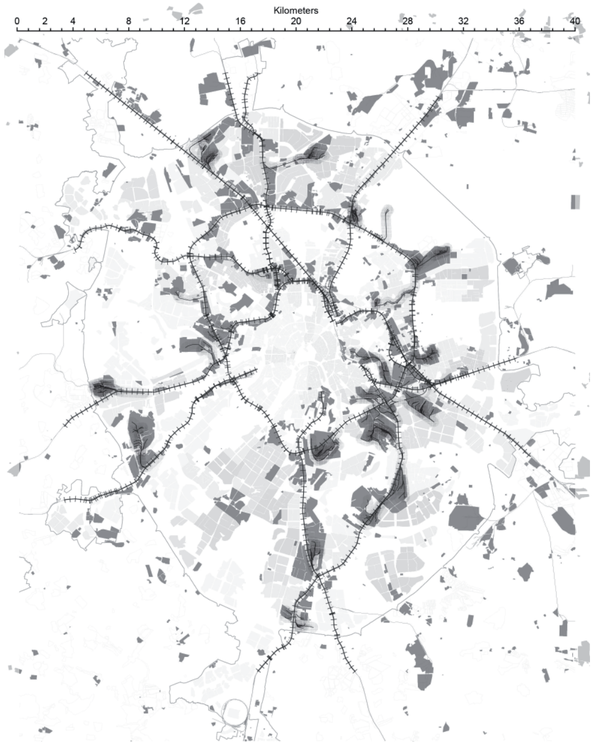
Rail network designed to serve industries is also declining, as the most of the goods are currently transported by cars, and industries are decaying. It only transports people from the suburbia to the city.



Existing ativities on industrial platforms

Sources: http://clever-estate.ru/news/pressabout/ostanut-sya-li-ofisy-klassa-s-i-dposle-reorganizacii-promzon

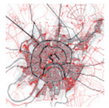
Resolution No 107-PP, Feb. 24 2004, on the targeted programme of re-organizing production territories of the City of Moscow for2004-2006



Declining industrial territories and railways

Sources: GIS data

Conclusions



Policentric supervillage

19th century industrial city

City of the working class

First socialist capital

- If the problems instead of being solved, are transferred to another level of scale through bigger and faster infrastructures, there is a threat that the result would be a fragmentation on a lower level of scale

- Loss of relations between production and inhabitation, and uneven development of Moscow city is a direct result of this process.

- In order not to repeat fails of modernists of the past, we should not neglect any of existing spatial-temporal layers, but have to bind together what is already there.

Celebration of technology

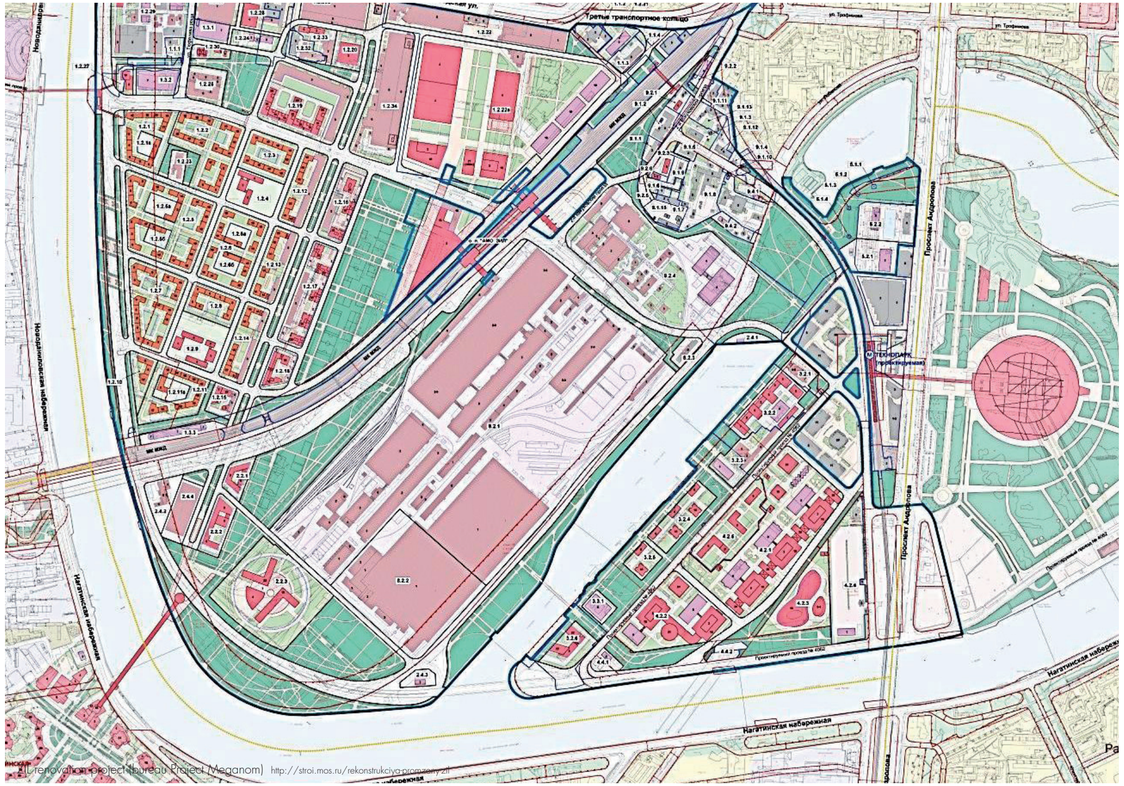
Era of stagnation

Post-socialist city

-Only by overlapping infrastructures of different scale and speed it is possible to create a place operative across all the levels.

-Policentric supervillage and 19th century industrial city, though had their problems, were constructed through the integration of fast and slow mobility networks across all the levels

-Though contemporary city is much bigger and much more complex, than policentric supervillage, it is possible to extrapolate the principles of integration from organically developed, medieval city.



Renovation project Nagatin Project 'Meganom' http://stroi.mos.ru/rekonstrukciya-promzony-on

Dynamic context

Real estate development

Colonisation of industrial territories

Infrastructural projects

Conclusions

Image sources: http://www.donstroy.com/, http://mr-group.ru/ , http://stroi.mos.ru/renovaciya-promzon, http://www.tpsintez.ru/

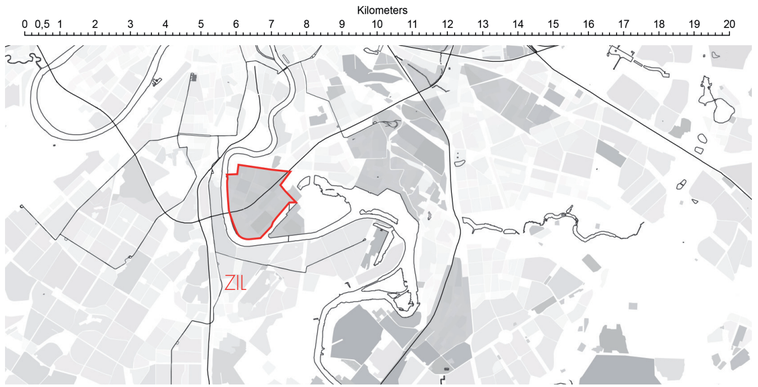
Real estate development

Housing market currently lies in the core of Moscow economy: "The living standards gap between Moscow and the rest of Russia, the huge labour market, proximity to the government and business decision-making centers, the boom of the service sector and the concomitant growth of the middle class seeking better housing conditions have all contributed to huge demands on Moscow's housing construction market" (Kosareva, et al., 2013, p. 376) What is crucial, is that land taxes add only 0.09% to the Moscow budget, taxes for individual property are 0,004% and land leases taxes are 0,02% (Kosareva, et al., 2013). So, having an extremely profitable and monopolized construction sector, the city does not benefit from it at all.

In the context of high demand for housing and at the same time the lack of empty territories available for redevelopment, investors are starting to colonize abandoned industrial territories. According to General Plan, some territories have to be redeveloped for mixe-use, and some have to keep the industrial use, but upgraded.

Redevelopment for mix-use is not the interest of investors, as they understand that at this moment only housing construction is profitable (Vladimirova, 2013). Giving the general framework for mixe-use, the General Plan does not give spatial guidelines how to achieve "mixed-use" development. Confusion of investors is understandable: for them effectiveness of the project (if it is mixe-use) depends on location, environment and perspective of developments of surrounding territories (Vladimirova, 2013). As a result, as General Plan does not guarantee effectiveness, for real estate companies is much easier to make punctual projects, according to their specialization, not context, without giving any attention to the needs of the city.

It is important to mention that pre-revolutionary industrial areas, as they have qualitative architecture, located close to the center and served by public transport, are already reclaimed as creative clusters. As they operate successfully, this areas are out of the thesis concern.



Colonisation of industrial territories:

ZIL (city initiative)

In order to demonstrate how general guidelines for mix use development and for reclamation of industrial territories are working, two recent projects are analyzed and evaluated.

Area of former ZIL (car prodution) plan is owned by the city and is declared to become the first pilot project, where methods of reclaiming industrial platforms are tested.

Nevertheless, mixity is not precented in th project. As this area is locally disconnected from the surroundings, new part of the city, if implemented, can become another monofunctional enclave in fragmented urban fabric.

Area	300 ha
Approx. investments	4 77.5 billion euro
Private investors	
Tlmespan	2014-2018/2022
Demolitions	1090 thousand m²
New constructions	3593 thousand m²
Reconstruction	855 thousand m²
Green spaces	82 ha
Housing	15,6 thousand people
Hotels	14,4 thousand people
Jobs	45 thousand people

ZIL renovation project (bureau Project Meganom)

Sources: http://mirmonolita.ru/_img/1953.jpg,
http://stroi.mos.ru/rekonstrukciya-promzony-zil

Evaluation

Land owned by the city → Location is not strategic: connected with surrounding areas only by highway and railway

↓

Relatively easy to develop single project

Small residential units → Demolition of most part of the buildings

50% jobs 50% housing → Mix use is hardly introduced even on the project level: production is divided from inhabitaation by a highway and vast public space

Former production is partially kept (cars)

Waterfront → Cut off from the new developments by transit, car-oriented road

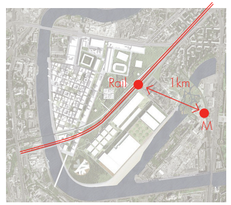
Public spaces are immense in scale and will possibly serve not as carrying structures but as barriers

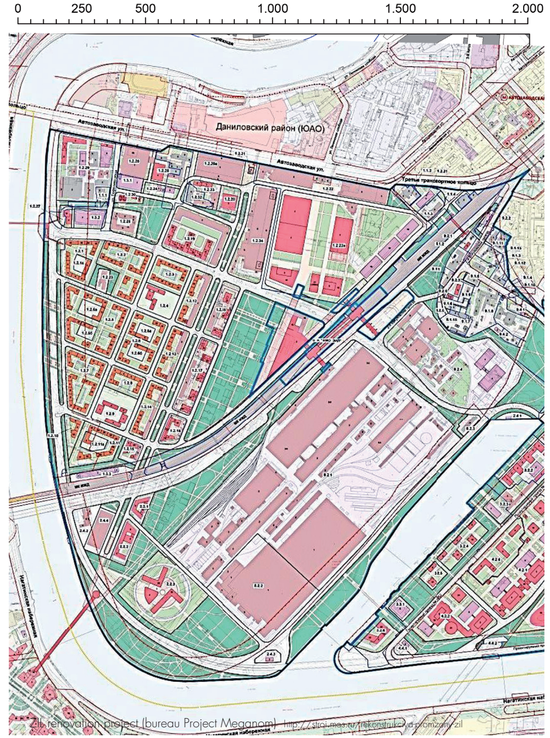
Few links across the Third Ring and the river

More than 500 meters between future railway station and new metro

Redeveloped area is connected with the city only by highway and railway

On a local scale highway and railway will serve as barriers





ZIL renovation project (bureau Project Meganom) http://stroi.mos.ru/rekonstrukciya-promzony-zil

Colonisation of industrial territories:

Serp and Molot (construction company initiative)

The project of Serp and Molot factory redevelopment as a real estate company initiative seems to mark a large step forward: construction company („Don-stroy), which specialisation is mainly luxury housing and gated communities, arranges an international competition together with the city, and chooses the project which is integrated in surrounding context. The street network density provides the continuity of urban landscape, scale of new housing is almost the same as historical part of te city and mix use functions are introduced on a scale of buiding unit.

Yet, even if new plots are based on a factory layout, most old buildings have to be demolished. What is more 50/50 ratio between jobs and housing does not contribute to the disproportion of job distribution on city scale: to balance periphery with the center, much more jobs have to be introduced.

Area	74,5 ha
Approx. investments	3, 9 billion euro
Private investors	
TImespan	2021
Housing	19 thousand people
Jobs	16 thousand people

Sources: http://www.mvrdv.nl/projects/serp_and_molot

Serp & Molot factory project (MVRDV)

Sources: http://www.mvrdv.nl/projects/serp_and_molot/gallery.html

Evaluation

Small, closed building units ← Mostly housing

Mix use on a unit level
↓
50% jobs 50% housing ← Demolition of existing buildings (not possible to keep production: heavy industries)

→ Though mix use is introduced on a project level, on a city scale propsed ratio 50/50 does not contribute to the problem of uneven distribution of jobs.

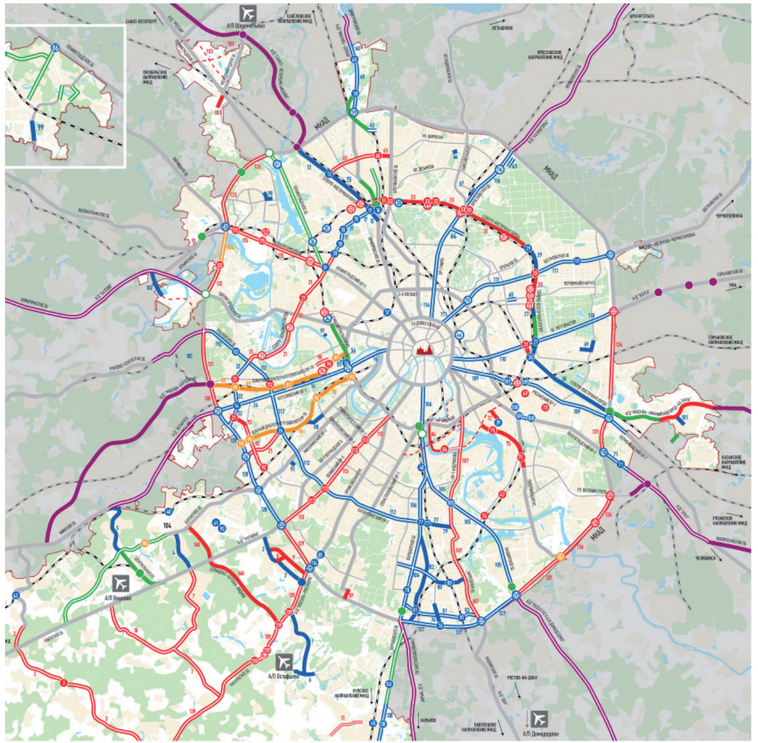
Reuse of old rail as a linear park

Possible to introduce tram

Dense street network - integrated into surrounding urban fabric

Serp & Molot factory project (MVRDV)

Sources: http://www.mvrdv.nl/projects/serp_and_molot/gallery.html



Infrastructural projects

Road construction

Current actions for solving the issue of congestion involve the constructions of new fast connections, tunnels and the physical widening of the main thoroughfares at the expense of pedestrian and green spaces.

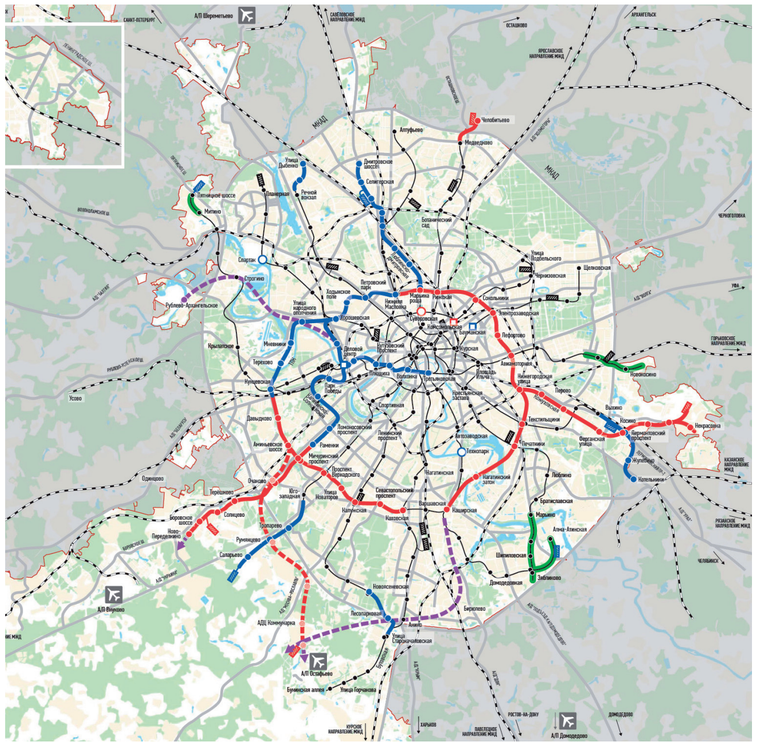
Instead of reinforcing fast roads structure it is necessary to add missing links in local street network, in order to transform industries into livable parts of city instead of being barriers and to integrate them into surrounding dormitory districts

Plans of road construction
(2011-2012 - green
2013-2015 - blue
after 2015 - red)
Sources: http://stroi.mos.ru/uploads/user_files/files/dorogi_shemy_pdf/razvitie_dorog1.pdf

Underground and railway expansion

Underground expansion involves the construction of the second ring and addition of the new radial lines, and inner ring rail road is currently under reconstruction for public use. Though it is clear that the metropolitan city needs extensive public transport network, there is a threat that the construction of the new rings can reinforce the dominant position of the center. The thesis project will test if it would be possible to reduce possible negative effects of new fast neworks, if slow networks are extended and integrated into underground rail networks.

Reconstruction of the inner ring road for public use Sources: mkzd.ru
Underground expansion (2013-2015 - blue, 2016-2020 - red)
Sources: http://www.rosmetrostroy.ru/planmosmetromap2013.htm



Conclusions

While the goals of introducing jobs, housing and mixed use functions on industrial territories are declared, the methods of achieving these goals are not satsfactory.

It is hardly possible to introduce a diversity if the project is based on zoning plans.

It is difficult to integrate projects in the surroundings if actions of construction companies are not limited, and if whole range of possible stakeholders is not involved in the planning process.

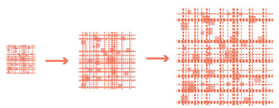
There is a little understanding of actual meaning of mixity. In most cases it involves mixing of housing or retail with offices, while other types of production are kept segregated from inhabitation (start-ups, knowledge production, R&D clusters, small-scale manufacturing, light industries)

If goal of reconstructing live and work relations is declared, there is a need to incorporate all types of open and safe production into city processes

Mixity on a scale of building unit or on a project level can mean homogenuity on a city level and mixity on the territorial level can mean zoning on a level of the neighbourhood

It is important to introduce mix use across all the levels: building unit, urban block, neghbourhood, city district, city periphery.

As most part of Moscow periphery is residential, the ratio between jobs and housing in newly reclimed territories cannot be 50/50, the percentage of jobs should prevail over housing.



Conclusions

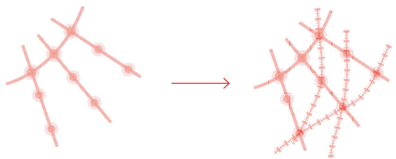
Infrustructures and mixed use cannot be planned separately.

Tram network is planned independently from fast infrastructures, and its expansion is not part of General Plans.

Fast public transport networks provide points of intensity in urban fabric, but do not connect urban fabric locally

Tram networks offer explorability of urban space

Fast and slow networks should be planned together and benefit from each other



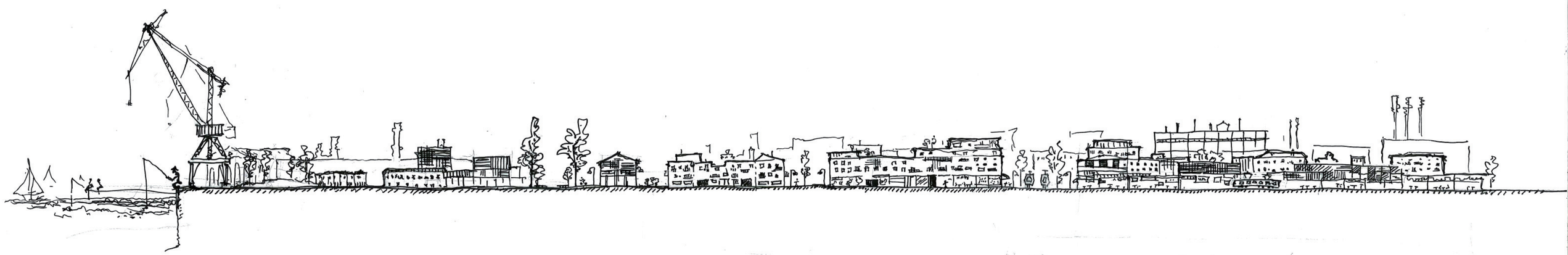
Vision

Space of action

Mobility

Open space

Production



Vision

The project vision is to reconstruct live and work relations in the Eastern periphery of Moscow, towards more even distribution of jobs and housing and providing spatial conditions for mixity between production and inhabition.

This can only happen along with necessary improvements in infrastructure and along with transformation of pubic space configuration.

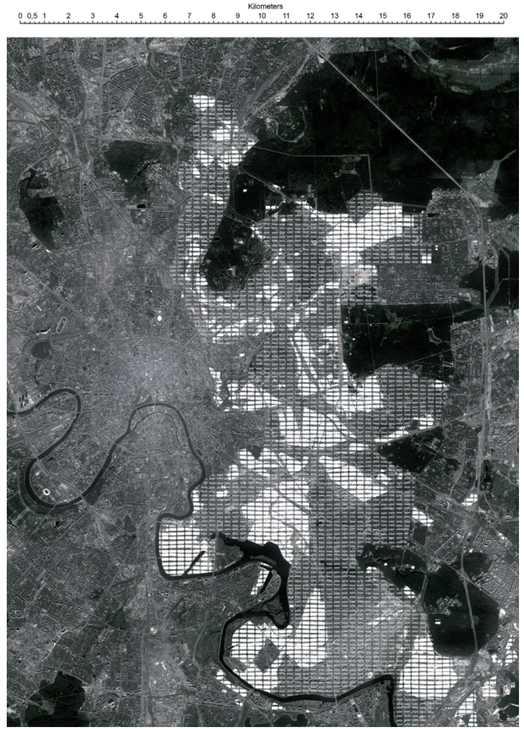
In order to fully use the potentials of industrial territrories, it is crucial to incorporate all the possible open and safe types of production into the process of urban transformation. These would not only be offices, but also small manufacturing, light industries, R&D clusters and knowledge production.

Space of action

Eastern belt is chosen not only because it is the largest void in an urban fabric. Dormitory districts were actually designed close to industrial belt to provide workers with the place to live.

So, if production is would be brought back to where it originally was, there is a possibility to shift the center from historical center to the East, as it would already be surrounded by the densely populated residential fabric.

The main integrative force for this process would be slow public transportation, as an expansion of existing one.



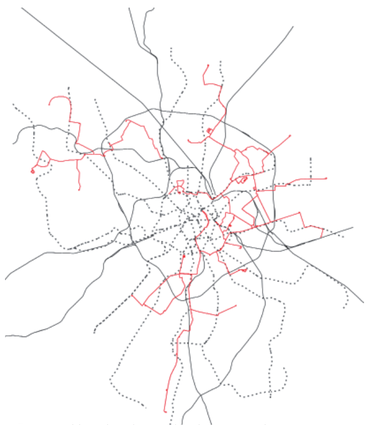
Mobility

Public transport

Existing projects of public transport deal only with fast modes of public transportation without providing the possiblity to shift to slower modes of transportation.

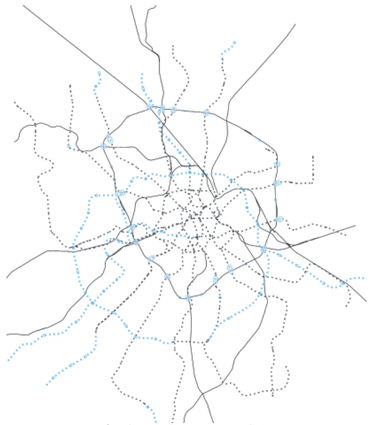
Ongoing projects reinforce the centralised structure of Moscow and aggravate the antagonism between center and periphery.

Projects of the TOD stations, if implemented can become large-scale eanclaves not connected with surrounding neoghbourhoods.



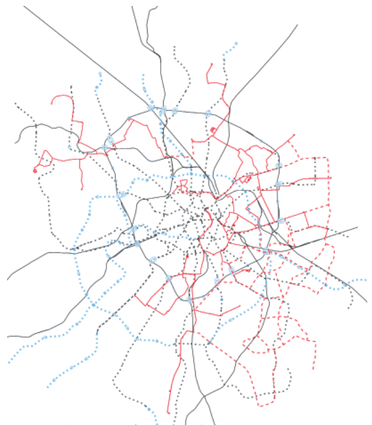
Existing public rail, undeground and tram network

Source: GIS data



Existing project of undeground expansion and TOD stations

Source: http://mkzd.ru/, http://www.rosmetrostroy.ru/planmosmetromap2013.htm



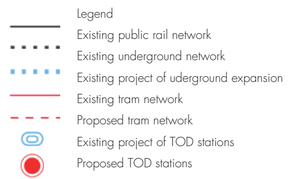
Proposed expansion of tram network

At the same time existing tram network is not efficient and not integrated into existing underground and railway network.

What is proposed, is to introduce slow tram network, as a continuation to existing one. It would go through the derelict industrial platforms and dormitory districts and connect existing and future city-scale metro and rail stations.

This would facilitate redevelopment of productive territories on industrial platforms, connect densest inhabtable areas with newly introduced jobs and integrate eastern periphery into the existing movement networks on a city and metropolitan scale.

Proposed expansion of tram network and new TOD stations



Mobility

Road network

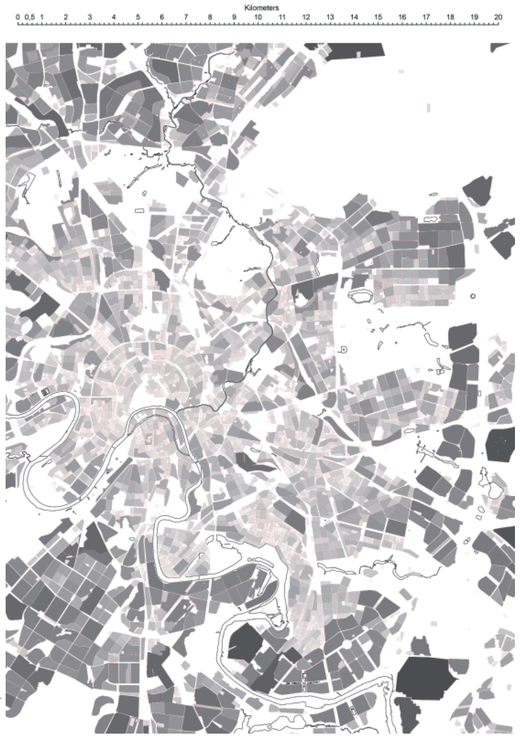
Industrial territories and abandaned rails currently operates as large voids within road network. Small-scale links should be added across rails and industrial platforms in order to reconstract street network and to increase integration of the dormitory districts.

Industrial areas as voids in the urban fabric (on the left)
Redefined street network with new major links in red (on the right)

Open space

Plot structure

Allotments of industrial territories and dormitory districts should be downsized following existing built landscape (existing driveways, reused rails). This would allow to introduce new streets, make it easier to regulate new constractions and allow new small and local actors to colonize the terrtirories.



Large-scale grid of urban fabric (on the left)
Downsized grid would inclrease the permeability of urban fabric (on the right)

Open space

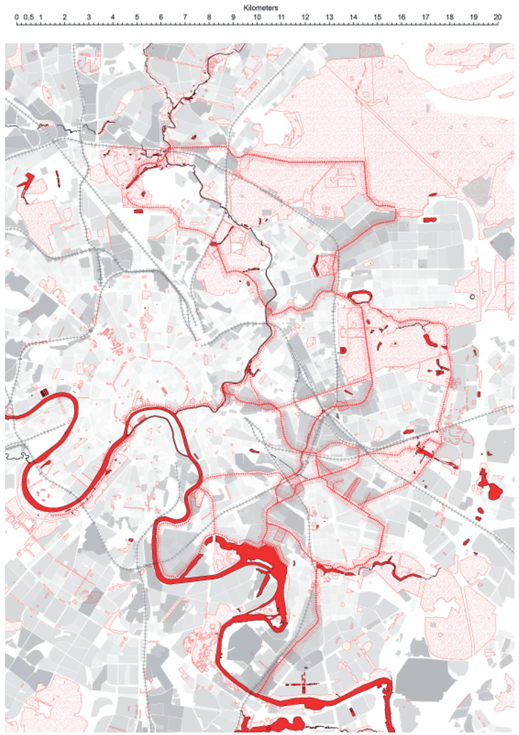
Green carrying structure

Despite the fact that almost all territory of dormitory districts is green, there is a lack of green structures which shape a slow network of public spaces. At the same time, abandoned rail network carries a strong potential to be restructured in order to connect existing parks as main centralities on the periphery. Rails can be redesigned to become boulevards and bike routes to connect parks and water bodies.

-

Main parks and abandoned rails

Legend
Existing public rail network
Main parks
Abandoned rails
Proposed slow network of boulevards and bike lanes



Proposed green carrying structure

Legend
Existing public rail network
Main parks
Abandoned rails
Proposed slow network of boulevards and bike lanes

Production

Dangerous and polluting industries (oil refinery, heavy industries, building materials production) should be replaced, allowed for land remediation and then reclaimed.

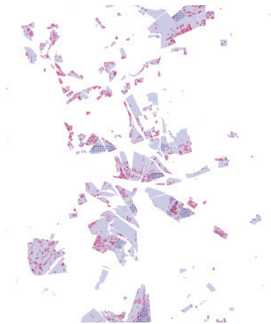
Thermal power plants, and waste treatment plants can be kept, but upgraded and surrounded with green buffer zones

Actors: city government, owners of enterprises, Moscow department of science, industrial policy and entrepreneurship

Small-scale warehouses should be rented cheaply to individual entrepreneurs and start-ups.

Parking garages should be replaced with multi-storey parkings

Actors: city government, Moscow department of cultural heritage, land-owners, start-ups

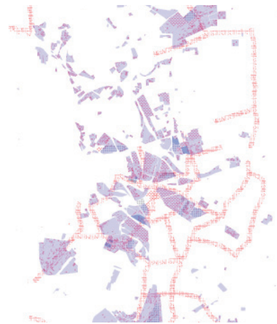


Existing research institutes (Radioelectronics, biomedical engineering, space engineering, nanoengineering etc.), light industries (textile, furniture manufacturing) and offices should keep their functions, but upgraded. Their territoties should be open to the public. Military production should be transformed to civil.

Actors: city government, Moscow department of science, industrial policy and entrepreneurship, land-owners, owners of the enterprises

Areas along the new tram lines can boost mix use activities in monofunctional dormitory districts

Actors: start-ups, individual entrepreneurs, local residents

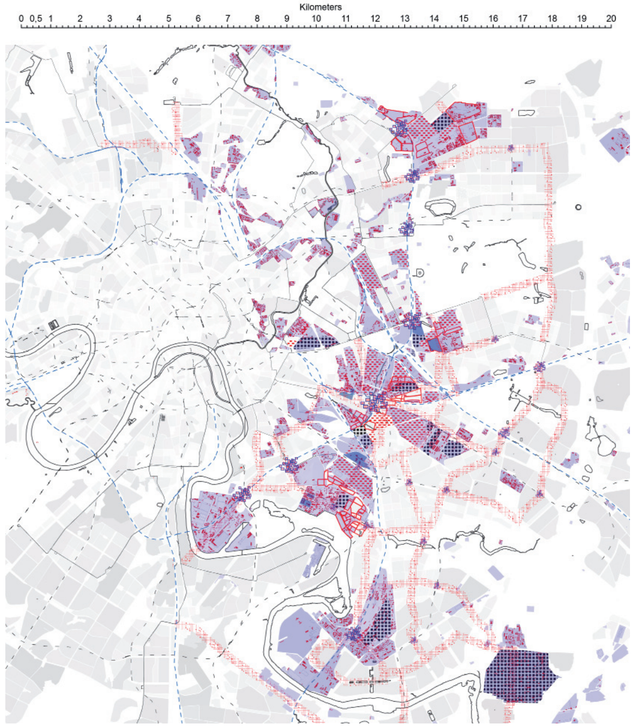


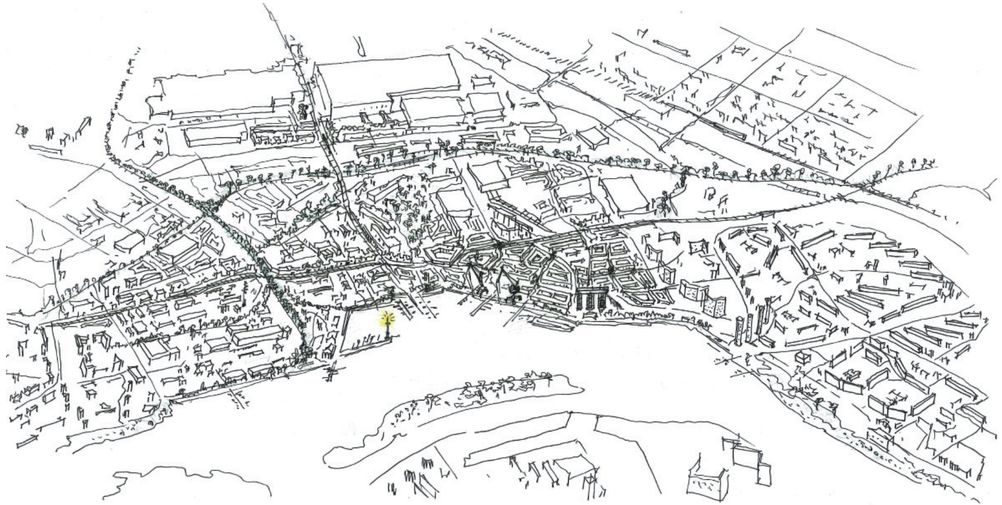
Downsized, empty or partially empty plots on industrial territories can be allowed for intensification (residentail and mixed-use) by real estate development companies under certain conditions.

Actors: city government, construction companies, land owners

TOD stations, when constructed (approx. 2020) can be developed as bussiness districts, but integrated into existing urban fabric.

Actors: city government, transport companies, construction companies





Case studies

Productive supervillage

Human scale neighbourhood

Gate to the East

Case studies

In three case studies it is tested, what would be the possible result, if tram network would be extended and would pass through industrial zones (case one), dormitory districts (case two) and fast infrastructure (case three)

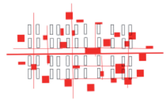
Three case studies would shape a new center in the Eastern periphery. They would also become the pilot projects where principles of reclamation of post-socialist built landscape would be tested and evaluated.

1. Productive supervillage

The project deals with the possibility to regenerate the derelict industrial territories by connecting them with the surroundings, reusing industrial heritage, upgrading existing production and regulating new constructions.

2. Human scale neighbourhood

The case study tests the opportunity to bring mixe use functions and activities to monofunctional dormitory districts by transforming public space along the newly introduced tram line.



3. Gate to the East

Existing projects of TOD stations on the ring railroad, if implemented can become another enclaves in urban fabric, where local neighbourhoods and productive territories are not integrated into global city processes. The goal of the case study is to reduce possible negative effects of existing projects and to incorporate new productive landscapes of eastern periphery into global processes on the city and metropolitan scale.

Three case studies

Southern Port
map source:maps.google.com

Productive supervillage

Context

Declining area of the Southern Port is located in- between densely populated districts Yuzhnoportovy, Pechatniki and Textilshchiki.

The whole industrial zone has the area of 900 hectares and owned by 240 land owners. Area of interventions covers approximately 240 hectares.

The city has the plans to transfrom it both for non-residential and residentail use, but as the land is not owned by the city government, the process of cooperation with stakeholders is not yet established and reclamation of the territory is happening very slowly.

As it was shown in the chapter „Dynamic context", the existing methods of reclaiming industrial territories for mix-use and production are not satisfactory.

Thus, the goal of project is to demonstrate how to redevelop an industrial platform in a way that the city and surrounding residential districts could benefit from it.

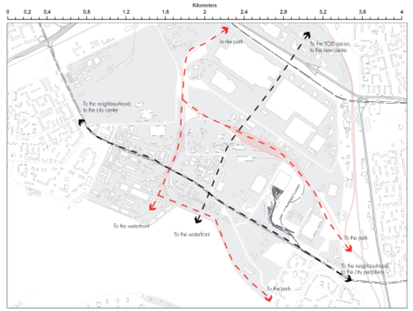
The elements that consitute the territory of the Southern Port are in a great deal similar to those that exist on another industrial platforms of Moscow. So the principles developed in the project area can be further applied to another industrial zones of the city.

Center of innovations „Technopolis"
Image source: http://stroi.mos.ru/reorganizaciya-azlk

Concrete silo
Image source: author's own

Declining port
Image source: maps.google.com

Offices
Image source: maps.google.com



Location

Borders

map source: maps.google.com, wikimapia.org

Analysis

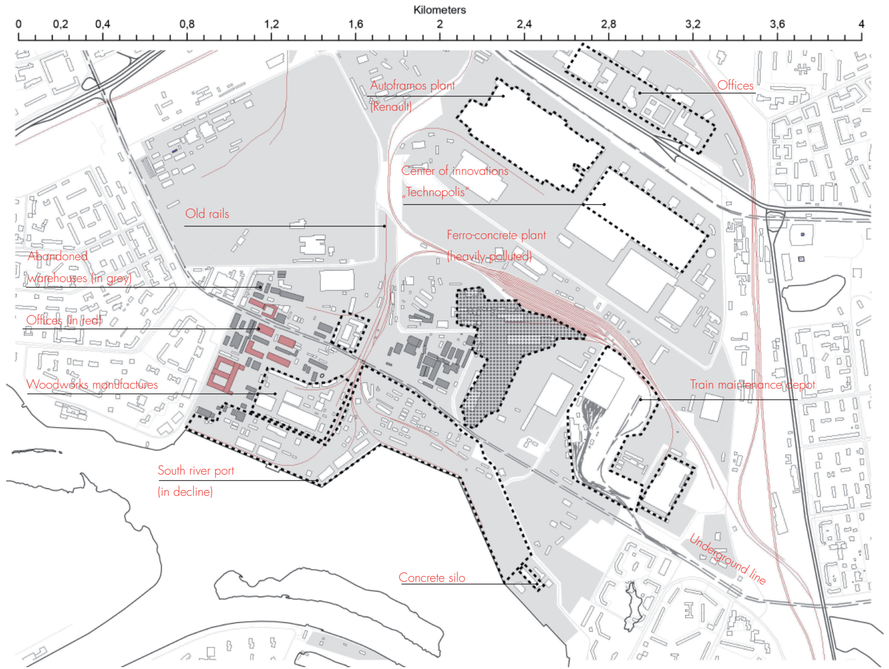
As it was discussed before, Southern Port is strategically located between densely populated residential districts, so, if well connected, it potentially could become a new, alternative to the historical center, centrality for the city.

Now this area serves as an immense barrier in an urban fabric, as almost all its area is fenced. River Port is declining, and old rails serving it, while not in use anymore, still have very few crossings.

The majority of large-scale industries is closed, although C-grade offices, as well as various car services are flourishing along the few roads. There are also several manufacturing enterprises which are still active (wood-works, cosmetics). Most of the warehouses serving heavy industries and port needs are abandoned.

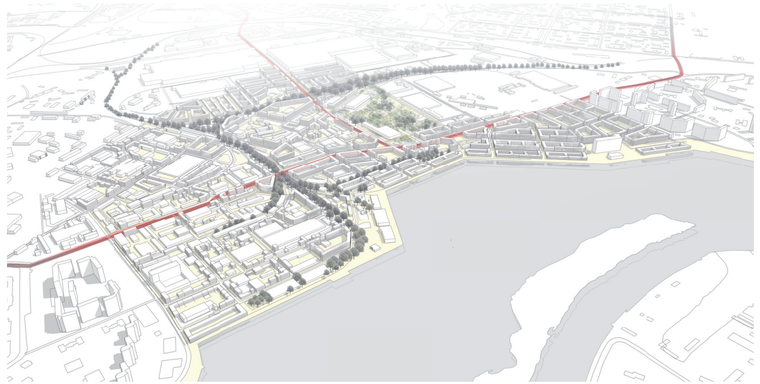
The main pollutant in the area is ferro-concrete plant, but the rest of the territory is not heavily polluted.

On the North industrial zone „Souther Port" is partially redeveloped for a new center of innovations „Techno-polis". It is located in old buildings of car manufacturing plant „Moskvich". Still, its area not accessible for the public and not connected with the surroundings by public transport. Nevertheless the fact, that new functions are brought to the declining plant, can be regarded as po-sitive and potential for future reclamation of the territory.



Activities

map source: maps.google.com, wikimapia.org



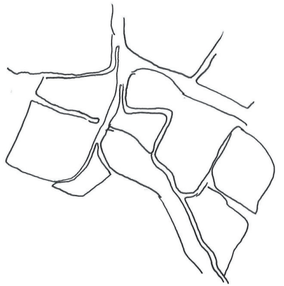
Possible final stage of the project.

Intervention

The main catalysts for the re-emergence of the Southern Port would become the tram lines which would connect densely populated neighbourhoods through the project area. New functions introduced along the tram would at first be primarily work places, as the quality of existing building structures does not allow to reuse them for housing, and as on the city scale there is a need to introduce mainly jobs. Existing port architecture and abandoned warehouse should be preserved as a heritage, in order to protect them from demolition, if land is bought by construction company.

If tram lines would connect project area with surroundings on a city scale, boulevards on old rails would provide sense of place on local scale, as they are a part of slower mobility network for cyclists and pedestrians. Boulevards would also connect existing waterfront with a system of parks on in a city dimension.

Along with the introduction of fast and slow networks, redevelopment of territory can start along the new lines. Colonisation must follow the rules of newly introduced small-grain grid structure. Grid structure should be established according to the configuration of existing landscape which consists of building structures, driveways, roads, rails and green spaces. It should also be integrated in the surrounding street network.



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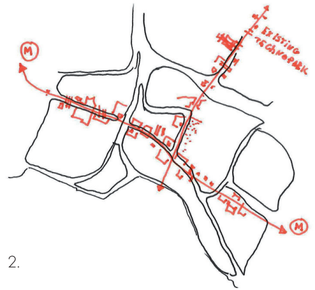

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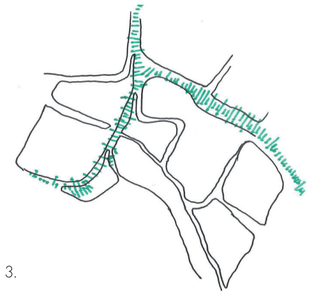


3.

Phasing:

1. Existing chunks of land

2. New tram lines +activities in reused buildings. Existing warehouses should be preserved as heritage.

3. Boulevards on rails +activities in reused buildings

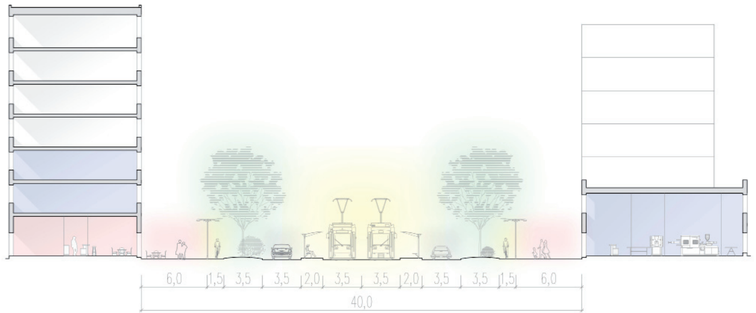
4. Development of the grid along the main lines

5. Expansion of the grid on a whole area. Land owners, real estate developers and individual entrepreneurs can act on the territory according to the rules established for the grid.

Actors: municipality, transport company, department of cultural heritage, land owners, individual entrepreners

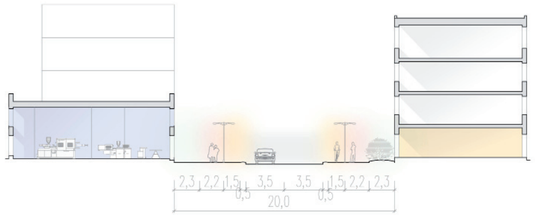
4.

5.

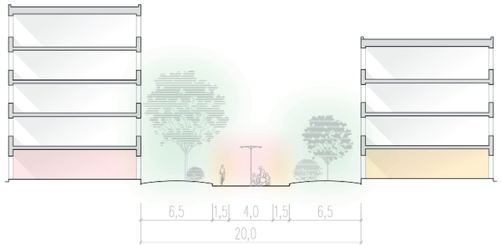


Shopping street (public functions,production,housing): pedestrains, cyclists, cars, trams

Boulevard (public functions, production, housing): pedestrians, cyclists, cars



Regular street (production prevails over housing): pedestrians+cyclists+cars



Local neghbourhood street (residential use prevails over production, local services): pedestrians +cyclists

Use of streets

Ground floors of the buildings along the tramlines and boulevaards should mainly host mix use public functions, such as retail, recreation or culture as well as accommodate workplaces (both offices and local manufacturing).

Most of the space on the streets should be oriented for pedestrians, cyclists, or public transportation. Nevetherless every plot of land should be accessible by cars. As far as production would be active on this area, it would be needed to goods transportation.

On the areas of new developments, where housing prevails over production, some streets can be made fully pedestrian and serve as linear public spaces of neghbourhood scale.

Hierarchy of public spaces

Main linear public spaces of the area are shopping street, boulevard and waterfront. They connect Southern Port with the surrounding city district and metro stations and are integrated in the local street network. They also go through existing centralities such as old port buildings and the remains of industrial heritage.

Pocket squares shape local centralities on neighbourhood scale and are linked with the supergrids by small grain street structure.

Where tram lines cross metro lines it is possible to introduce in the future an extra metro stations.

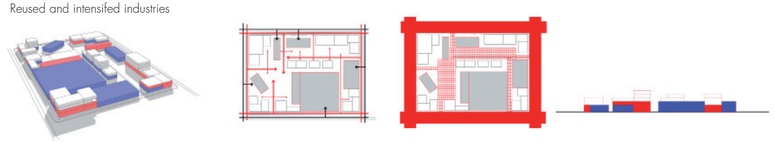
Car accessibility

Car access is provided for every plot, for the needs of goods transportation.

In order to give the possibility to shift from the car to public transport, several multistorey parkings are porvided in the entrances to the supervillage.

Rules for the plots

Reused and intensifed industries

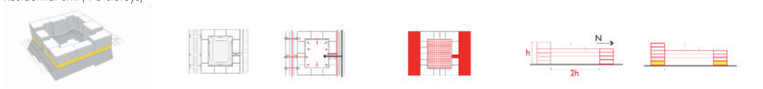


Approx. workspace = 13300m²
Approx. amount of inhabitants (20m²/person) =300

Residential unit (2-4 storeys)

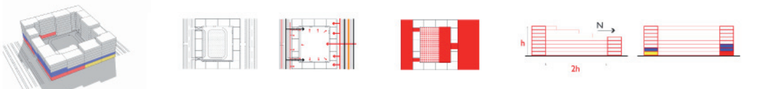
Approx. workspace = 2400m²
Approx. amount of inhabitants (20m²/person) =240

Residential unit (4-6 storeys)



Approx. workspace = 2760m²
Approx. amount of inhabitants (20m²/person) =550

Residential unit (6-8 storeys)



Approx. workspace = 9800m²
Approx. amount of inhabitants (20m²/person) =650

Typology

Accessibility
- cars
- pedestrians
- public transport

Hierarchy of public spaces
- Public
- Semi-public

Height
Defined by the size of the grid and orientation to the North.

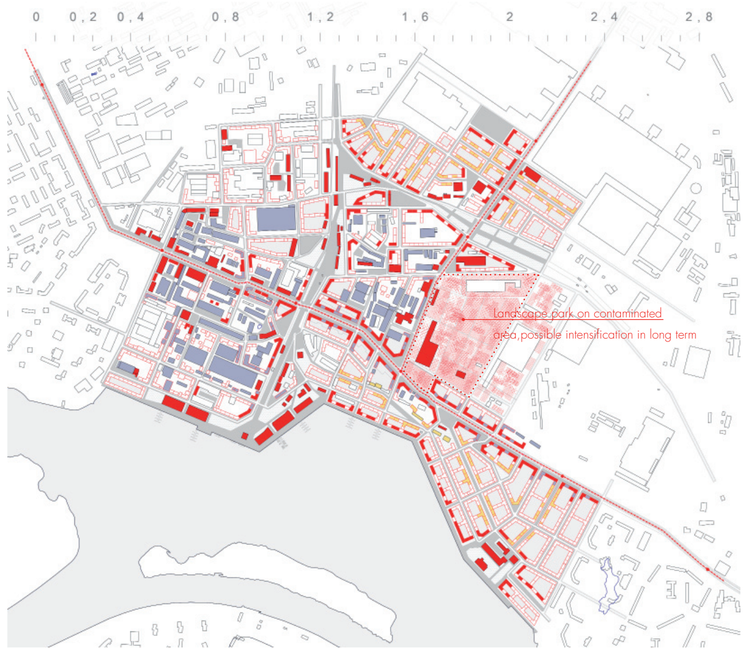
Use
- Local services
- Public functions: retail, recreation, culture
- Production: Manufacturing, offices, R&D, start-ups
- Residential
- Industrial warehouses: preserved as heritage and reused (on plan)

Demonstration

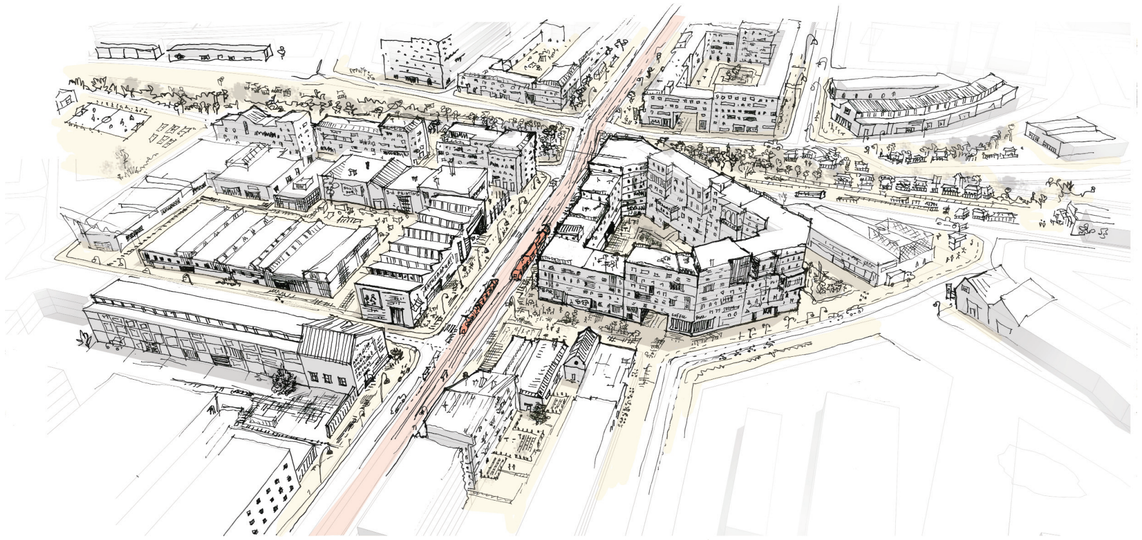
The newly introduced grid must be small grained in order to increase the permeability of the street network and also to make it easier for small developers to reclaim the area.

Plots with existing industrial heritage can be intensified with the housing, and empty plots can be densified mainly new building units.

Size of the grid and maximum height of the buildings should be regulated by the city government. Plots within the grid can be developed by land owners and construction companies according to the established rules.



- New tram lines
- Existing buildings
- New constructions (mostly residential use)
- Buildings reused for production
- Buildings reused for public functions
- New constructions (mostly production)
- New constructions (mostly public functions)
- New constructions (residential +public functions and services of local scale



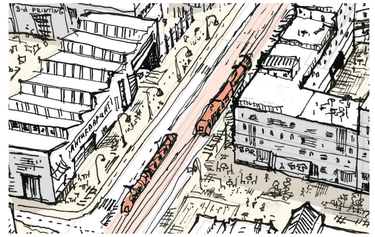
Minimal implemenatation

Redevelopment can start where two infrastructures of different scale are overlapping and where build structures already exist to accommodate new functions.

The crossing of a new tram line with a rails reused for boulevard has this initial qualities. These qualities could be reinforced with the intensification of plots along the tram line and introduction of local scale public functions on a boulevard.

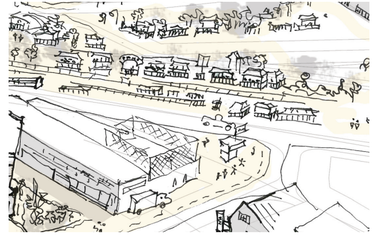
When tram line is introduced, old warehouses could be reused to hold new uses, which would be mainly small scale production and manufacturing. Warehouses can be rented cheaply to start-ups and individual entrepreneurs. Existing production would be kept active (woodwork manufacturing). Open spaces could be intensified with new constructions which would be both residential, mix use, and production. Ground floors oriented towards tram line could have retail and recreational use.

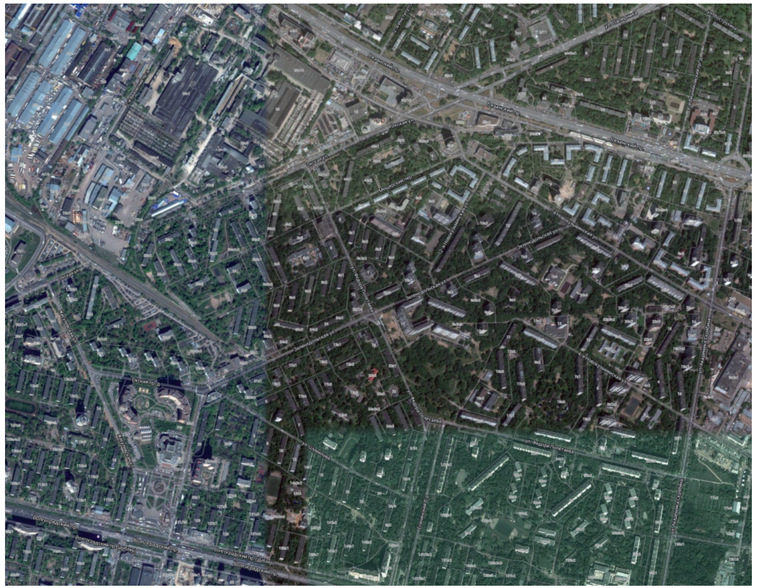
Actors: municipality, transport company, land owners, individual entrepreneurs



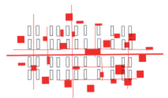
The size of boulevard is dictated by the size of old rail structure. In the widest parts, besides having public promenade and bicycle paths, it can also host cafes, sport grounds or temporary public functions such as sunday market or cultural events

Actors: municipality,immigrants, local community





part of residential district Kuzminki
Map source: maps.google.com



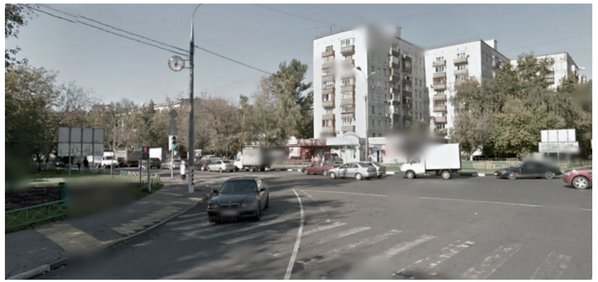
Human scale neighbourhood

Context

The area chosen for the second case study is a typical example of the dormitory districts of the first generation pre-fabricated housing in Moscow. It is constucted mainly from five-storey houses („khrushchyovka"), or nine-storey houses („brezhnevka") with the punctual insertions of 14-17 storey housing from the 1990s. The definite quality of this kind of the built landscape is that it is completely green. Nevertheless, the presence of the „green sea" can be described also as a drawback - lack of hierarchy of green structures contibutes to lack of hierarchy in the network of public spaces.

This type of residential fabric is the most common for those that surround industrial zones. It is rather easy to intervene, compared to another residential districts towards periphery, where population density as well as height and scale of construction increases several times.

Nonetheless the main problems - unlimited, non-hierarchical public space, lack of non-residential functions and insufficient integraation with the surroundings, - are common for all the dormitory districts of Moscow periphery. Thus, the principles applied in the project can with certain degree of elaboration be transferred to other monofunctional neghbourhoods.



Housing and public space at residential district Kuzminki
Image sources: maps.google.com

Sports grounds and park (in red)

Local services and schools

Analysis

Most of dormitory districts of Moscow were built in a period of extreme need for housing. Designed to serve mainly industrial territories they were made completely monofunctional and connected with the center and the industries by the underground network.

Due to the housing typology, the whole area is open to the public and accessible for everybody. In combination with the large amount of green it results into the lack of visibility, what makes the place unsafe. Equally important, that when areas are absolutely open, locals do not perceive them as their own. The result is lack of interest and responsibility for the area: owned by everybody, in reality the neighbourhood does not belong to no one.

The neighbourhood is provided with basic services, such as sports grounds, food stores, schools and kindergartens. Schools and sports are equally distributed all over the area, mostly in-between residential buildings without direct relation with the street. As neighbourhood is connected with the city only by metro and through the fast roads, mix use facilities are flourishing only around metro stations.

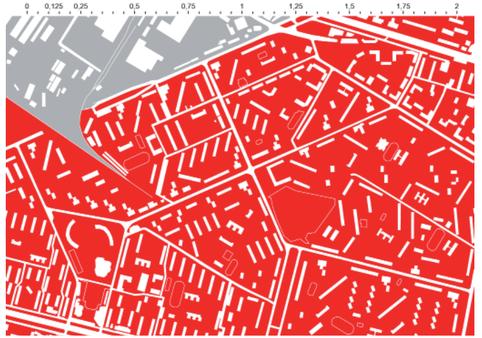
The park located in the middle of the area could potentially serve as a centrality, but as far as everything is green and everything is accessible, it does not work as an attractor nor for diverse activities, nor for different uses around it.

So, the main issue of this area is unlimited open space, lack of jobs and lack of connectivity with the surroundings.

Immense amount of open space could, though, be regarded as a potentail, because there is a lot of physical space to introduce new functions, if its configuration is modified.

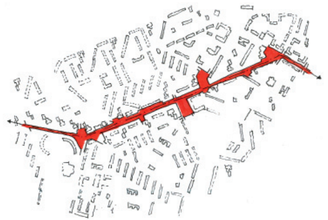
What is more, the population density in the area is relatively high (approx. 17 thousand people per km^2)[1]. It means that it is possible to introduce extra, slow public transportation and by doing this to facilitate an emergence of functions other, than residential.

1 Population census 2010



Unlimited open space (in red)

Residential fabric (population density 17 600p/km^2, source: population census 2010)



Phase 1 Tram line across the neighbourhood

Phase 2 The grid - introducing borders

Phase 2 The grid - defining types of borders: low-rise intensifictation + fences

Intervention

The main intervention would be, as in the first case study, a tram line which would go across the neighbourhood, connecting it with several metro stations. It would become the main attractor for mis use functions and possible small scale production.

But the next step after the introduction of the tram line would be reducing the amount of accessible areas by introducing borders between public and semi-public space.

The basis for that would again become the downsized grid, formulated according to the composition of existing houses, streets and driveways.

It would be important to change the character of the driveways into streets and side-streets. That means that any through-movement across the next-to-the-house area should be restricted, while new borders of the plots would shape the facade for the streets.

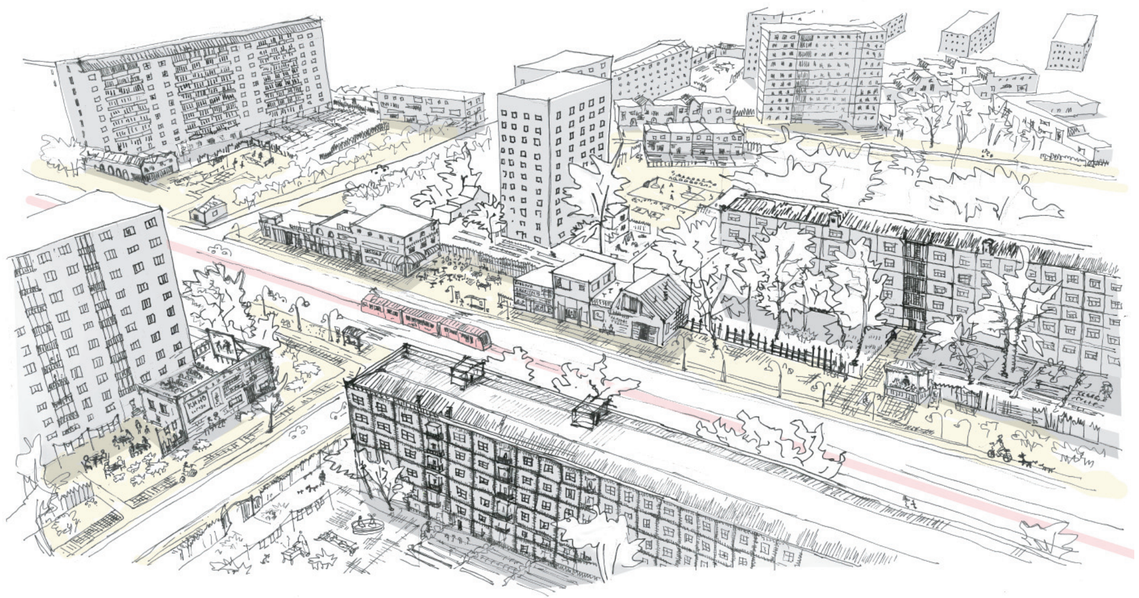
It is not possible to transform existing urban fabric into the closed semi-public building units as in historical center, due to the typology of housing, its height and the presence of the green. What can be down instead - is partial intensification with the low-rise construction, where possible, and in other areas, the construction of the permeable fences, to demarkate the semi-public spaces from public.

First level public space: tram line+mix use and production, city scale, used by locals and non-locals

Second level: Pocket squares, accessible by everybody, used mostly by locals

Third level public space: inner courtyards, semi-public, visible, used by residents of building units.

Hierarchy of public spaces



Demonstration

Newly introduced hierarchy of public spaces would shape the character of activites in the heighbourhood.

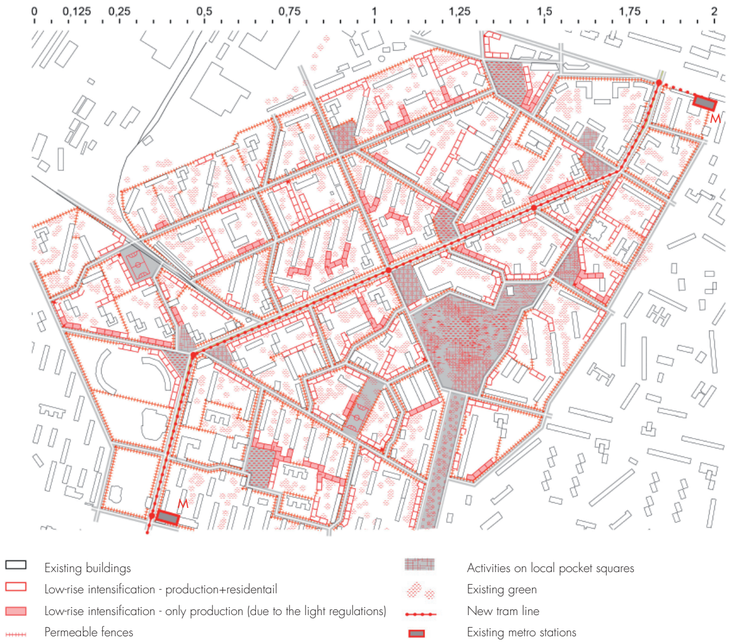
Localized courtyards, could be reclaimed by local residents for gardening, food production or another purposes according to their local needs.

Shared public spaces of neghbourhood scale can keep sports facilities which are already there, but could be enriched with extra public functions.

The line along the main street, where tram is passing, could be used also by non-locals, as jobs, as well as retail and recreation would be introduced in new infill constructions.

Due to the height of existing fabric new constructions should only be low-rise. Houisng can only be set on the northern part of each plot, in order to prevent it from shadows from existing buildings.

Actors: the city government, transport company, local residents, individual entrepreneurs.



Nizhegorodsky district. Location of future rail and metro station Map source: maps.google.com

Gate to the East

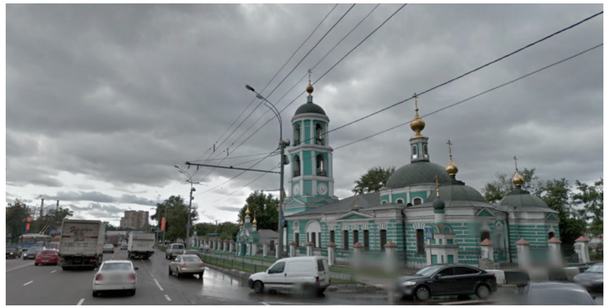
Context

The project is located in district Nizhegorodskaya, on the crossing of Moscow inner ring rail road, radial rail road and Riaznsky highway.

Currently this area is almost empty and hardly accessible. But in the future, it will become an important transport hub in the Eastern part of the city. Along with the ongoing project to reconstruct existing ring railroad for public use, there is also a plan of underground expansion, with the construction of the second underground ring and several new radial metro lines (see chapter „Dynamic context"). Accordings to the plans from the city, the crossing of second underground ring with the ring railroad will be situated exactly in the area chosen for the third case study.

It is possible to suggest that construction of a new transport hub will be followed by the emergence of high density business district around it.

The goal of the project is to demonstrate how to integrate large scale infrastructure and new business district into surrounding urban fabric, in a way that it would not become another enclave in the middle of nowhere, but would work for the city on local scale, facilitating regeneration of the depressed surroundings.

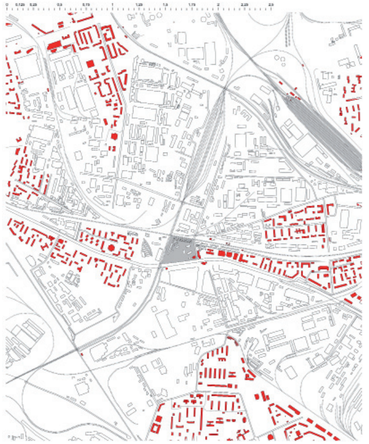


Church of Trinity in Karacharovo
Image sources: maps.google.com

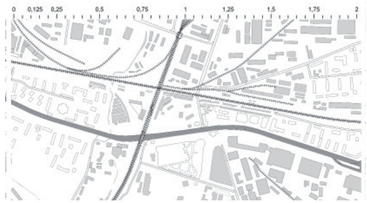
Shopping mall „Gorod" and „Auchan"
Image sources: maps.google.com

Raizanskoye highway
Image sources: maps.google.com

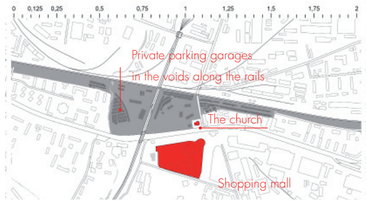
Parkings and car services next to railway
Image sources: maps.google.com



The square (in grey) as a meeting point
of five residential districts (in red)



Borders: two railways and one highway



Local centralities (in red) and voids (in grey)

Analysis

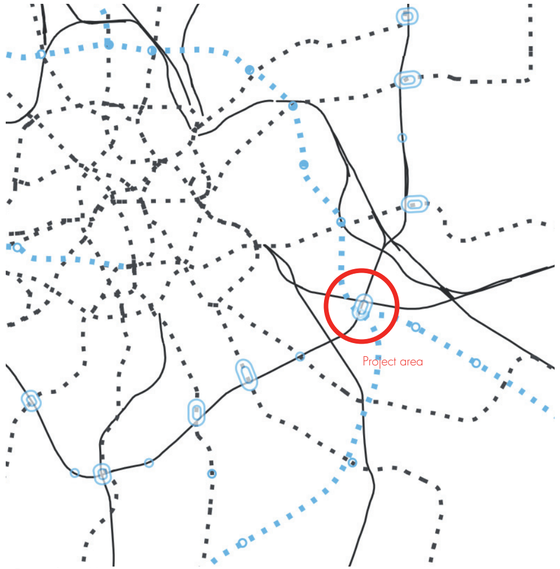
The square limited by two railways and one highway is located in the meeting point of five residential districts and of several industrial zones as well. If transformed, it could not only become business hub on of a global scale, but also local center which connects togetherthe chunks of residential fabric.

The residual spaces of the rails serve as voids, where private parking garages are and car services are located.

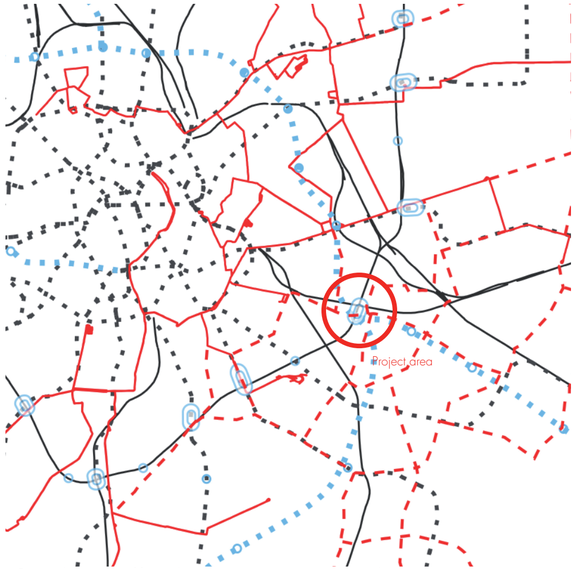
There are two centralities on the chosen area area. The first one is a shopping mall which is globally connected with the surroundings by the highway. The second one is an old church. Surrounded by the highway and large empty spaces it does not work as focal point on the territory and stands separately from its context.

With regards to the dynamic context, in the future new fast infrastructures will come to this area. It will become extremely important on global scale. Nonetheless, to make a place meaningful across all the scales, not only shift from fast to fast must be provided, but also a possibility to shift from fast to slow infrastructure.

On city scale this is made by integrating existing slow tram network into the fast public transport networks. On a project scale, it is shown how the place works when two, fast and slow infrastructures meet.



Existing fast public transportation
and city plans for its expansion



Proposed integration of fast and
slow networks through the expan-
sion of existing tram system

Legend
Existing public rail network
Existing underground network
Existing project of uderground expansion
Existing tram network
Proposed tram network
Existing project of TOD stations

Phase 0: borders,voids and centralities

Phase 1: New railway station should be oriented towards the city and react on existing centralities

Phase 2: Highway can be partially slowed down. Tram lines should connect the station with the surroundings.

Phase 3: Configuration of the new square should react on the existing centralities and reinforce interelations between them, and between the centralities and the city.

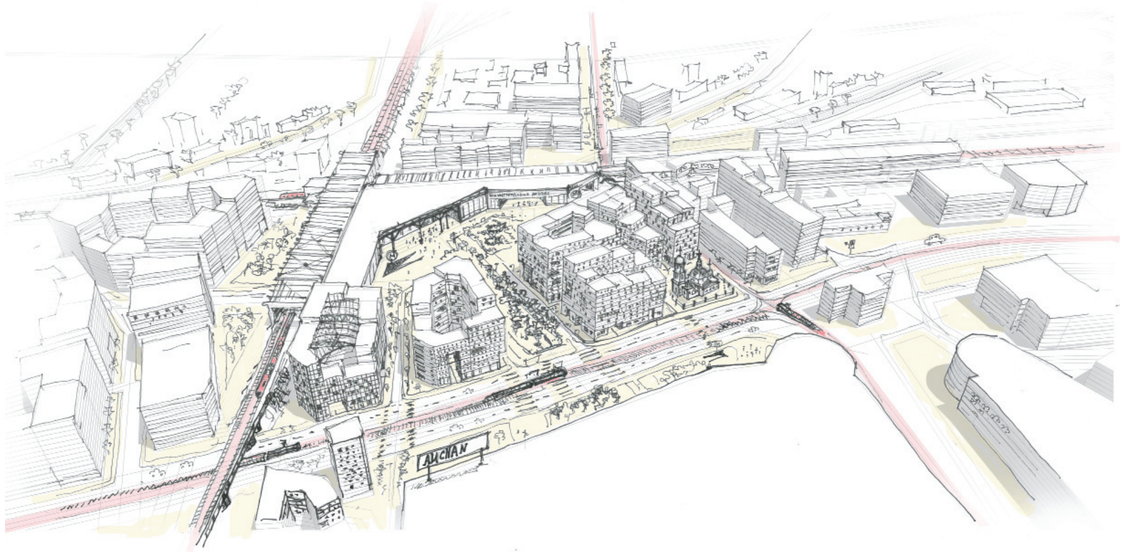
Intervention

The composition of the new station should react on exitsing anchor buildings. It also has to be permeable in order to connect fragments of urban fabric from two sides of the railways.

The highway can be partially slowed down with the introduction of the tram lines. Several multi-storey parkings would provide the possibility to shift from the highway to fast public transport, in order to unload from cars congested areas within the Third Ring (city center).

Lastly, the station area can be intensified along the lines connecting existing (shopping mall and the church) and new (railway station) centralities.

Network of public spaces. Interior and exterior public spaces are integrated into one continious system



Demonstration

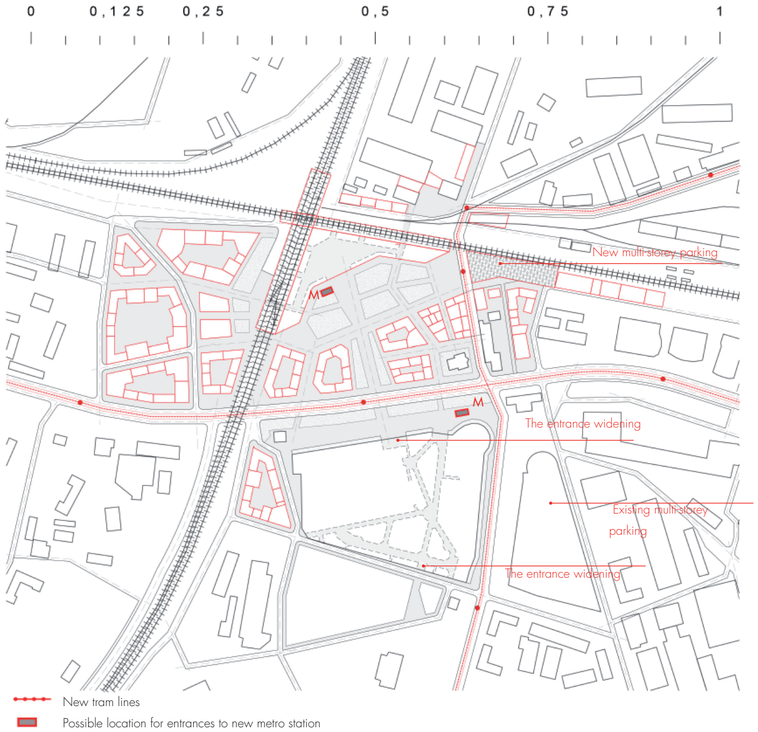
In order to integrate large scale anchor buildings (shopping mall and the station) in a surroundings, their interior public space should be organically connected with exterior public space.

The station hall (with entrances from three sides), big station square, small pocket square of the church and inner public space of the shopping mall would work then as one continious system of public spaces.

Though inner public space in the shopping mall is already constructed and has one main entrance from the side of the highway, it could be transformed with the widening of the entrances from the South, in order to increase its permeability and possibly attract clients with cars, but also locals from surrounding neighbourhoods.

New constructions on a station square would mainly host business functions with ground floors used for retail and recreation functions.

Actors: the city government, transport companies, shopping mall authorities, real estate developers



Strategic plan for industrial territories, mobility and public spaces

Principles developed in each of three case studies can be implicated in the areas with similar conditions.

As a result they would shape three interconnected corridors of three levels of scale and different degree of mixity between production and inhabitation, interconnected horizontally and integrated vertically.

Corridor 1 (Productive supervillages)
Production areas on industrial platforms connecting neighbourhoods

Corridor 2 (human scale neighbourhoods)
Local centers in dormitory districts

Corridor 3 (Gates to the East)
Integration of productive landscapes into global processes on city and metropolitan scale.

Strategic plan for industrial territories, mobility and public spaces

Reflection

Urban fabric transformation: before

Urban fabric transformation: after

Is it possible to imagine that by shifting attention to one of the most deprived parts of the city, we can change the way how the whole metropolitan region operates?

There can be many solutions, and proposed one is not the only one possible for the future city of Moscow. Yet, if we remember, how important industrial areas were in the past, we can see how many potentials for the city regeneration they carry. If productive landscapes are well connected with the city and with the metropolitan area, then not only residents of the surrounding neighbourhoods, but all the city users and everyday migrants from the region can benefit from it.

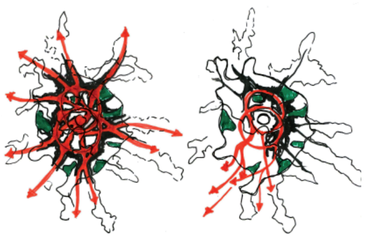
When dealing with metropolitan area of Moscow, It is important not to reinforce the radial-concentric structure of the city: introduction of the new rings and radials would only reinforce extreme hierarchy of existing system. Metropolitan area would keep growing spontaneously, and the city would expand in scale. Even if the city center would enlarge and cover the next belt of centralities (industrial belt), the periphery would expanded as well, remaining completely dependent from the center. The system would reproduce itself, and existing problems would not be solved, but would be transferred to another level of speed and scale.

There are plans of another way of the city expansion, and their possible consequences deserve to be discussed. A new plan of the Greater Moscow was issued in 2012, and administrative boundaries of the city officially increased two and a half times towards the South-West. The claim of the new plan for the city expansion is to decentralize Moscow, to shift the administrative core from the inner city, to create new urban centers with jobs, to provide areas for housing construction and to reduce the traffic congestion in the city. Presumably it will never be fully realized, as the attempts to create polynuclear territories from the scratch usually end up in failure.

Nonetheless, the tendency to invest in the South-West has already established. Existing plans for the undeground expansion clearly reflect on this model: major metro line extensions are designed in the South-West of the city, while Eastern part is meant to be served mainly by reconstructed ring rail road. As a result, we can suggest, that even if the Greater Moscow will not be built, the conflict between more successful Western part and more segregated Eastern part of the city will be reinforced in the future.

On the other hand, when studying the Moscow metropolitan area, one can find, that there is a latent possibility to overcome the radial-concentric anatomy of the city. As the location of the industries traditionally gravitated towards the East (due to the wind direction), this factor influenced the urbanization patterns on the metropolitan scale. The most urbanized territories adjoining the city are situated to the East direction and shape bundles along existing highways and railways. Former academtowns of Korolyov, Reutov and Ramenskoye are also located to the East from the city. So, if the existing ring system are not paralyzing the healthy operation of the Metropolitan area, the urban area could develop more coherently towards the East, where the most population is living.

If the point of attention is shifted to the Eastern bundle of industries, if the integration of fast and slow infrastructures is provided, there is a chance that the new center could bring more benefit to the whole metropolitan area, than the old city core or another ring of centralities around the center or expansion to the South-West.



Possible scenario zero:
Reinforcing of the ring system and expansion to the South-West

The strategy:
Rehabilitation of industrial territories, shifting the center towards the East and integrating fast infrastructures in the local fabric would contribute to more even development of the territory and possibly involve regeneration of the „academ" towns as extra centralities on the metropolitan scale

The case of Moscow is very complex, as its extreme dominance over the rest (the center over periphery, the city over the region, city over the rest of the country) is unprecedented. But it is crucial to be able to understand the city not only as a collection of problems, but also as a collection of possibilities.

One of the main issues of the post-socialist cities is an enormous amount of open space (the direct result of the soviet planning in the context of the absence of land values). But from the other hand, large amount of voids within the urban fabric provides a great opportunity for the modification of the city without the need to demolish existing urban structures. The process of intensification of the existing urban tissue can happen without gentrification, which is usually a critical side-effect of the intervention into an active urban environment.

Secondly, specifically soviet planning phenomena can be observed in the city of Moscow: population density which increases from the center towards periphery. There was a general scheme of constructing soviet cities, where large industrial belt was planned around the city center and then surrounded by densely populated dormitory districts. Consequently, we can imagine that if new uses are brought to industrial platforms, they would be actively exploited, - as the people already live in the proximity to industrial belt.

With the certain level of generalization, we can say that even the scale and the size of Moscow as a capital city is not comparable with any of the post-communist cities, the way it was constructed through soviet and post-soviet history is very similar to them. The planning principles of integrating transport infrastructures across the levels, transforming public space and dealing with the industrial heritage can be applied to the cities of post-socialist block. Nevertheless, the meaning of the study of particular historical context of each case should not be underestimated. Even though the technological progress and political conditions shaping these cities through history are comparable, their context is always unique.

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