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REDEFINING THE BALTIC WAY

EXPLORING OPPORTUNITIES TO CONSOLIDATE THE STRUCTURE OF PANEVĖŽYS



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Redefying The Baltic Way

Exploring opportunities to consolidate the structure of Panevėžys
MSc thesis

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Delft, June 2013

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INTRODUCTION

Since 1990 urban changes in Lithuania that were brought by the collapse of communist regimes in the former socialist countries were very intensive due to the fact that they comprise two simultaneously running transformations. One is the complex shift from an authoritarian, non-pluralistic political system to a democratic and pluralistic one and from a centrally planned economy to a market economy. The other changes are brought by globalization processes (Musil, 2005). It has been a challenging period of political, social and economic reforms that had similar patterns in all post-socialist countries and it had a particular impact on the spatial organization of cities.

A post-industrial city of Panevėžys, the fifth largest city in Lithuania is put under scrutiny as a post-socialist city. Decentralization, suburban growth, automobilization, social stratification, underdeveloped inner city areas are just some of the interrelated present processes and trends that situate Panevėžys within the context of post-socialist urban transformation next to the cities in Central and Eastern Europe.

Moreover, due to its' expansive development from a compact structure towards and increasingly dispersed one and shrinking population, Panevėžys is becoming more expensive to maintain. There are many signs that the majority of urban changes taking place since the early 1990s are moving the post-socialist city away from sustainability (Tosics, 2004).

A 'decline paradigm' must be considered, where the focus could be based on redeveloping inner city areas, cost-efficient stock development, revitalization, and qualitative development (Müller and Siedentop, 2003). The topic is important to address because 'the patterns of spatial organization, which are being established during this fairly limited but critical timeframe of a post-socialist transformation, are likely to set the course of the future development of CEE cities for a long time' (Stanilov, 2007: 5). Therefore, it is a good opportunity to be critical about the most recent past and the future it is about to bring and start evolving ideas for a sustainable alternative. This is precisely the aim of this project.



1. WORKING FRAMEWORK

- Motivation for the study
- Study approach
- Social and scientific relevance
- Problem definition
- Aim
- Research questions
- Research and design tools
- Theoretical framework

This part of the booklet will explain the framework of the study which was used to develop the project. The main outline of the thesis is introduced by brief descriptions of study case, basic structure of the project, social and scientific relevance, problem field and research approach.

1.1 Motivation

Motivation for this study could be seen as a threefold aspect, which includes elements of academic research, professional interest and personal knowledge of the study case. This thesis could be understood as a momentum of knowledge generation where these components are synthesized by making advantage of each other.

Firstly, I find the academic environment of the Department of Urbanism at the TU Delft an engaging academic environment that enables to establish international perspective towards the subject of research. Secondly, this study is a potential insight to my professional interest in urban transformations and relation between societal and spatial functions, fields of their most active interaction and friction. Finally, in the aspect of personal knowledge I refer to the general knowledge of the study case with its complexity.

The case is motivating because the city is in Lithuania which is a relatively small country where trends of globalization are particularly important in relation with the growth and performance of the local economy and urban form (Hamilton et al., 2005). Studying the context of a small country could provide a clear framework how to approach the trends of post-socialist transformation and globalization in a context of higher complexity. Approaches developed in the thesis might be applied to other cases in cities in Central and Eastern Europe (CEE). These approaches are relevant because more than two thirds of the 300 million people of the region are living in cities and towns (Stanilov, 2007).

1.2 Study approach

This master thesis is a research, planning and design project in the academic field of urbanism. Research is focused on the post-socialist city in transition of which Panevėžys is the case study. The main interest of this project is the potentials of transformation from the current transitional state to sustainable structure in the future. With established awareness on this larger task at hand, focus is brought on problems of brownfields, underdeveloped inner city areas and socialist housing estates (Kessides, 2000, Musil, 2005, Stanilov, 2007, Sykora, 2006, Baum and Christiaanse, 2012).

In order to approach the issue of transformation, research is focused on three main stages, the pre-socialist, socialist and the post-socialist city. Transitional phases from socialist to post-socialist as well as from post-socialist to future (post post-socialist) city are the main subject of analysis. The post-socialist city and present trends are criticized as unsustainable development (Tosics, 2004) while some of the present structures and features of the historical and socialist cities might be seen as potentials (Tosics, 2004, Sykora, 2006, Hamilton et al., 2005). Challenge is taken to identify and find ways to employ the potential legacy of the historical and socialist cities that could be integral to the future vision of a sustainable city.

The project objective might be resolved into three constituent parts,

referring to the main elements of the project, particularly to research, strategy and design. The main objective of the research is to understand the characteristics, principles and effects of the urban transformation that has been taking place in the post-socialist city of Panevėžys. Moreover, it aims to understand the role of historical and socialist structures in relation to the larger urban development problem at hand. In this way research part would facilitate strategic planning with a goal to establish ways for a more sustainable urban structure.

1.3 Social relevance

In the context of post-socialist transition importance of urban planning has been partially neglected by many governmental institutions of different levels (Stanilov, 2007). The situation is common to the case of Panevėžys. There has been a lack of clear visions and strategic planning concepts for the city. Consequently urban development has fallen under strong influence of neo-liberal market conditions that ignore long-term effects and wider interests of society.

As a result, series of problems emerged: issues of traffic and parking, maintenance of housing and vacant industrial stock, public space and infrastructure, provision of public services and facilities, socio-spatial stratification. A lack of funding possibilities, shrinking population and urban sprawl are convincing reasons to research methods to do 'more with less'.

1.4 Scientific relevance

Recent decade has shown and increasing academic interest in the post-socialist transition. This has been manifested in fields of social, economic, cultural studies as well as urban studies (Andrusz et al., 2011, Juskevicius, 2006, Kessides, 2000, Musil, 2005, Stanilov, 2007, Sykora, 1999, Tosics, 2004). This master thesis could be seen as a continuation of the discourse set by previously mentioned authors, as well as previous master thesis studies on the post-socialist transformation in Lithuania (Buinevicius, 2011, Jonauskis, 2010, Muliolyte, 2010). The project is completed by applying the most recent knowledge in the research and analysis of particular case study of Panevėžys, which is to a large extent a representative of many post-socialist cities in the CEE countries, and particularly Baltic Countries.

The knowledge of the topic is extensively analysed in the post-socialist transformation literature. However, there is a gap of applicable practical methods and innovative solutions for planning a shrinking city in CEE countries. Instead of strategies based on massive growth of a city that is unlikely to happen, the main concern of the thesis will be on the consolidation of the existing structure to achieve better operations and more responsive services. This way, the master thesis will contribute to the existing knowledge of the topic.

1.5 Problem definition

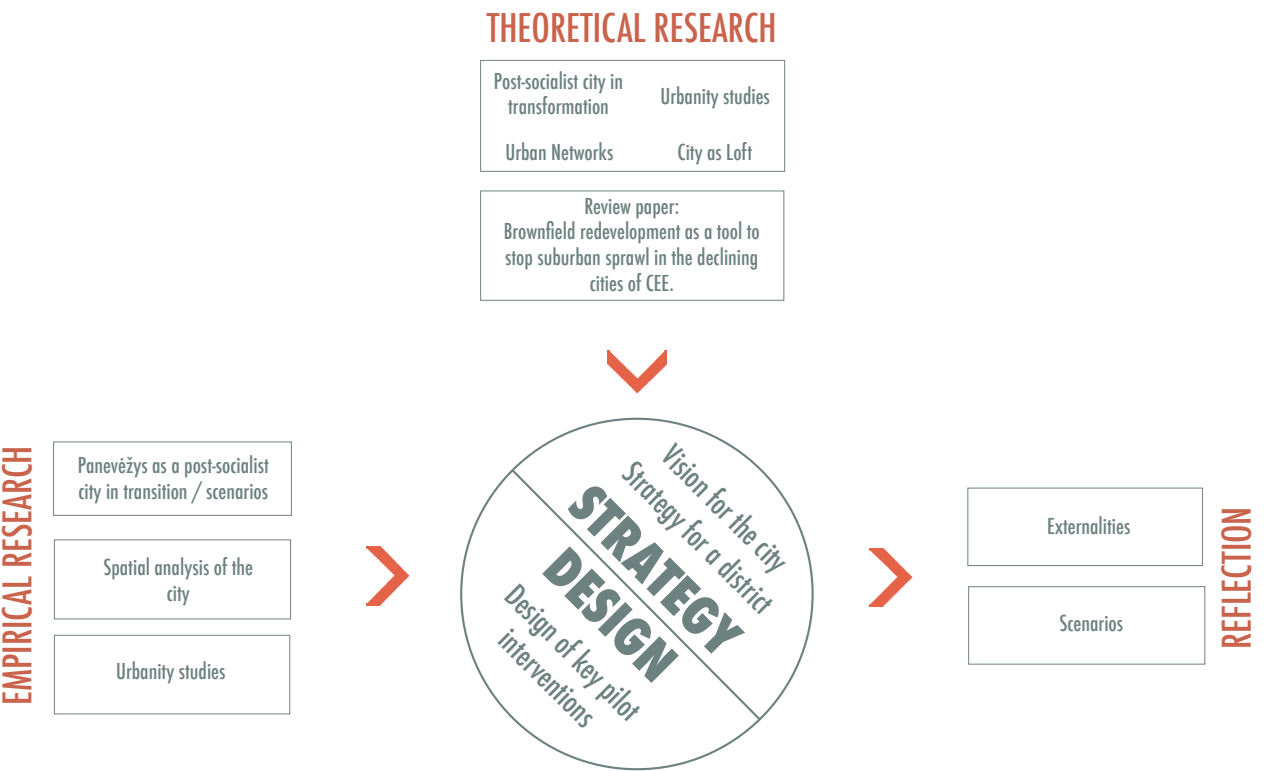
Smaller cities of Lithuania, where industries were declining due to the shift of the market, are experiencing declining population, low investment rate and slower pace towards a service based society. In the case of Panevėžys, creating economic development opportunities became the overriding concern and the city started integrating into national and international economic network. However, national policy has followed blindly this agenda, committing a majority of the limited resources to the implementation of such projects without much reference to local context and needs. The improved accessibility to economic networks within metropolitan area had a significant impact on the rearrangement of urban activities. Land along these corridors is set aside for the construction of new shopping malls, production facilities, distribution centres and low density housing areas. These processes support the forces behind suburbanization and are not altering potential negative social or environmental impacts.

From high-density, mono-centric settlements, dominated by high-rise public housing and communal modes of transportation, the CEE cities are being transformed into sprawling, multi-nodal metropolitan areas reaching extreme levels of privatization of housing, services, transportation, and public space (Bodnar, 2001). Panevėžys keeps on expanding and most of the energy of the new growth has been transferred to the suburban outskirts, where new shopping centres, office parks, and clusters of single family residences have popped up, leaping over the belt of socialist housing estates. Traditionally concentric development

is shifting towards a more linear one and a new local centre is emerging in the Western side of the city. This new centre includes functions like commerce, retail, entertainment and service. New family houses and an industrial zone are being developed there.

The rising value of real estate in the city centre is one of the factors driving the boom of residential and non-residential construction at the urban periphery. Other determinant forces include the restitution of land, amount of open territory in the periphery, the relaxation of land development controls and the establishment of an open land market' (Stanilov, 2007: 179). Suburban sprawl is leaving an underdeveloped urban fabric in the historical inner city areas and an equally worsening quality of the built environment in the socialist housing estates (Hamilton et al., 2005). The lower class segment has no possibility to access better housing while the upper class segment of the population has opted for locations in gated low density residences beyond the urban edge (Sykora, 2006).

A major role in the process of non-residential decentralization has been played by the locational preferences of large local and foreign investors. The majority of their capital has been directed primarily to large-scale projects in the urban periphery because of bigger territories and cheaper land, thus altering the socialist tradition of concentrating non residential urban functions in the city centre. With their decisions governed by the logic of chasing the highest profit, investors have shown little interest in developing close links with local communities undermining the prospects for sustainable future (Robinson, 1996).



Conceptual scheme: scales in the graduation project, source: author's image.

If the present trends will continue, all services on a per unit basis will become more expensive and communal transport will not be supported by enough patronage. The viability of the city centre and the socialist housing estates will decrease, resulting in their physical deterioration. The industrial brownfields are not going to be redeveloped, leading to spatial fragmentation. Increasing social stratification will lower the quality of life of lower-income class. The lack of amount and variety of high quality places will result in loss of urbanity. Therefore, the city will become unattractive for new investments and the population shrinkage will continue.

1.6 Problem statement

Expansive urban development in Panevėžys is **not leading** towards **socially** and **environmentally sustainable future**.

The current urban development is a threat to:

1. Structural efficiency of the city:
loss of urbanity; increasingly expensive to maintain urban structure with shrinking population; decreasing efficiency of public transport; lack of complementarity of functions.
2. Social sustainability:
diminishing access to jobs, housing & services for lower class residents; social stratification and fragmentation; loss of private entrepreneurial profit due to decreased urban density in central areas.
3. Environmental sustainability:
increase in the levels of air and noise pollution; mono-functional territories; loss of open space; spatial fragmentation; derelict brownfields.
4. Planning framework:
lack of cooperation between institutions responsible for planning in different scales; economic relations are emphasized over other issues; insufficient planning rules are still based on land use planning instead of strategic planning.

Values of social sustainability:

1) Social coherence in and between all the parts of the city; 2) livable and vital living environment; 3) equal access to facilities; 4) high quality of individual and communal life.

Values of environmental sustainability:

1) Low emissions through mobility patterns; 2) Efficient use of natural assets (land and natural surroundings).

1.7 Aim and Potentials

'A great opportunity for maintaining the vitality of inner city areas and for improving accessibility to shopping and services for all citizens, while reducing traffic congestion, has been offered by an unlikely ally of large-scale retail developers and investors – the derelict

industrial sites present in many parts of the post-socialist city' (Stanilov, 2007: 93). The exorbitant amount of urban industrial land inherited from socialist times in Panevėžys has presented an opportunity for absorbing new development, re-knitting the fragmented fabric of the post-socialist city.

Brownfield sites in the post-socialist cities have great potential as land reserves for future urban development. The fact that they have not been redeveloped yet is not necessarily a bad thing. With the 'Wild East' phase of urban development approaching its end, one can hope that the post socialist cities would be better prepared to use these precious land resources more wisely (Dingsdale, 1999).

The aim of the study is to explore the possibilities to consolidate the city structure of Panevėžys. Opportunities to steer some developments to brownfields, socialist housing estates and unused territories in the inner city will be researched in order to achieve more efficient operations and more responsive services.

1.8 Research questions

Main research question:

How to consolidate the city structure of Panevėžys?

Sub-research questions:

1. Analytical research of Panevėžys as a post-socialist city:

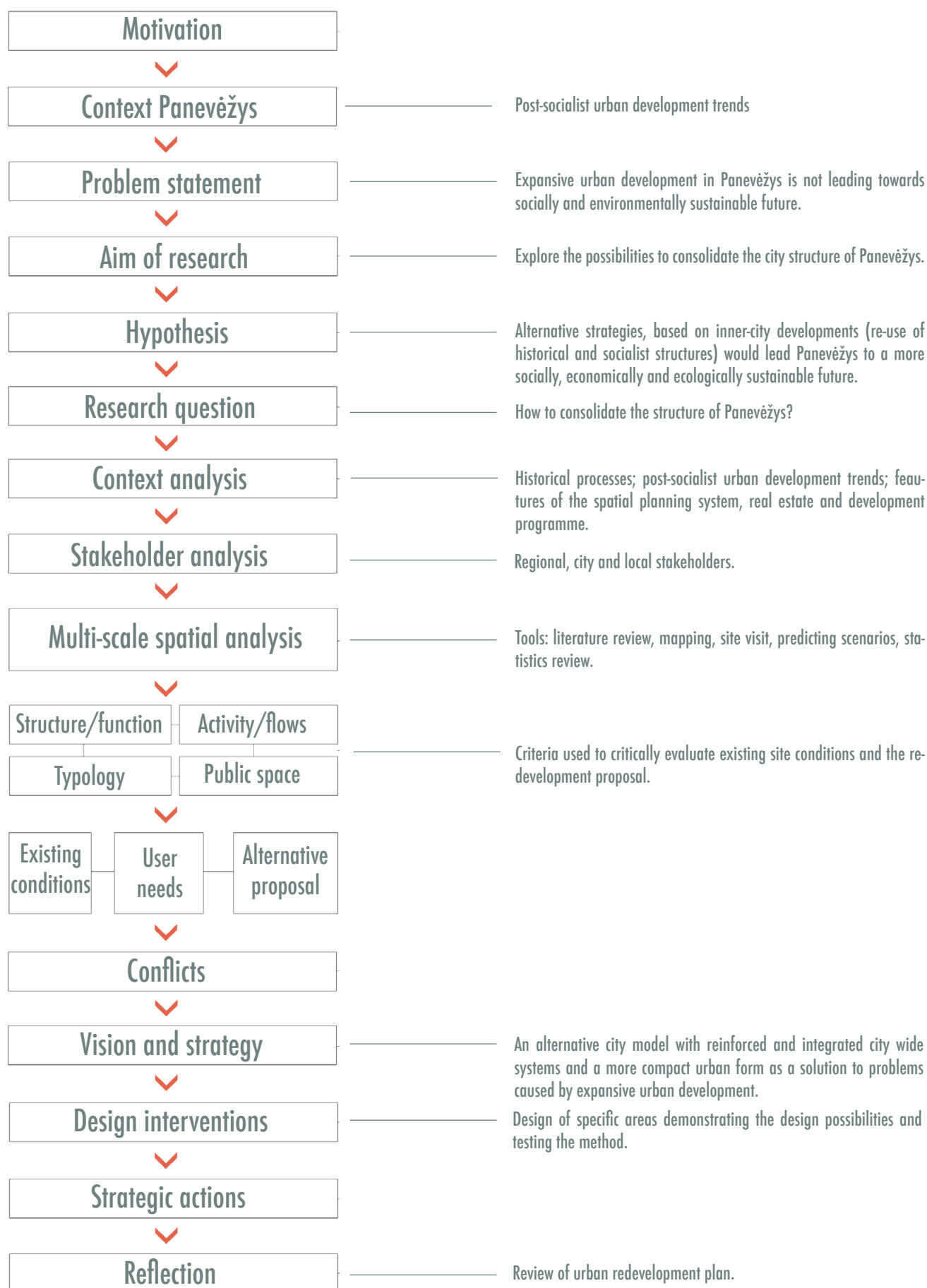
- What are the current demographic, economic, ecological, energetic trends in the region of Panevėžys?
- What are the main forces supporting suburbanization?
- What is the urban development programme?
- What is the role of Panevėžys in the regional context?
- What are the main structural and typological elements of Panevėžys?
- What are the main typological areas in Panevėžys?
- Where are the biggest mobility flows?

2. Vision of Panevėžys as a sustainable city. Possible relation to the historical and socialist city structures:

- What are the required qualities for an alternative vision?
- What could be alternative development models for Panevėžys?
- What elements of the city should be retained and enhanced to meet sustainability goals?
- What could be the possibilities to shift development towards a more sustainable urban form and structure?
- What are the possible strategic intervention areas?

3. Urban transformation and interventions. Possibilities and principles:

- What could be the possibilities to alter mobility patterns?
- What are the potential ways of restructuring socialist housing estates, abandoned brownfields and undeveloped central areas of the city?
- What strategic actions should be taken to achieve that?



Conceptual scheme: methodology of the thesis, source: author's image.

1.9 Research and design tools



Literature review

- _ Changing role of Panevezys during the transformation;
- _ Main development trends;
- _ Alternative models of development.



Observation

- _ Changes in urbanity;
- _ The qualities of different morphological areas.



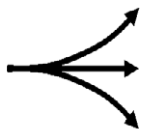
Mapping

- _ The role of Panevezys in the national and regional networks;
- _ The evolution of the structure of Panevezys before, during and after socialism;
- _ The functional and spatial model of Panevezys;
- _ Different morphological typologies of different areas and their qualities;
- _ Major activity areas;



Drawing and modelling

- _ The possibilities to improve the functional efficiency by redeveloping brownfields and unused territories;
- _ The possible strategies to shift urban development towards a more sustainable urban form and structure;
- _ Development of strategies and pilot projects.



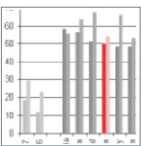
Predicting scenarios

- _ Changing urbanity. Prognosis: threats and potentials;
- _ Possible scenarios of urban development of Panevezys: the threats and potentials.



Case studies

- _ The global planning and design experience in the field;
- _ The problems of translating other projects to the case of Panevezys.



Statistics

- _ Main trends (demographic, economic, ecologic, energetic);
- _ The qualities of different morphological areas;
- _ The major activity areas, their functions and programme.

1.10 Theoretical framework

The main line and the core of theoretical framework focuses on the post-socialist city in transition countries and particularly Central and Eastern European (CEE) countries. Literature includes studies on post-socialist city (Andrusz et al., 2011, Hamilton et al., 2005, Müller and Siedentop, 2003, Musil, 2005, Stanilov, 2007, Sykora, 2006, Tosics, 2004). This part provides with better recognition and evaluation of the context and the problem field as well as an input to formulate guidelines for the possible alternative development directions. Literature on the post-socialist city brings forward problems in relation to current transitional phase as well as the socialist legacy.

The second line of theoretical framework is focused on theory in relation to urbanity: urban concentration, density, diversity and vitality (Jacobs, 1961, Gehl, 1987); concept of the Compact City discussed by (Jenks et al., 1996, Williams, 2000, Dieleman and Wegener, 2004) and city as a loft (Baum and Christiaanse, 2012, Zandbelt and Berg, 2005). As part of this theoretical line, focus on the social aspects of urban intensification and brownfield redevelopment is studied.

conditions that support the inner city brownfield redevelopments in CEE countries and forces and roles of public and private initiatives that lie behind successful examples of these processes.

The literature on the trends of post-socialist city structural transformations related to suburban sprawl and brownfield redevelopment will be reflected (Andrusz et al., 2011, Hamilton et al., 2005, Kesides, 2000, Müller and Siedentop, 2003, Musil, 2005, Stanilov, 2007, Sykora, 2006, Tosics, 2004). The focus will be on reviewing the main forces that affect suburban sprawl or inner city development and reviewing recommended guidelines of spatial planning in a context of a 'shrinking' post-socialist city. Later, the process of brownfield redevelopment in an inner city area will be illustrated by examples in Leipzig (Dressler, 2005, Rink et al., 2011), Dessau (Dressler, 2006) and Brno (Jackson, 2007).

The conclusions will name the main spatial, functional conditions that support brownfield redevelopment, guidelines for strategic planning and a possible approach in relation with author's thesis.

Literature review paper

'Re-intensifying a post-socialist city. Brownfield redevelopment as a tool to stop suburban sprawl in the shrinking cities of CEE countries'.

Abstract:

Since the collapse of State Socialism 20 years ago, processes of liberalization, privatization and globalization have submitted entire national societies to the economic imperatives of an open market economy, often with dramatic polarizing effects on urban populations (Hamilton et al., 2005). From high-density, mono-centric settlements, dominated by highrise public housing, vast industrial areas and communal modes of transportation, the CEE cities are being transformed into sprawling, multi-nodal metropolitan areas reaching extreme levels of privatization of housing, services, transportation, and public space (Bodnar, 2001). Problems like social stratification, declining public transport and declining quality of inner city environment, increasing pollution are emerging. There are many signs that the majority of urban changes taking place since the early 1990s are moving the post-socialist cities away from sustainability. Moreover, 'shrinking' cities are becoming more expensive to maintain. A 'decline paradigm' should be considered, where the focus would be on redeveloping inner city areas, cost-efficient stock development, revitalization, and qualitative development (Müller and Siedentop, 2003).

The exorbitant amount of urban industrial land inherited from socialist times has presented an opportunity for absorbing new development, re-knitting the fragmented fabric of the post-socialist city. The main aim of the paper is to identify the main spatial and functional

2. TRENDS OF URBAN DEVELOPMENT

Trends of urban development

Historical evolution

Threats and forces of urban sprawl

Causes of urban sprawl

The following chapter will present the research part of post-socialist trends of urban development of Panevėžys. Topics relate to the research questions and gives insight to the main forces and factors that affect urban sprawl. Chapter analyzes the historical evolution; demographic, economic, mobility, suburban sprawl, ecologic and energetic trends; presents the situation of the real estate market and spatial planning system .



2.1. The Baltic way

Just before 1990, people were creating a synergy in the drive for freedom that united the three Baltic States. A human chain stretched between the three capitals of the Baltic States - Tallinn, Riga and Vilnius. The Baltic way was crossing the Panevėžys through the city centre, adding symbolic value to the area.



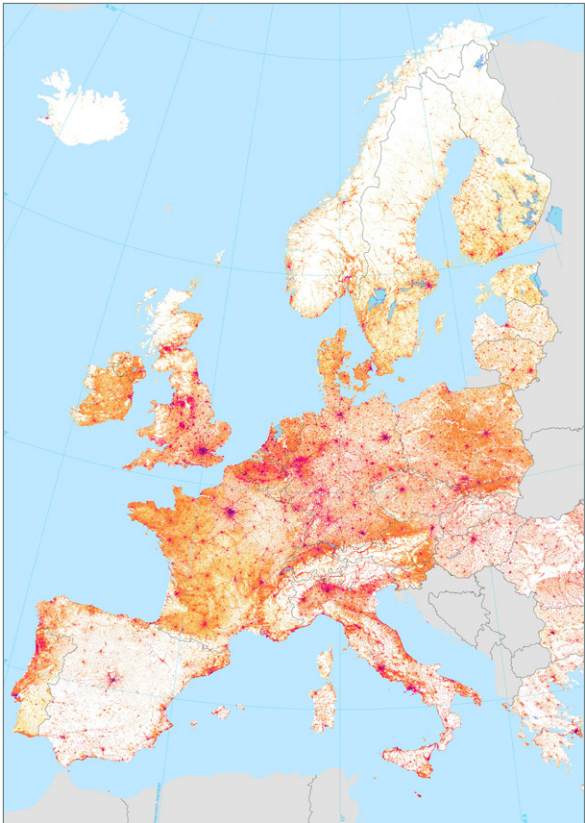
2.2. Geopolitical shift

In 1990, Lithuania declared independency from Soviet Union and the country was accepted to European Union in 2004. The position of Lithuania in political and economic networks has shifted radically. The transition between two ideological, economic and political systems that have different form of interaction between urban form, people and economic attractors is complicated and is not complete yet in Lithuania and in CEE in general (Sykora, 2006).

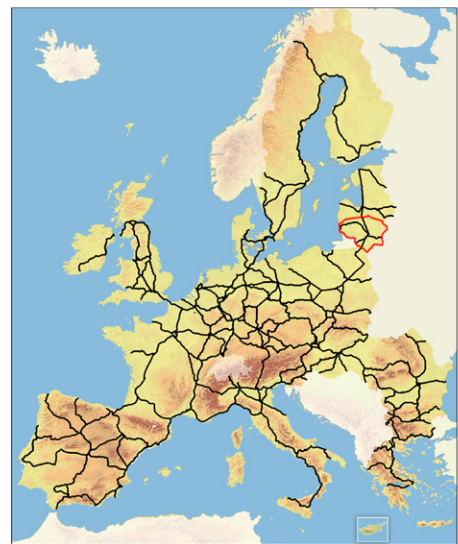
The Baltic states in Soviet Union were located at the Western edge. Lithuania had a strong orientation towards the central node - Moscow. The economic and political linkage from Klaipeda (the harbour in the Baltic Sea) was passing through the cities in central Lithuania towards the Russian cities in the East.

Presently, Lithuania is situated in the Eastern periphery of The European Union. The country is bordered with other members of The EU - Poland and Latvia. The increasingly important economic corridor from Helsinki towards Warsaw is passing Lithuania, enabling a more effective participation in international networks. The cooperation with the Eastern markets is declining.

Therefore, the economical and political cooperation of Lithuania has shifted from East oriented towards North and South-West oriented. This geopolitical change resulted in spatial relocation of some activities in the country. The new position of Lithuania, as a secondary country in European Union that borders with the Eastern markets, could be taken as an advantage in future urban developments.



Artificial land cover in the European Union, source: Eurostat.



Lithuania in European Union: <http://ec.europa.eu/transport/>



Lithuania in Soviet Union: www.lib.utexas.edu

ORIENTATION OF LITHUANIA HAS SHIFTED FROM EAST ORIENTED TOWARDS NORTH AND SOUTH-WEST ORIENTED.

2.3. Spatial model shift

The concept of a ‘group settlement system’ (a normative version of Christaller’s Central Place theory) was devised in the beginning of the 1960s in Lithuania. It called for a planned growth of administratively selected centres with the goal of eliminating existing social differences between territorial units (Juskevicius, 2006). Governmental officials decided which settlements were to achieve the status of first, second, or third level centres, which in turn were linked with the distribution of investment in services and industrial development (Musil, 1993). ‘No market based economic relations between cities were formed, which made the whole settlement network very vulnerable to system change’ (Stanilov, 2007: 30).



‘Group settlement system’ in Lithuania, source: Juskevicius, 2010

The end of regional and urban redistributive policies linked with growing political decentralization means that the cities depend more than in the past on their endogenous economic and social potentials, on their economic base and on the quality of their local authorities (Musil, 2005). Locations with advantages for reorganizing production, including concentration of capital, qualified labour force, and access to global communications, had much better chances for growth than older industrial centres.

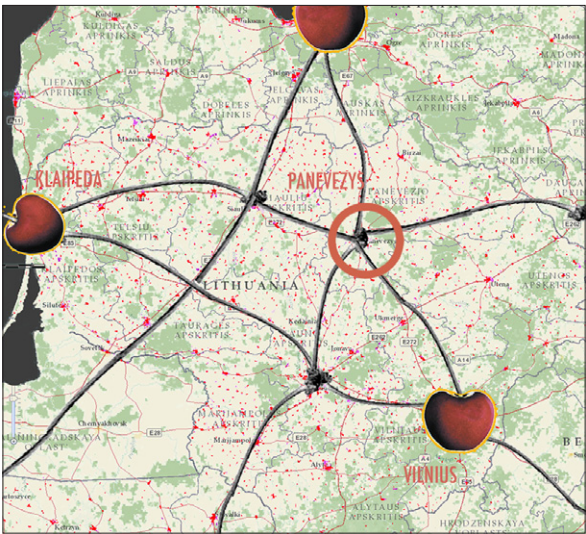


Interpretation: Lithuania as ‘peanut butter’, source: author’s image.



Economic growth if the Baltic States 2007-2013, source: www.eea.europa.eu.

The shift of spatial model is concluded in the interpretation schemes of ‘Lithuania as ‘peanut butter’’ and Lithuania as a collection of cherries. Presently, the territory in Lithuania is not being developed equally anymore and cities like Panevėžys are looking for new identity and economic opportunities.

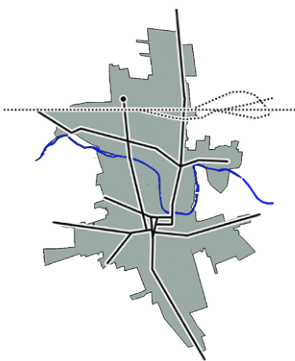


Interpretation: development in ‘cherries’, source: author’s image.

2.4. Historical evolution

Pre-socialist period

Panevėžys was established around five hundred years ago close to the curves of the river Nevezis. Until 1939 it remained a small town with some regional activities. It had an agrarian character with some industrial activities near the railway line. Most of the people lived in low-floor houses, several floor block-type districts were found in the city centre, where most of the services were located. The city structure is stretching North-South as more important towns that Panevėžys was trading with were Riga (North), Kaunas and Vilnius (South). The main axis that formed the city were the river, the railway, and roads that were crossing near the main market square.

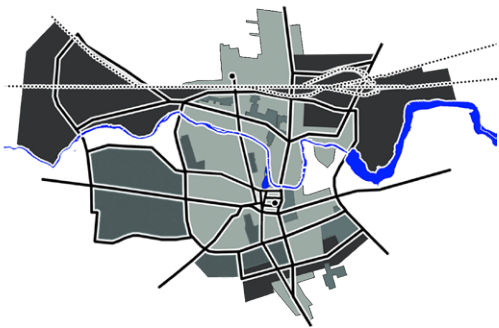


Scheme of pre-socialist structural model of Panevėžys, source: author's image.

26,000 INHABITANTS
AGRARIAN ECONOMY

Socialist period

During the socialism a rapid growth, based on industrialization, started. New factories of heavy industry (metal, oil, television devises, glass, concrete) combined with food reproduction facilities (spirits, sugar, agrarian and dairy product reproduction, linen) were established in a vicinity to the railway and the river. Around 100,000 new residents were inhabited in the socialist high-density housing estates. The city centre was the place, where services were located. The three types of areas were connected by public transport, which was used by around 90 % of all travels. The different functional zones were connected with a new ring-road. These functional zones were built according to zoning principles and remain monofunctional presently. New developments were very mechanical, designed purely for functional needs.

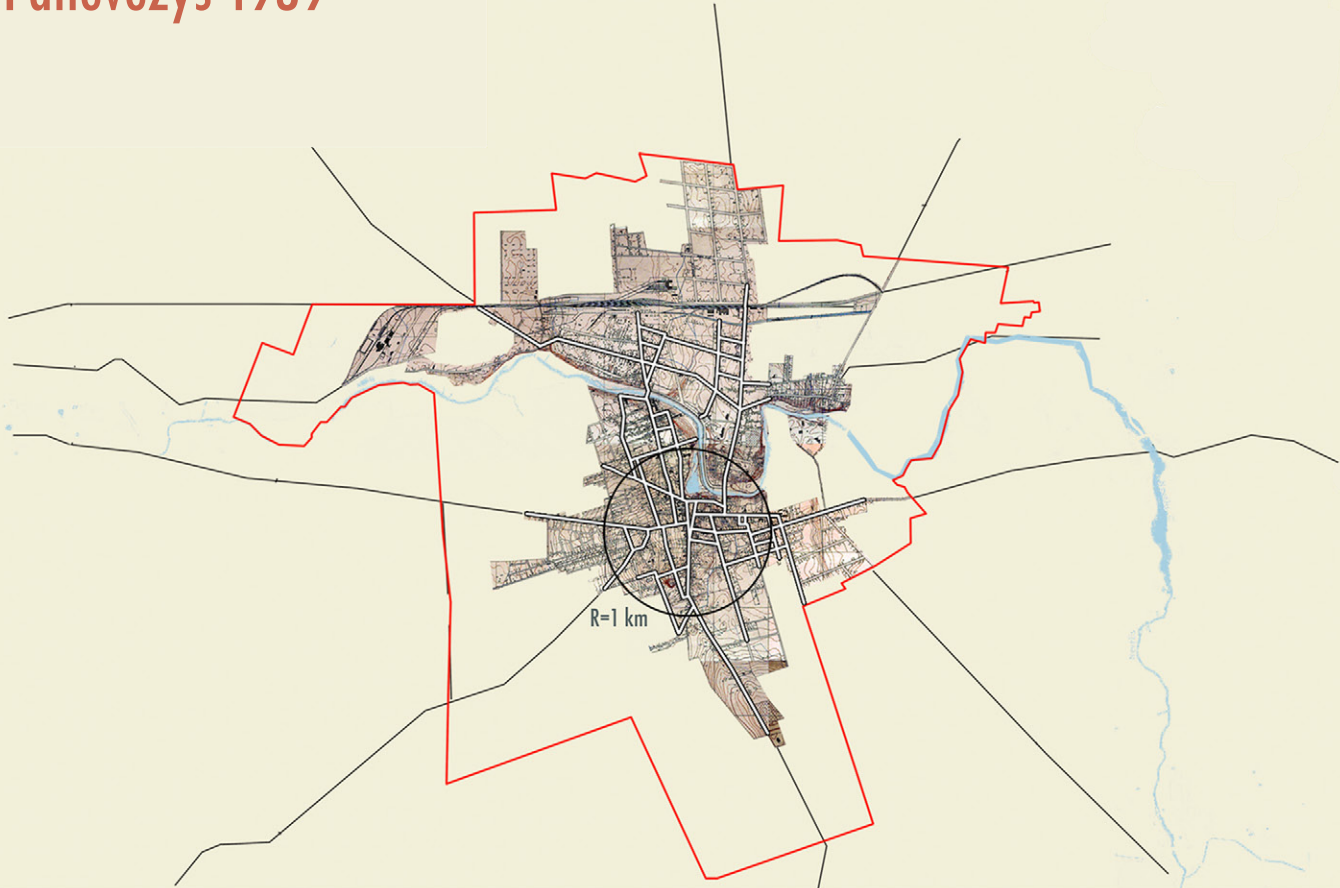


Scheme of socialist structural model of Panevėžys, source: author's image.

+ 104,000 INHABITANTS
INDUSTRIAL ECONOMY

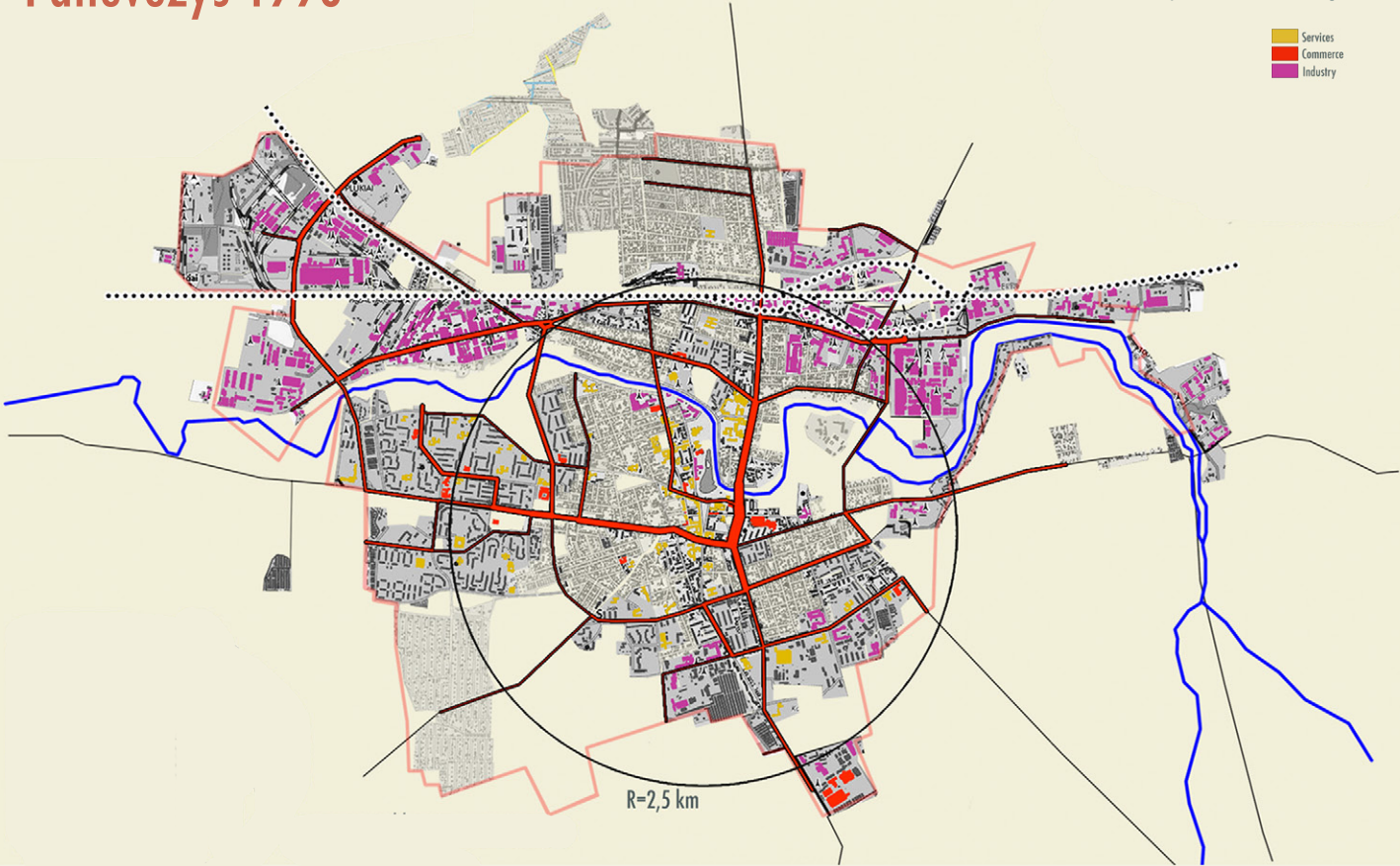
Panevėžys 1939

Pre-socialist structure of Panevėžys, source: author's image.



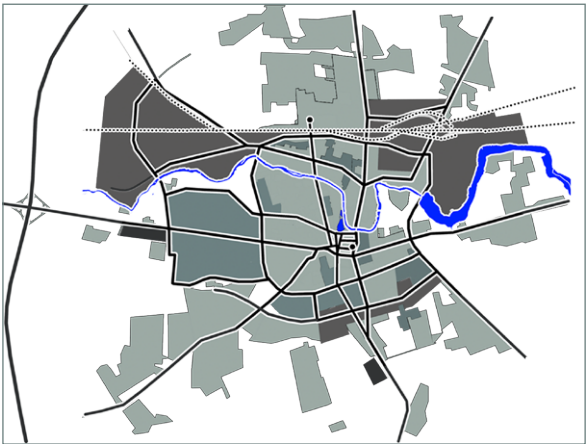
Panevėžys 1990

Socialist structure of Panevėžys, source: author's image.



Post-socialist period

In 1990 Lithuania declared independence. The centralized supply driven economy shifted to the liberal demand driven economy. The Eastern market, that the factories were producing for, blocked the local production. Many factories went bankrupt, also due to unavailability to modernize them for Western needs and level of competition. New service based companies are establishing in relation to new networks. The compact city structure started to spread through the region. New commercial centres were created close to the best accessible infrastructure (the international highway 'Via Baltica' was built in the vicinity of the city). The public transport system declined significantly because of rapidly rising automobilization. The inhabitants of the rising middle-class are leaving the overcrowded socialist housing estates and are moving to new low-density housing areas in the suburbs while a significant spatial and social fragmentation is seen in the inner city areas.

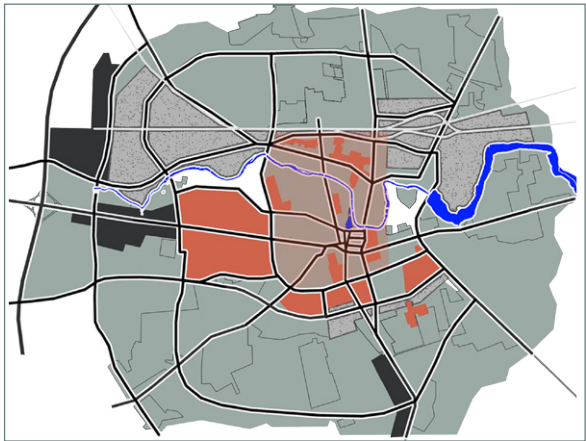


Scheme of post-socialist structural model of Panevezys, source: author's image.

**-30,000 INHABITANTS
SERVICE ECONOMY**

Planned future developments (2027)

The present planning system is generally permissive towards private developers. The land-use based planning is enabling new commercial, industrial and residential areas in the suburban outskirts of the city. New big infrastructural projects are already prepared for the expansion. The expansive structural development is getting more expensive to maintain by a shrinking population. Furthermore, these expansive developments are jeopardizing the viability of the central city areas and city-wide systems like public-transport, green structure and public space network.



Scheme of post-socialist structural model of Panevezys, source: author's image.

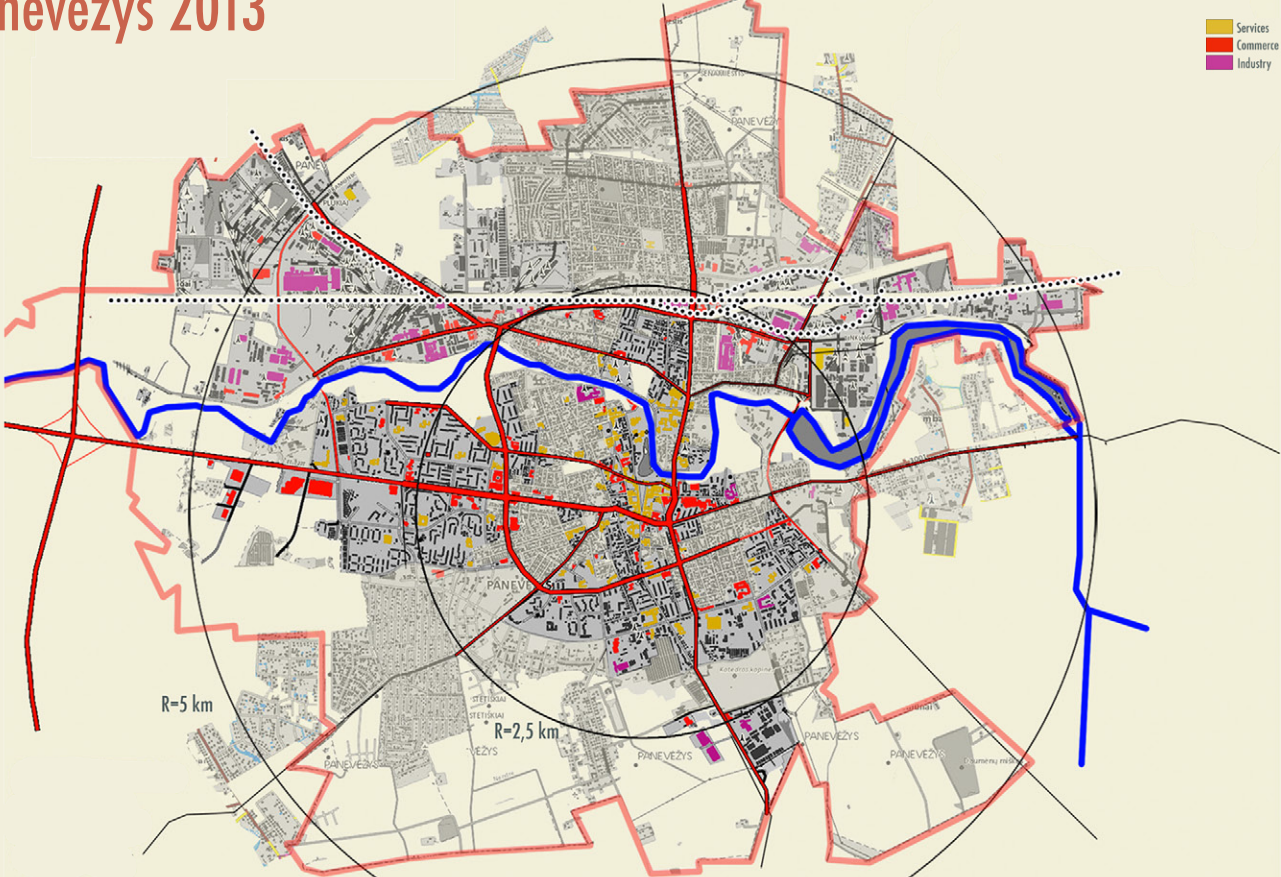
Threats of suburbanization

This kind of suburban development is already causing particular problems in Panevezys, which might become a serious threat in the future. Lack of infrastructure, daily services, basic facilities and public transportation is not only the problem of emerging suburbia and its residents, but on the larger scale of the whole city it is a potential environmental and societal threat in terms of pollution caused by dispersed traveling patterns as well as social segregation and loss of urban social life (Dieleman and Wegener, 2004).

**100,000 OR LESS INHABITANTS
SERVICE ECONOMY**

Panevėžys 2013

Post-socialist structure of Panevėžys, source: author's image.



Panevėžys 2027

Planned structure of Panevėžys (2027), source: reproduced from comprehensive plan of Panevėžys.



2.5. Threats and forces of suburbanization

During the transformation, creating economic development opportunities was the overriding concern, pushing all other considerations into the background. The main direction of urban spatial restructuring could be defined as a transfer of assets, resources, and opportunities from the public to the private realm. Cities that were lacking interest of private investors have set in a prolonged period of economic stagnation, declining population, environmental degradation and withdrawal of state funding (Bachtler and Downes, 1993).

The overly permissive attitude of local authorities towards new development echoed the philosophy of the state governments of encouraging new investments at all costs, with little concern for assessing potential negative social or environmental impacts' (Stanilov, 2007: 355). With their decisions governed by the logic of chasing the highest profit, developers have shown little interest in developing close links with local communities undermining the prospects for sustainable future (Robinson, 1996).

Main forces of the post-socialist development trends:

Geopolitical shift	>	Shift of spatial model
	<	
Polycentric urban system	>	System based on market forces
	<	
Compact city structure	>	Sprawling city structure
Industry-based economy	>	Service-based economy
Centralized 'top-down' planning	>	Decentralized, poorly coordinated, market-oriented planning
Growing population	>	Shrinking population
	<	

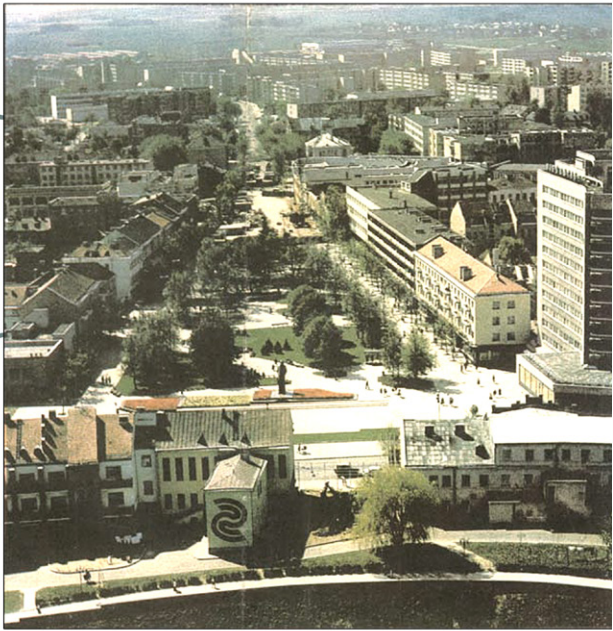
Conflict

Structural threats:

Loss of urbanity; increasingly expensive to maintain urban structure; decreasing efficiency of public transport and city wide-systems; lack of complementarity of functions; monofunctional zones.



Patterns of suburban development: reproduced from www.maps.lt



Compact city structure of Panevėžys, source: www.miestai.net.



Environmental threats:

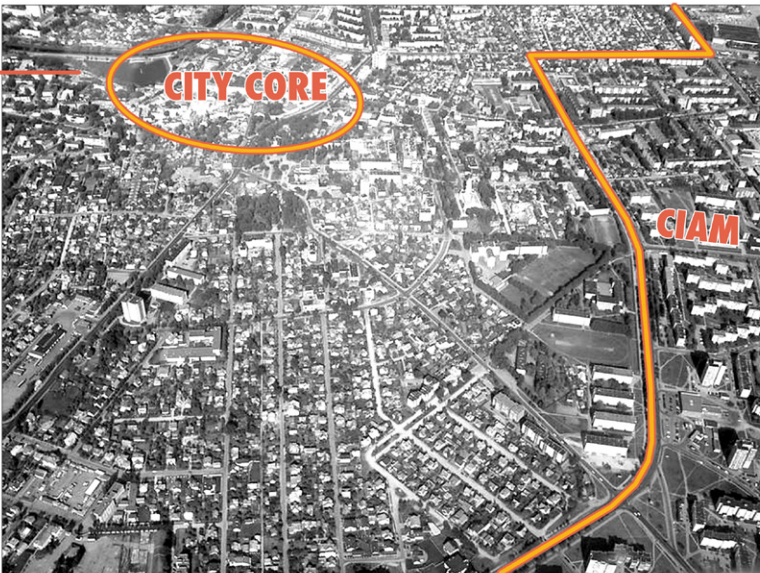
Increase in the levels of air and noise pollution; mono-functional territories; loss of open space; spatial fragmentation; derelict brownfields; unmaintained public space; overcrowding and decaying socialist housing.

Problems of the spatial planning system:

lack of cooperation between institutions responsible for planning in different scales; economic relations are emphasized over other issues; insufficient planning rules are still based on land use planning instead of strategic planning.



Industrial brownfield, source: author's image.



Underdeveloped inner city areas of Panevezys, source: www.miestai.net.



Traffic congestion in central Panevėžys, source: www.miestai.net

Social threats:

Diminishing access to jobs, housing and services for lower class residents; social stratification and fragmentation; loss of private entrepreneur profit due to decreased urban density in central areas.



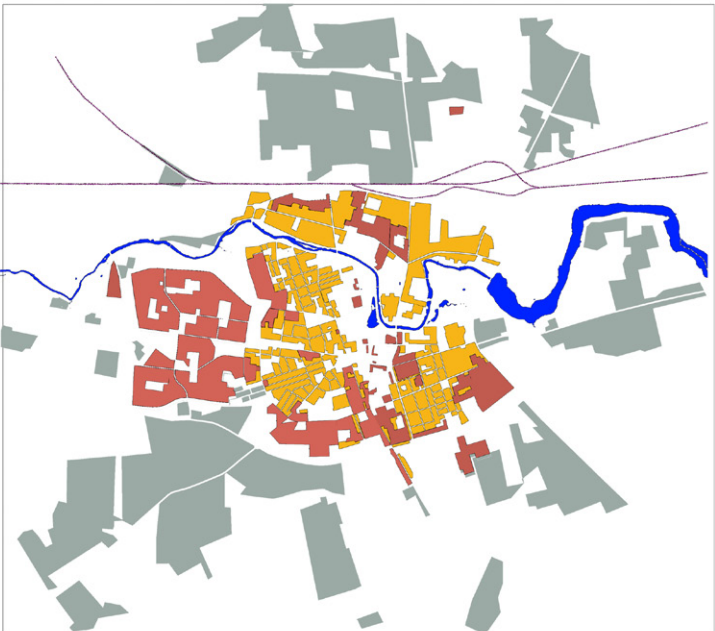
Low and medium income



Medium and high income



High income



Different income groups in Panevėžys, source: author's image.

2.6. How big is urban sprawl in Panevėžys?

City comparison

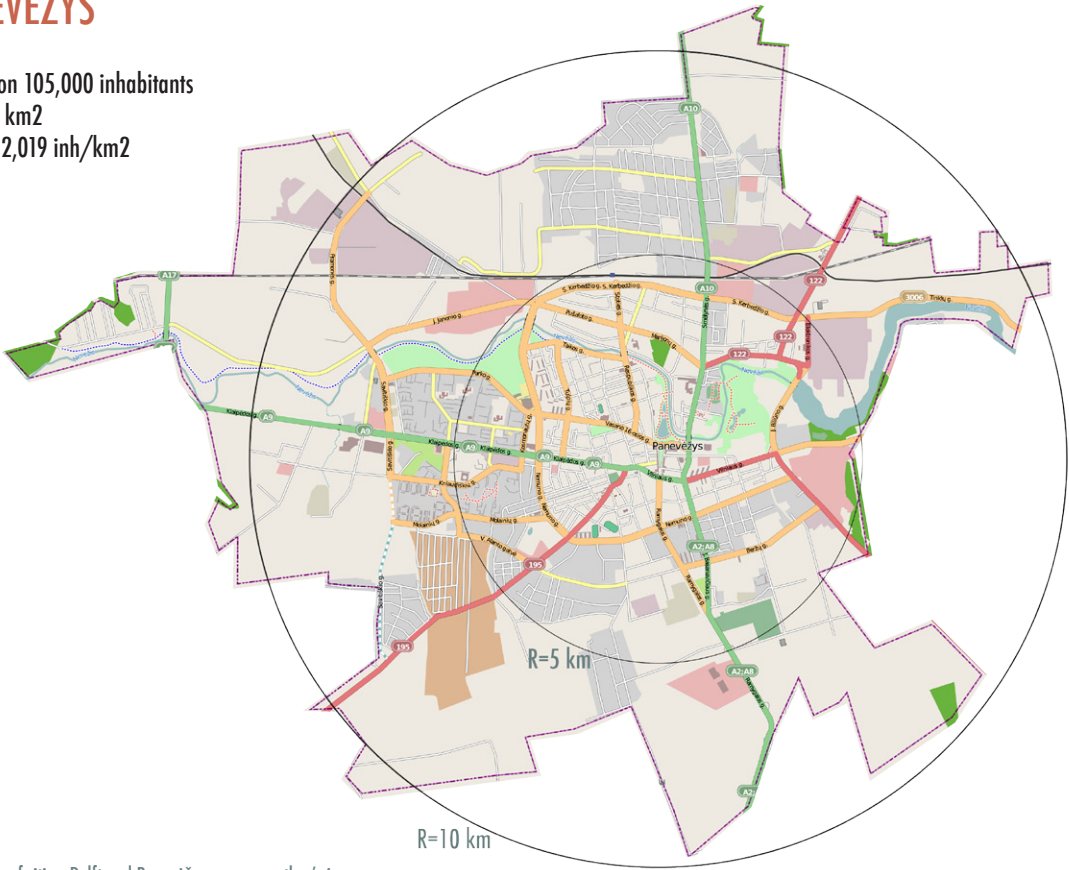
DELFT

Population 96, 100 inhabitants
Area: 24,08 km²
Density: 4,180 inh/km²



PANEVĖŽYS

Population 105,000 inhabitants
Area: 52 km²
Density: 2,019 inh/km²



Comparison of cities: Delft and Panevėžys, source: author's image.

2.7. Causes of urban sprawl

Real estate market

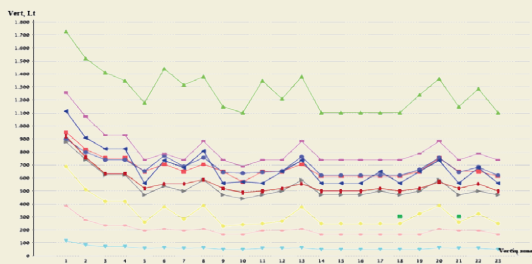
After the stagnation which marked the end of the massive socialist construction period in the early 1990's in all of the post-socialist countries (Stanilov, 2007), construction and real estate market in Lithuania has been increasingly growing since the mid 1990's reaching its peak in 2008, just before the global financial crisis. In 2008 the sector accounted for the 27% of the total gross value added by the economic activity in Lithuania.

A significant part of the construction works is the new residential constructions, which constitute 18%. That indicates the demand for new residential space. Residential constructions are carried out exceptionally only by private sector. The fact that the majority of the residential constructions are constituted by (semi)-detached housing indicates the demand for housing qualities and comfort.

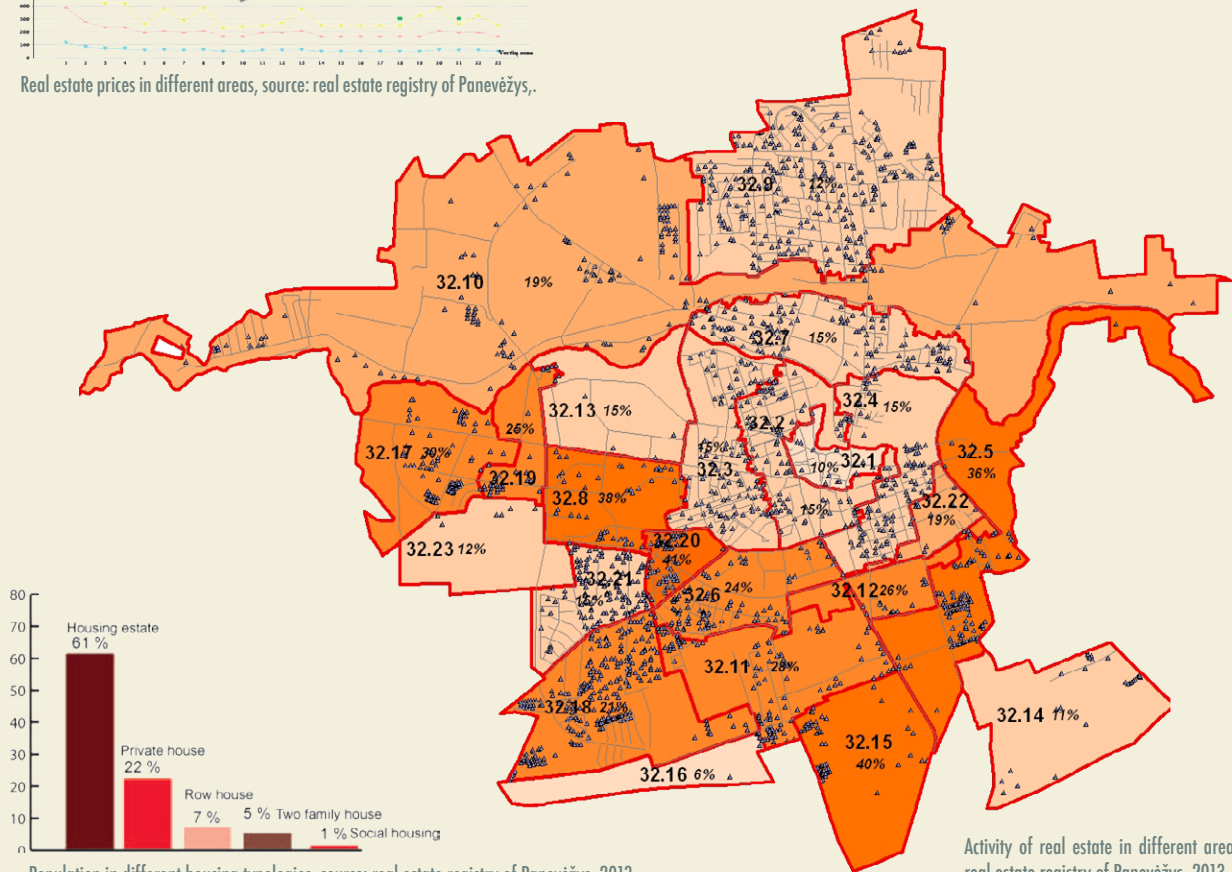
Main of the real estate activity areas are concentrated in the outskirts of the town. There is a correlation between the real estate price of an area and its' activity. However, the central part of the city has a strong demand for new office, service areas and residential houses. Currently, the supply of these buildings in the centre is very low.

There is a correlation between real estate price of an area and its activity.

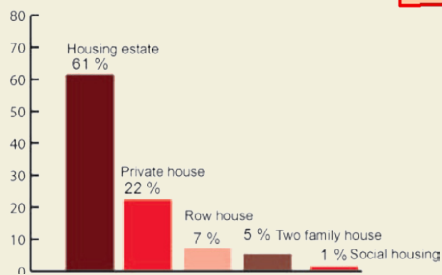
There is almost no supply of newbuildings in the centre.



Real estate prices in different areas, source: real estate registry of Panevėžys,.



Activity of real estate in different areas, source: real estate registry of Panevėžys, 2013.



Population in different housing typologies, source: real estate registry of Panevėžys, 2013.

Spatial planning system

Post-socialist transition has appeared to be an incredibly complicated task for planning institutions in the post-socialist countries. Planners had to face challenges of rapidly and dramatically changing socio-economic and political conditions, while undergoing crises of relevant knowledge, professional legitimacy and control mechanisms (Stanilov, 2007). Therefore it could be understood that contemporary planning system in Lithuania as well has some weak or missing elements.

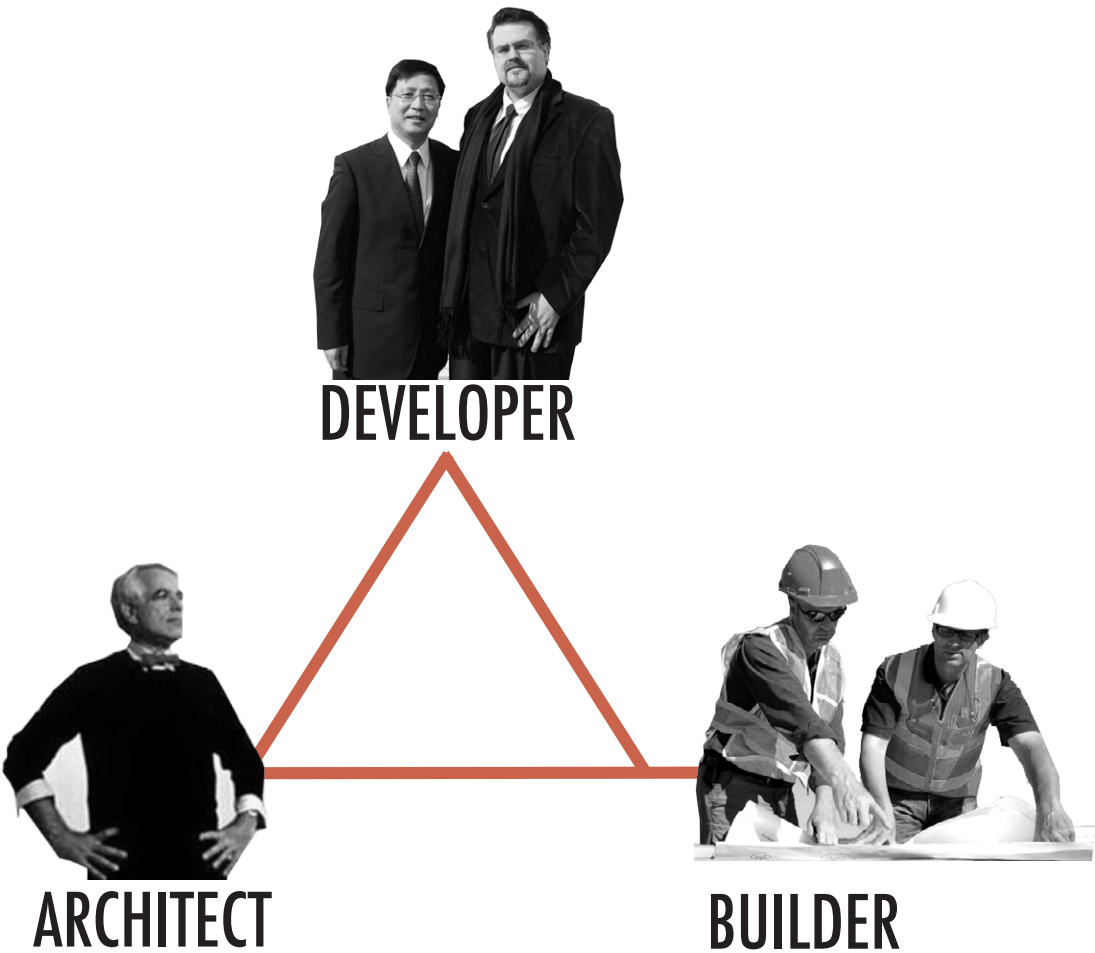
Communication among the various professionals involved in urban planning has been difficult. The current triangle (architect, developer, builder) still caters to a 'spatial reality' that is not efficiently connected with issues related to sustainable economic growth, social diversity and justice, and stewardships over natural and environmental resources (Friedman, 2005). 'Currently, not all roles, needs, and interests of the various actors are recognized, even when sometimes they overlap. Private developers and investors, on the other hand, have become powerful and important players, whose activities in the land development process should be more efficiently regulated (Stanilov, 2007: 407).

Current planning system in respect to the city planning consist of three types of planning documents, which correspond to two different levels. General Plans (land use plans) and Special plans are usually prepared on the scale of the city while Detailed plans are prepared on the very local levels. Such system does not cover the medium levels of developments necessary on the city districts or neighbourhood scale. Planning and development practice based on the detailed plans in relation to city scale land use plan (General Plan) contribute to chaotic and corrupt developments. It is a common practice to alter the land use initially defined by the land use plan of the city according to the emerged private interests represented in the detailed plans which opens possibilities for manipulations in favour of narrow interest groups.

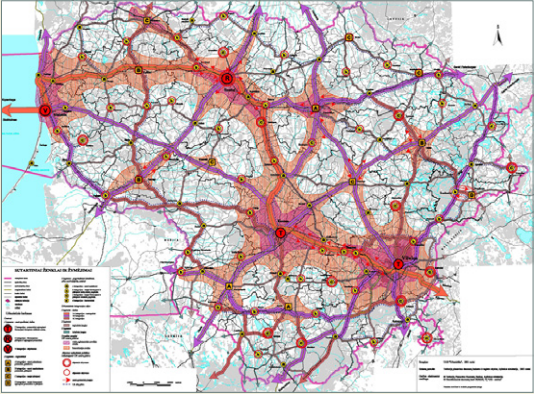
-There is a lack of clear visions on how Panevezys should grow.

-Urban planning in Lithuania is still based on land use planning.

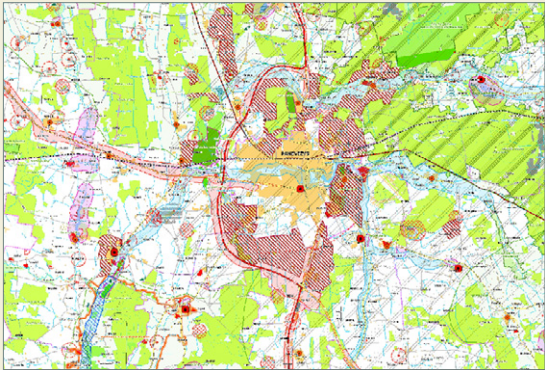
-There is a gap between scales in planning. A scale of district planning is missing.



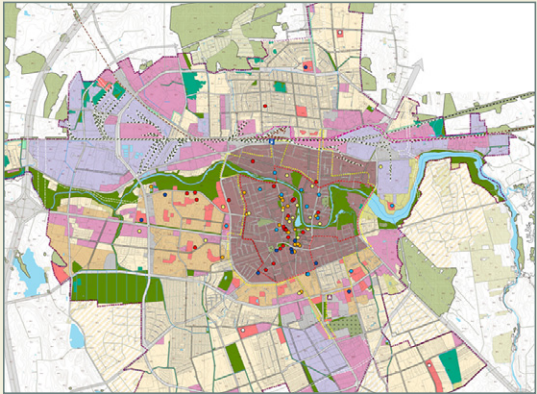
NATIONAL COMPREHENSIVE PLANNING



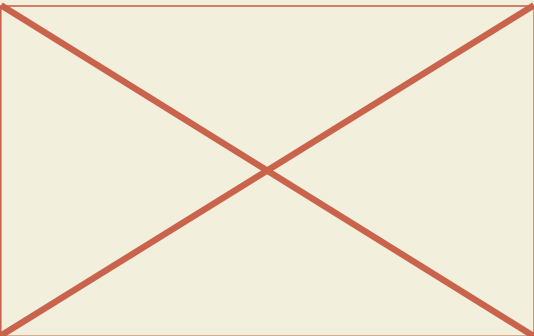
REGIONAL COMPREHENSIVE PLANNING



CITY LAND-USE PLANNING

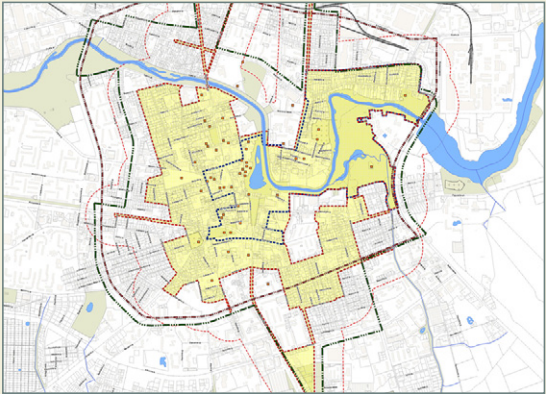


DISTRICT PLANNING



Planning scales in Lithuania, source: author's production.

CITY 'SPECIAL' PLANNING



DETAIL PLANNING

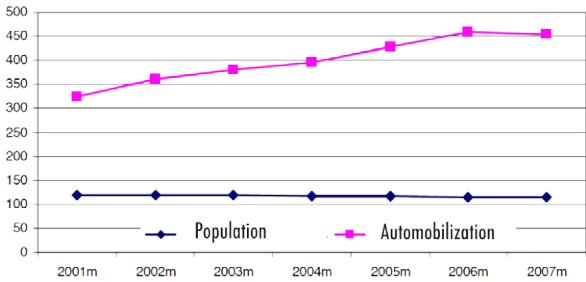


Automobilization

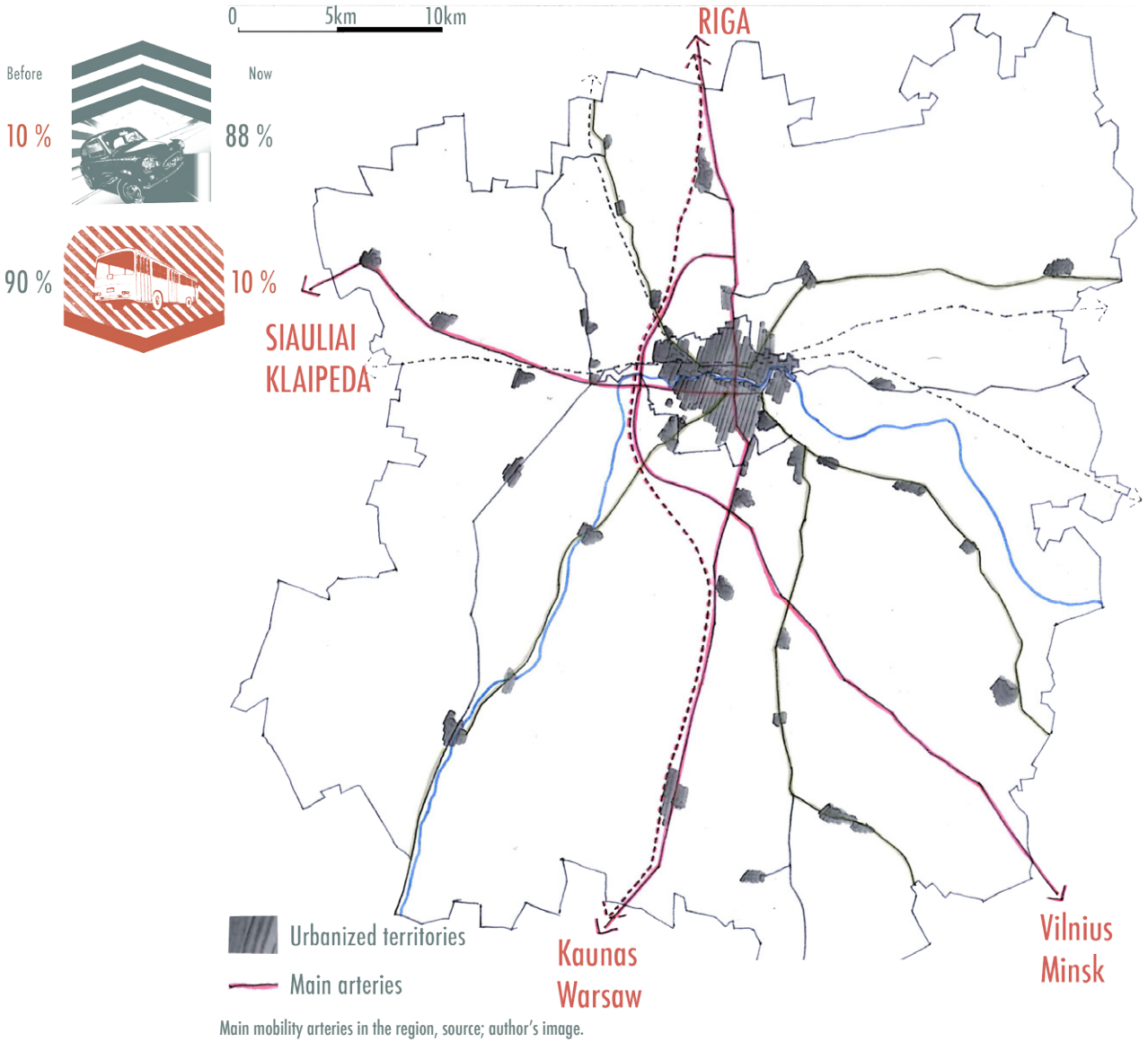
Automobilization is one of the most significant and most influential features of the post-socialist transformation. As the numbers of private cars increased multiple times within a period of twenty three years, it had completely altered patterns of mobility that in turn has dramatically changed the way the city became used and perceived. As the accessibility of the region increased that triggered urban sprawl; new low-rise suburban areas and highway oriented commercial and industrial developments emerged.

Public transportation was one of the most important element of the socialist city, which allowed to connect distant and functionally different city parts. Therefore public transportation system was embedded in the socialist city and the micro-districts of housing estate areas. However, due to high rates of automobilization, strong decline in the use of public transportation is a trend in the post-socialist countries and in Lithuania as well (Grava, 2007).

- The number of cars increased multiple times during the post-socialist period;
- The viability of the PT has a threat to decrease.



Population and automobiliation levels in Panevėžys, source: stat.gov.lt.

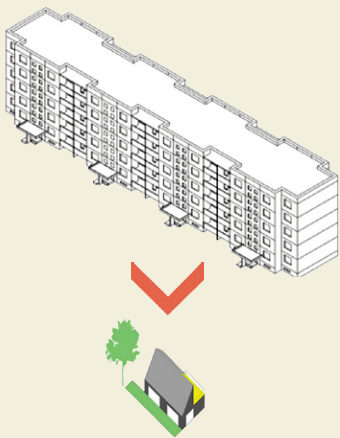


Changing lifestyle

New residential developments have been build in the city periphery and out in the region in forms of low density houses in the open countryside or more organized suburban developments and village extensions, all of which well connected to main roads and highways. Suburbanization in Lithuania is also connected to the aspects of mentality and tradition. Along with increased mobility and improvement of living standards there has been a dramatic turn to celebration of consumerism in the society, which previously had been constrained by a number of limitations and insufficiencies of the communist regime. Deregulation of land market and uncomplicated conversion of the agricultural land to urban uses became a standard procedure (Stanilov, 2007).

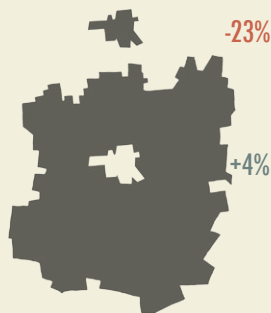
-There is a strong tendency of suburbanisation in Panevėžys while the population is migrating to the region and shrinking in general;

-People are migrating because of better living standarts in the pe-riphery.

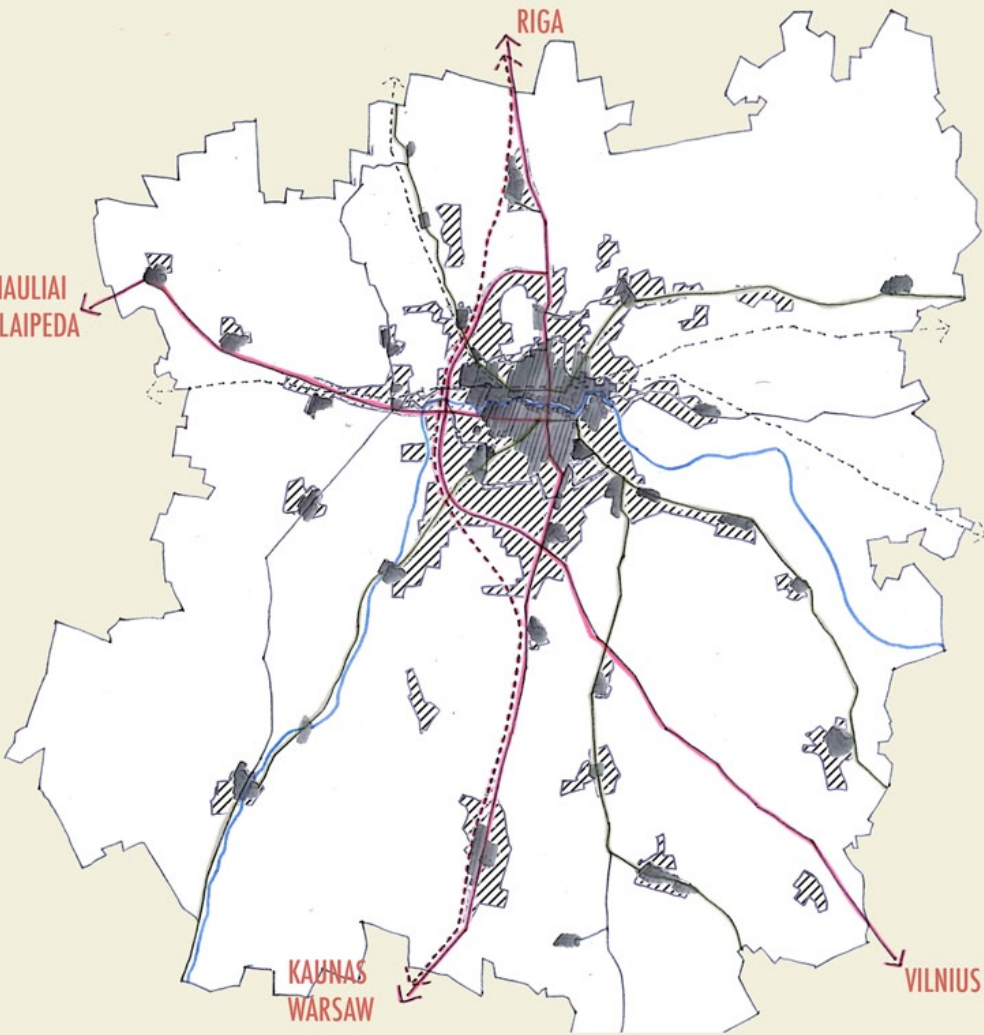


Preferred residential typology, source: author’s image.

LT		20 m2/cap
EU		30 m2/cap



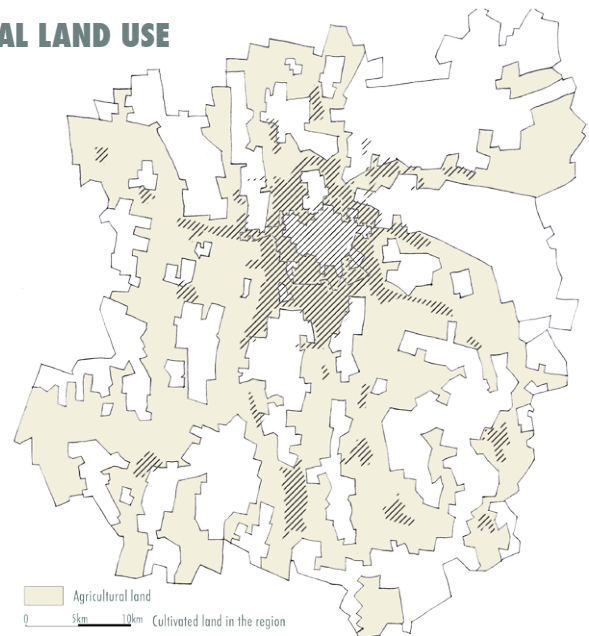
Population change in Panevėžys and the region, source: author’s image.



0 5km 10km Vision of the urban expansions

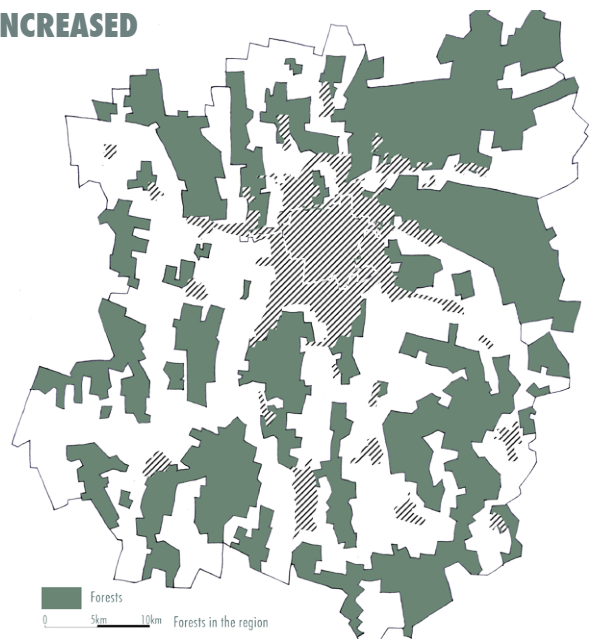
2.8. Threat to agrarian land and the forests

AGRICULTURAL LAND 57% > 45% OF THE REGIONAL LAND USE



Threat of sprawl to the agricultural land, source: author's image.

CONSUMPTION OF BIOFUELS IS PLANNED TO BE INCREASED
30% > 60%



Threat of sprawl to forests, source: author's production.

Losing the quality of landscapes...

Panevezys region belongs to the zone of fertile land in Lithuania. There is an increasing importance that agrarian land is having on producing energy. Presently, 30 % of the energy is produced from biofuels and 70 % from natural gas. The municipality is aiming to to change the balance to 60 % for biofuels in the next fifteen years. This trend is important because the region would be able to sustain cheaper renewable energy. Therefore, agricultural land (biomass) and forests (biofuel) will have an increasingly important role in the structure of the region.

However, due to the planned suburban expansion of the city, agrarian land is planned to be reduced by almost 10 %. This trend is jeopardizing the sustainable energetic future of the region. Moreover, fewer forests will also mean negative ecological impact. Currently the forests are forming an ecological network around the city. The continuity of this network is threatened. Air pollution is predicted to rise because of automobilization and fewer forests.

As the supply of oil and natural gas drops, prices will rise. The high dependance of contemporary industrial transport, and agricultural and industrial systems on low cost, readily available oil will hasten the post-peak production decline, with the probability of severe increases in oil prices having further negative implications for the global economy (Carmona et al., 2010). Some of the more spatial consequences of oil and natural gas depletion will be an increased localism and perhaps also high density, more compact urban forms. The focus of society will have to return to the town or small city and its supporting agricultural hinterland. Those towns and small cities will have to be a lot denser (Kunstler, 2005).

-There is a tendency for the agricultural land and forest areas to decrease due to suburban expansion.

-This jeopardizes the ecological and energetic sustainability of the region, since there is an increasing importance of bio-fuels and cheaper renewable energy.

-Sprawl is also reducing the quality of landscapes.

QUALITIES OF THE CENTRAL CITY:

Good quality public space; high density of inhabitants; existing infrastructure; existing public transport; existing social infrastructure and services; urban identity.

QUALITIES OF THE AGRARIAN LAND:

Countryside identity; agrarian and biomass production - important for the economy.

QUALITIES OF NATURAL LAND AND FORESTS:

Protection of ecosystems; source of wood; flora and fauna; recreation.

Image of oldtown of Panevėžys, source: maps.google.com



Image of the agricultural land, source: maps.google.



Image of natural park close to Panevėžys, source: maps.google.com



... because of the emerging suburbia

FEATURES OF SUBURBAN DEVELOPMENT:

- Low density;
- No social infrastructure;
- Poorly managed public space;
- Gated communities;
- Need for new infrastructure;
- Low reachability of public transport;

BUT:

- More spacious;
- More private land that is cheaper;
- Mostly appreciated by people.





Suburbs and gated communities, source: Muliolyte, 2010.



3.SPATIAL ANALYSIS OF THE CITY

In this chapter the main body of research on the spatial analysis of Panevėžys is presented. Topics relate to the research questions. The post-socialist city phases and processes of transformations are concluded with the problems of each of the morphological areas. Chapter consists of the following analysis: regional features of Panevėžys; main structural lines; work place concentration; residential concentration; urban activity; mobility studies; programme and typology; different areas.

Region of Panevėžys

Main infrastructural lines and typological areas

Programme and typology

Urban activity studies

Mobility studies

Different typological areas





3.1. The emerging importance of 'Via Baltica'

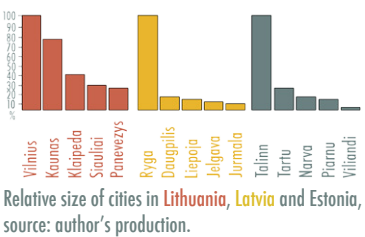
Lithuania is a country in the North-East Europe. It is a part of The Baltic Sea Region and the southernmost country of the Baltic states, situated on the eastern side of the Baltic sea. With the position on the edge of the central Europe Lithuania holds a strategic location in the region, functioning as the transition south-north and east-west directions.

Following Vilnius, Kaunas, Klaipeda and Šiauliai, Panevėžys is the fifth largest city in Lithuania. It has a favorable geographical position in the region. The highway 'Via Baltica', connecting Finland and Central Europe is passing in the vicinity of the city. Panevezys is in the mid-way between Vilnius (130 km distance) and Riga (150 km distance), has trade connections with the harbour city of Klaipeda (220 km distance) and Kaunas (100 km distance).

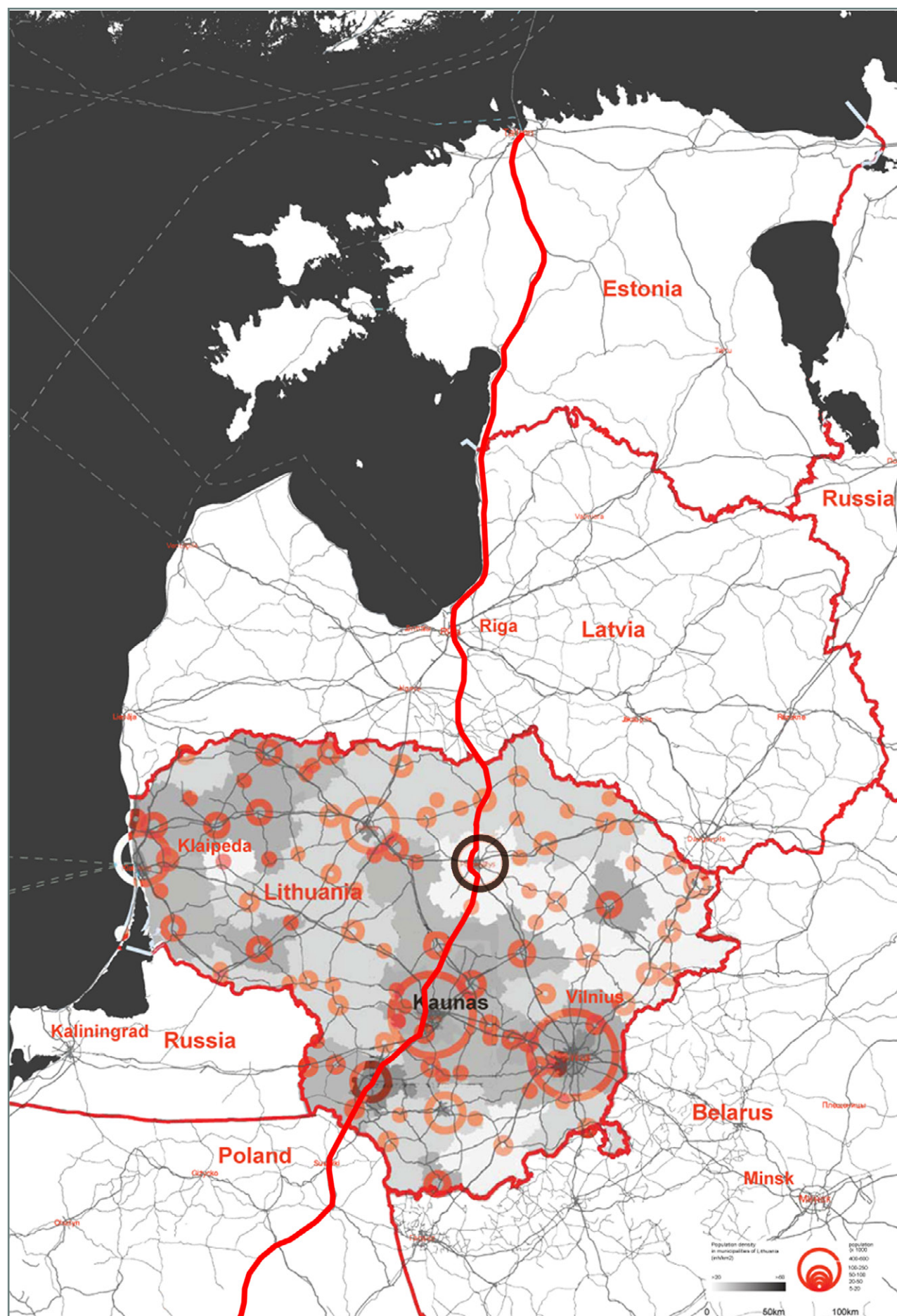
In the comprehensive plan of Lithuania, Panevėžys is seen as the centre of its' region, participating in the main development axis of Lithuania. Main economic sectors that are established in the region are industry, agriculture and logistics. Due to the vicinity with 'Via Baltica', industrial and logistic developments are being encouraged the most.

Panevėžys has a favorable geographical position in the region due to the vicinity with 'Via Baltica'.

The city is in the mid-point between Vilnius and Riga.



Traffic intensity in the Baltic Sea region, source: Nordregio.



Panevėžys in the Baltic States, source: reproduced from Jonauskis, 2010.

3.2. Panevėžys - regional centre

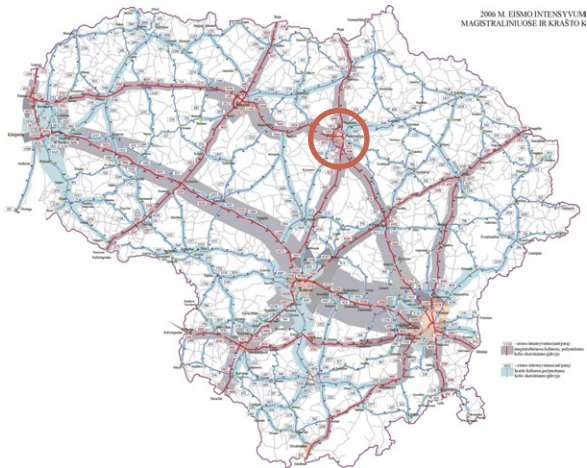
There is a three level administrative structure in Lithuania: state, regions and city municipalities. Panevezys is referred to its' region and the city itself. It is the fifth largest region (146,000 inh) and the fifth largest city (107,578 inh) in Lithuania. The administrative centres of both municipalities are in the city itself.

Most of the area of the region is covered by Agrarian land (57,12 %) and forests (34,15%). Only 1,7 % of the area is built-up. Therefore, the region have large natural assets that will be more valuable in the future due to ecologic and energetic trends.

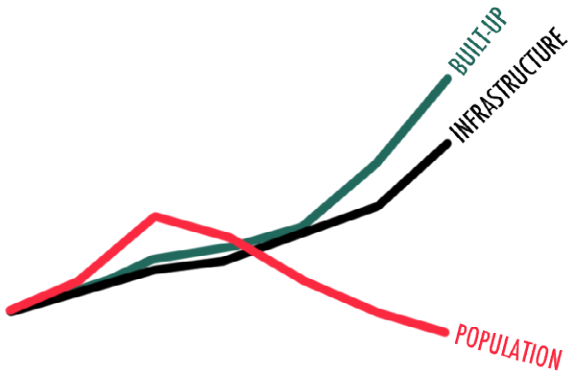
The metropolitan area of Panevezys has 242,000 inhabitants in total. Settlements in a distance that is lower than 30 km are depending on the daily services concentrated in the city. Moreover, there are some regional centres that are important for the towns and settlements even further away. These functions are: medical, commercial, administrative, cultural, entertainment, sport services and work places.

Presently, the built-up area is double of its' previous size, therefore, the density is two times lower. This is due to urban sprawl and significant population shrinkage.

- There is a strong regionalization process of Panevezys;
- One big city - Panevėžys, other land is mostly covered by agrarian fields and forests;
- Panevėžys is a centre of daily services for locals and commuters in 30 km radius;
- Panevėžys is a centre of non-daily and regional services for locals and commuters from the metropolitan area (70 km radius).



Traffic intensity in Lithuania.



Expansive development, source: stat.gov.lt

Factsheet:

Teritory of the city - **50 km²**;

Population of the city - **107,578 inh**;

Population of the region - **146,000 inh**;

Population of the metropolitan area - **242,000 inh**;

Population density in the city - **2152 inh/km²**;

Number of companies - **3191**.

WHOLESALE, RETAIL COMMERCE 26.1 %

SERVICES 22.9 %

MANUFACTURING 9.2 %

TRANSPORT 7.4 %

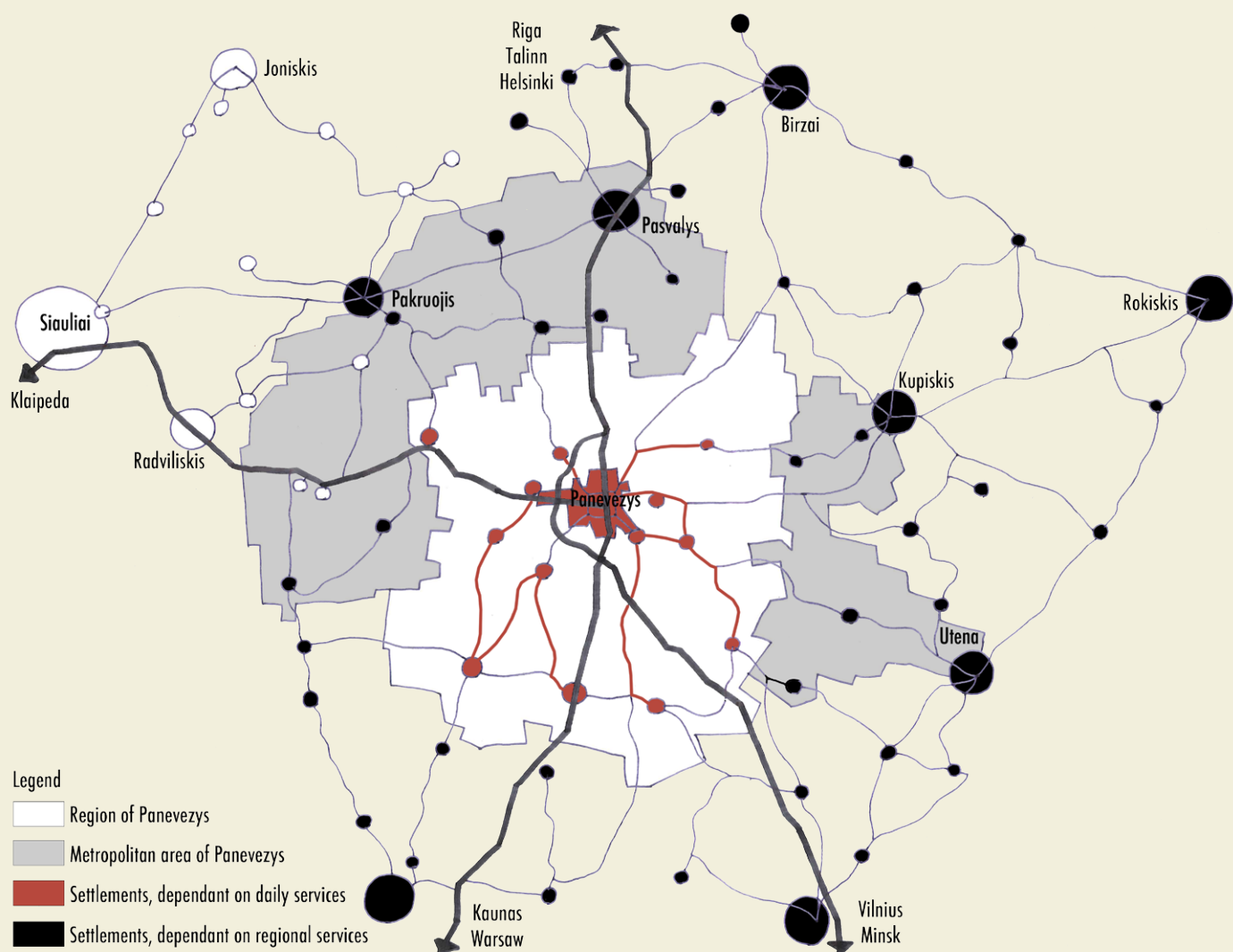
CONSTRUCTION 5.5 %

SCIENCE 5.3 %

RECREATION 4.9 %

HOSPITALITY 3.7 %

Economic sectors, source: stat.gov.lt

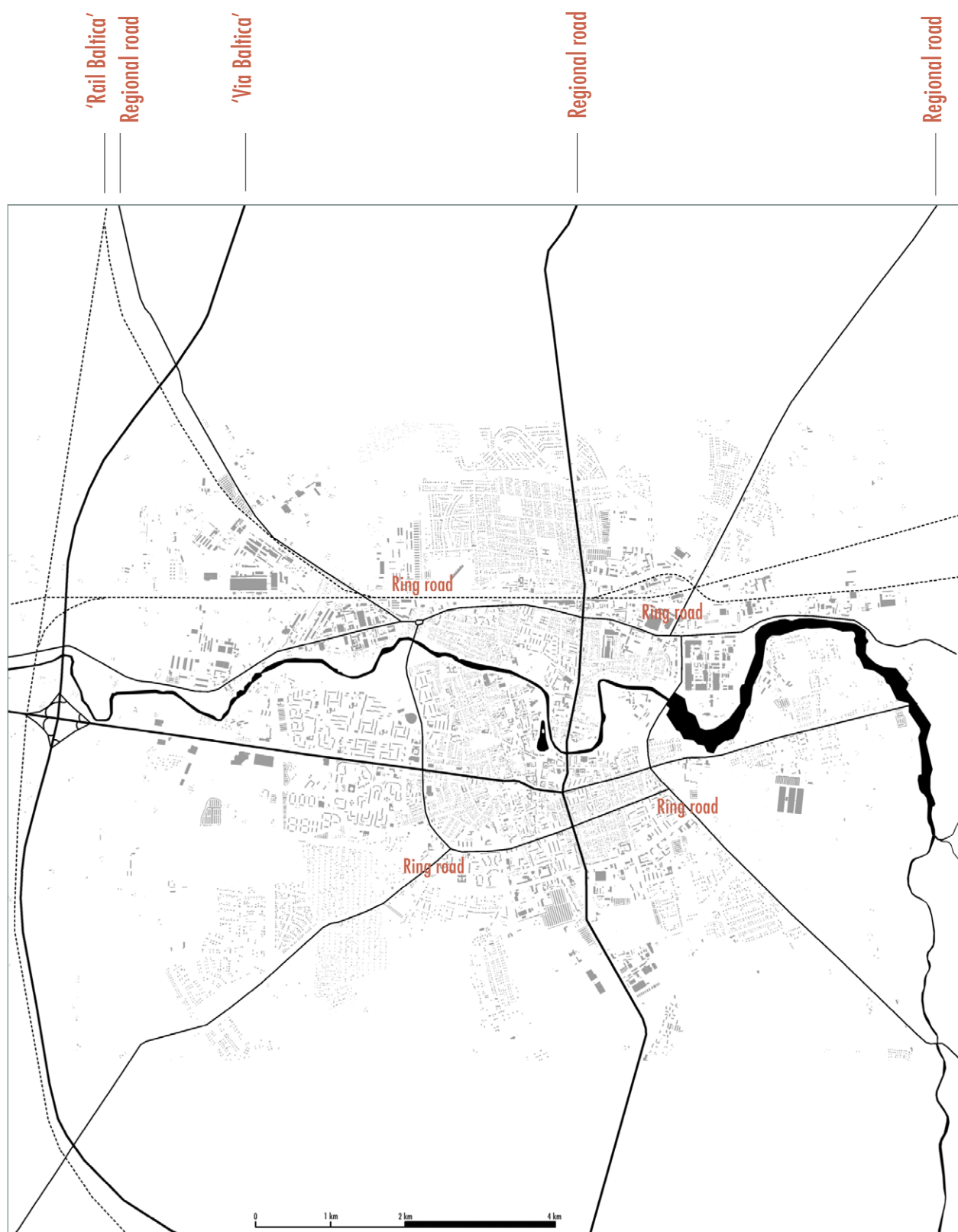


Metropolitan region of Panevezys, source: author's image.



Administrative system, source: author's image.

3.3. Main infrastructural lines and typological areas



Main infrastructural lines, source: author's production.

21 CENTURY

CIAM

HISTORICAL CORE



Different morphological areas in Panevezys, source: author's production.

3.4. Concentration of living and working

Residential concentration

The city structure is strongly formed by main infrastructural lines of the city:

-River Nevėžis:

West-East natural axis, where main green public spaces are concentrated. Two parts of the river are connected by multiple bridges, where the most important ones are the ring road bridges and the central one. The river axis has a lot of historical urban elements that form the identity of the city.

-Regional roads:

The concentric road system is connecting the city centre with the surrounding towns and villages. These are the main transport arteries that the regional users are using for commuting to the city.

-Ring road:

It is the element that connects the different functional and morphological areas of the city. Furthermore, it gathers the flows from the regional roads and distributes it through the city.

-North-South and West-East road axis:

These roads the most important infrastructural elements of Panevėžys. They connect the city centre to the highway system and the city centre to the densest suburban areas. Moreover, good accessibility of the arterie resulted in main local and regional activities clustering along the roads. Increasing traffic congestions are visible along the way.

-Highway 'Via Baltica':

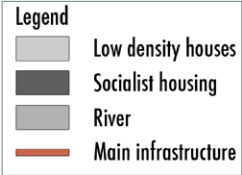
An international highway, connecting Finland to Central Europe, is passing 5 km in the West of the city. The increasing freight and car traffic intensity suggests the highway will have a more important role in the future.

-Railway network:

During socialism the railway was the main transport mean for freights. Currently its' role is lowering down. The original West-East connection is currently used for freight transit and passengers going to the surrounding towns. However the new line 'Rail Baltica' will offer more national and international destinations that will affect the increasing usage of the rail. The station is planned outside the city in the West close to the highway 'Via Baltica'.

-60 % of the population is concentrated in the **socialist housing high density areas** that are established close to the ring road.

-All the **other** population is living in the **low density family houses** concentrated around the city core and stretching towards suburbia.

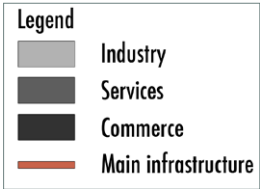


Job concentration

-**industrial job places** a concentrated in the former socialist industrial areas, new ones are established near well accessible areas.

-**commercial companies** are established in the former industrial areas, near the best accessible roads and highest concentrations of people.

-**Services** are mainly responding to the concentration of residents. The regional and non-daily serviecs are mainly concentrated in the city centre.





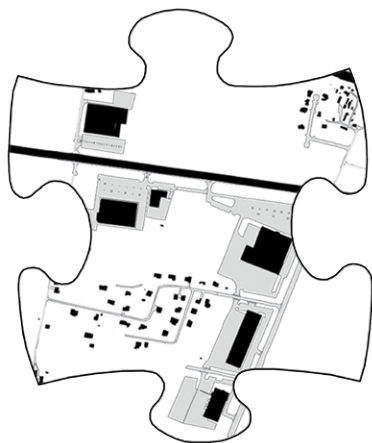
Residential concentration, source: author's image.



Job concentration, source: author's image.

Individually acting areas

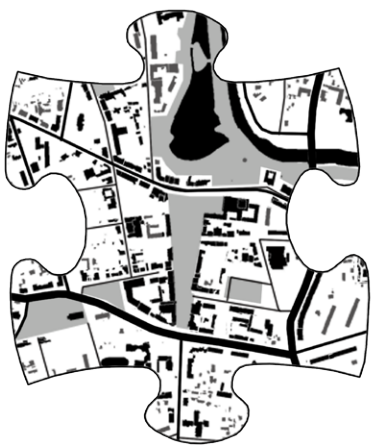
21 CENTURY



CIAM



HISTORICAL CORE

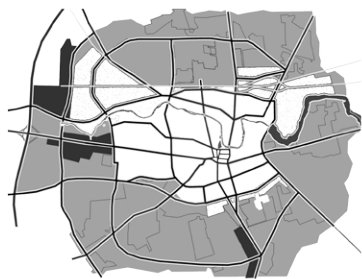


Different patterns developed in different periods, source: author's image.

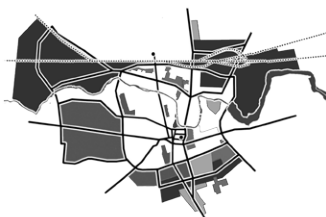
3 different areas, according to historical development, typology and morphology, do not have clear relationships in between and are individually working areas.

These areas are separated by main structural lines of the city and lack continuity in public space and complementarity of functions.

21 CENTURY



CIAM



HISTORICAL CORE



21st century development, source: author's image.

Socialist development, source: author's image.

Historical development, source: author's image.



21st century part - shopping malls, source: fotoskrydis.lt



CIAM part of the city - socialist housing estates, source: fotoskrydis.lt



Historical part of the city, source: fotoskrydis.lt

3.5. Planned future programme

Most of the foreseen programme is planned to be developed in the suburbs. Naming the biggest projects of the near future and summarizing their programme give a particular programme of urban development.

Non residential programme:

-Railway 'Rail Baltica'. An international railway line, connecting Warsaw and Central Europe to Helsinki. The line is planned to have a station close to Panevezys near the highway 'Via Baltica'.

-Logistic centres. The places for them are planned near the best accessible roads. Most of the centres are seen to be established near the highway 'Via Baltica'. A big logistic centre is planned on the crossing of the highway with the old and new railway lines.

-Industrial zones. A free tax economic zone is being developed in the Western side of the city close to the highway and the new railway. The zone will have 10 new industries and an area of 470,000 m².

-Shopping malls and commercial complexes. A clusterization of services and commerce is planned in a new city sub-centre on the Western edge of the city in the form of shopping malls. The currently existing ones are going to be expanded by the following programme:

- Office space 30,000 m²;
- Warehouses/offices/industry 22,000 m²;
- Retail of construction/furniture 39,000 m²;
- Automobile maintenance 12,700 m²;
- Hotels 22,400 m²;
- Entertainment 10,000 m².

Residential programme:

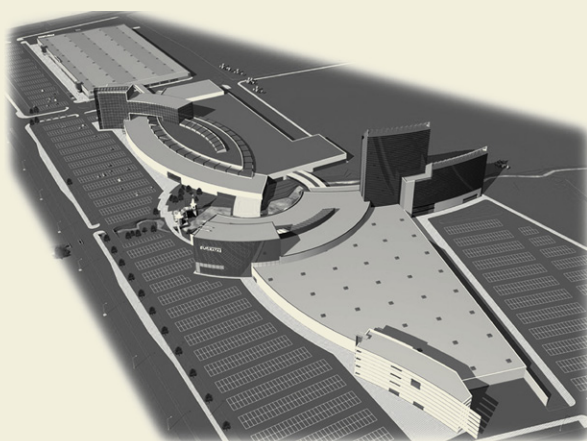
Two main processes of residential development is seen to be developed:

-the construction of low-density family houses in the suburbs - 25,000 m²/year.

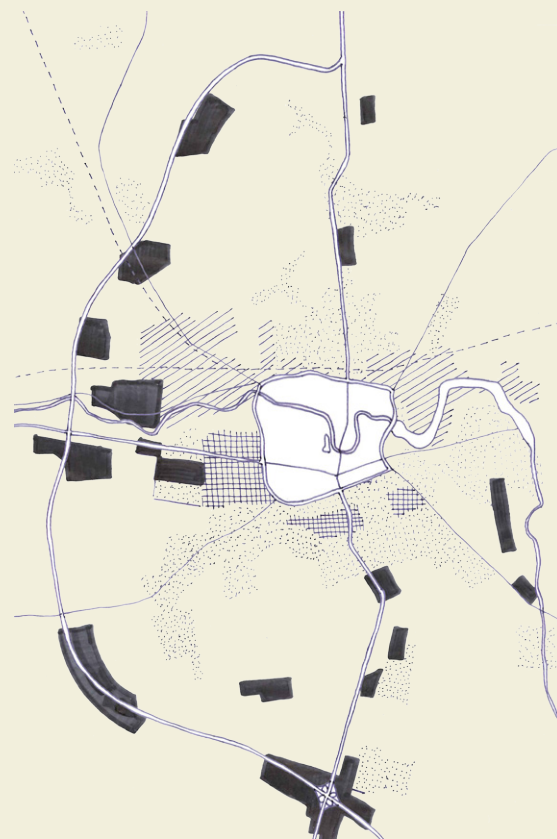
-renovation of socialist housing estates (facades and insulation).



'Rail Baltica' line, source: author's image.



New shopping malls, source: author's image.



Planned logistic and commercial centres, source: author's image.

0 100m 200m



	Logistic centres New centre Rail Baltica	
	New industry 470,000 m2 short-term	
	New wholesale 20,000 - 30,000 m2 short-term	
	New malls 100,000 m2 short-term	
	Low density housing 25,000 m2/year	
	Old industry Abandoned	
	New offices, services 100,000 m2 short-term	
	CIAM Renovation	
	Central housing No supply	

Programme and typologies, source: author's image.

3.6. Features of different typological areas

21 Century part

Main features of the 21st century urban development:

-Sprawl:

the developments are spread through the region with no strong link with each other.

-Loose urbanity:

The low dense gated communities and large shopping malls do not possess an attractive and viable public space.

-Good inter-regional infrastructure, lack of local quality infrastructure:

The municipality is not capable of supporting every new development with sufficient road, water, electricity or gas infrastructure.

-Agricultural land, forests:

There is a high amount of important agrarian land that is threatened to be built on.

-Commuting to the city:

The suburban areas have almost no social infrastructure. There is a strong commuting to the city even for basic services.

-Most of the new programme is taking place in the area:

Cheaper open land is attractive for private developers.

Problems:

-The trends on the establishment of new industry, logistics and whole-sale service could be a positive trend because it takes the heavy freight transport away from the inner city. **These new areas however, should be established closer to the edge of the city for the public transport to be available to reach them.**

-new family house areas are gated and do not have a viable public space, quality infrastructure.

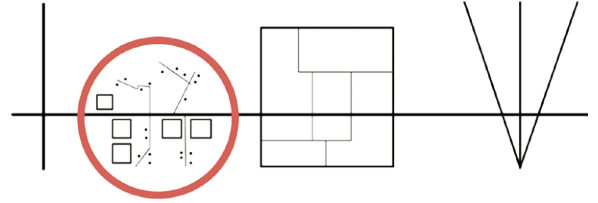
-these areas are not dense enough for the patronage of the basic services.

-they are not covered with fast public transport.

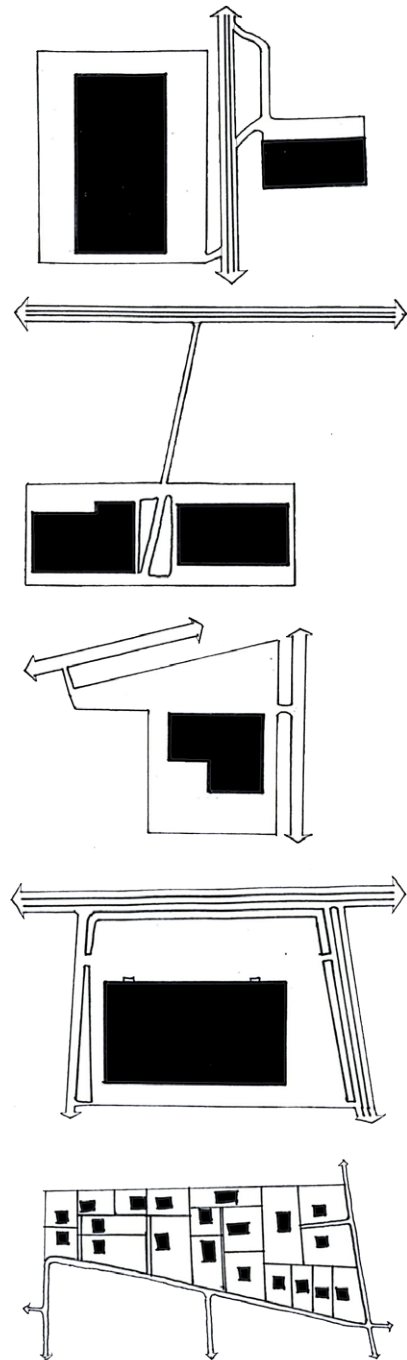
-the shopping malls are jeopardizing the viability of the centre because attracts businesses and customers from there. The only public space the shopping mall is providing is the parking space.

-the new developments are usually taking place on agrarian land that forms a part of the economy of the city. These lands will become more important in the future because they will support the renewable energy sources.

-the commuting to the city is creating traffic congestions in the inner city areas.



Conceptual scheme: patterns of the 21st century part, source: author's image.



Patterns of the 21st century developments, source: author's image.



Patterns of 21st century urban development in Panevezys, source: author's production.

Socialist CIAM part

Main features of the Socialist CIAM urban development part:

-Compact structure:

the housing estates and the industrial part had a compact city structure because it was fast to construct and easy to support the public transport.

-Decaying quality of industrial and housing areas:

The move of new industries from the inner city resulted in the abandonment of the former industrial buildings. The socialist housing estates are decaying because of insufficient management of their buildings and outdoor public space.

-Good public transport:

these areas are still supported by sufficient public transport, connecting large part of the city;

-Restitution of land:

parts of the land are planned to give back to the former owners because they were nationalized during socialism;

-High density of population:

60 % of the populations is still living in the socialist housing estates. The high density is enough to support many services and businesses.

Problems:

-The decaying socialist housing estates are creating social fragmentation. They need to be restructured. However, most of the investments go to the greenfield development.

-The abandoned brownfield areas are forming a fragmented urban tissue, although they are often in strategic locations.

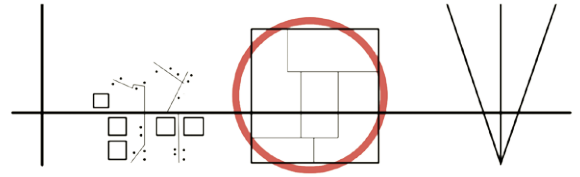
-There is a shortage of parking spaces in the socialist housing estates up to 4 times the present amount.

-There are crime issues in the socialist housing estates due to large amounts of unmaintained public space.

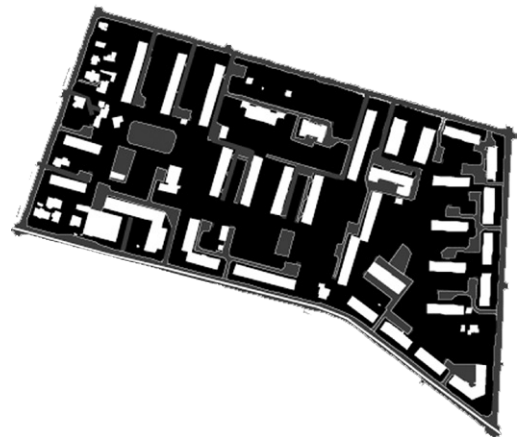
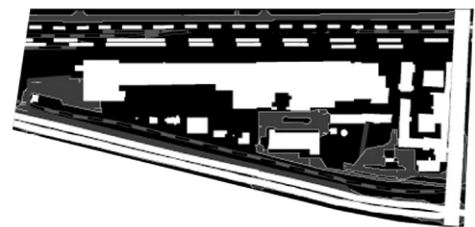
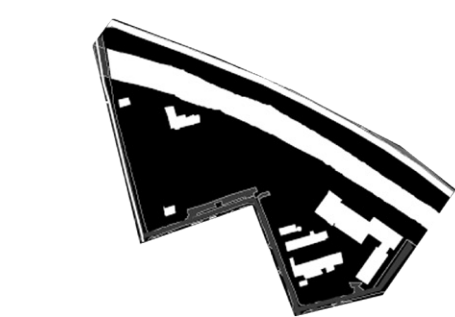
-The private apartments are overcrowded, the communal space outside is not supporting any private activities.

-The superblocks of the housing estates are not networked enough to the surrounding urban tissue.

The Socialist areas are decaying but have the most potentials due to the unbuilt public land, vicinity to the city-wide systems and strategic location close to the city centre.



Conceptual scheme: patterns of the CIAM part, source: author's image.



Public spaces in the housing estates and the brownfields, source: author's production.



Patterns of the socialist urban development part, source: author's production.

Historical core

Main features of the historical centre urban development:

-Fragmented historical-post socialist structure:
there is a lack of continuity of historical structures due to socialist urban interventions.

-High amount of quality public space, amenities:
there is a well developed public space network with many services clustered around it. Some parts are however underdeveloped and need restructuring.

-Good public transport:
these areas are still supported by sufficient public transport, connecting large part of the city;

-High potential for knowledge based small and medium firms:
The city centre is a cluster of culture, entertainment and high education. There is an increasing need of space for development, however there is almost no new supply of houses due to higher real estate prices and land regulations.

This part is also used by most users, that could be separated into three groups:

-Visitors: commuting for services, culture, entertainment, events, sport, business conferences, tourism.

-Regional commuters: regional services, public space, commerce, culture.

-Locals: commuting, services, education, healthcare, commerce.

Problems:

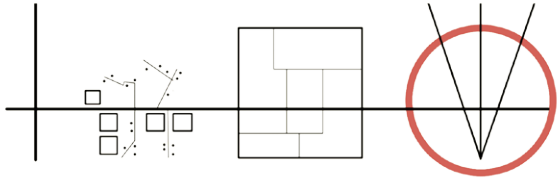
-The fragmented areas in the inner city are not being developed although there is a demand for small and medium sized.

-The public space at the present bus terminal is not safe and suitable for new programme. It needs to be restructured.

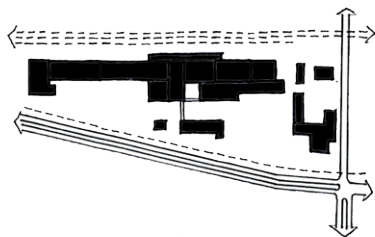
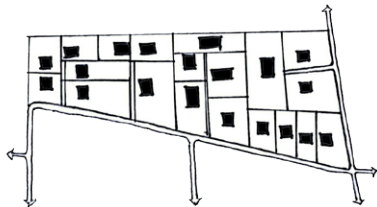
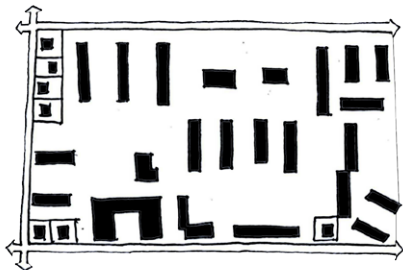
-There is a lack of links to the city wide structures like the park system, the railway and the regional bus station.

-There are gaps in links in cycling lanes in the historical centre.

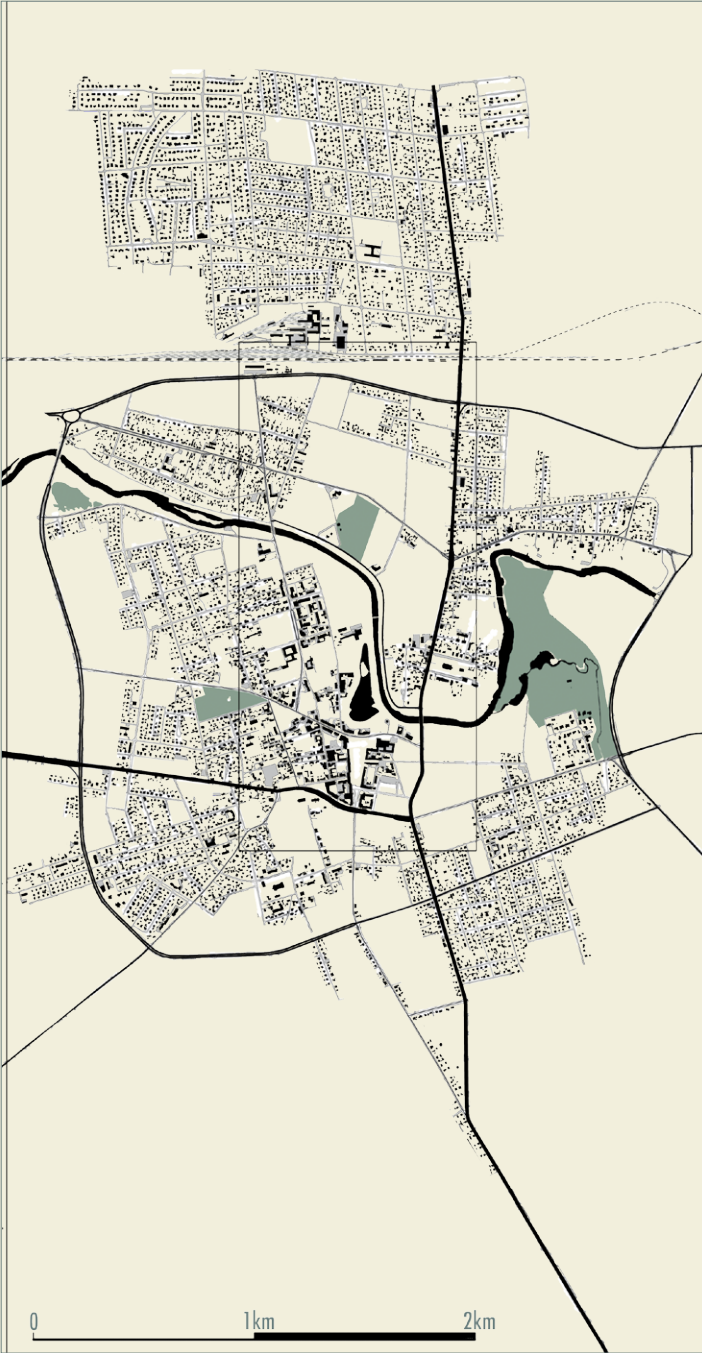
-The brownfields in the northern side of the centre are abandoned although are in a strategic location.



Conceptual scheme: patterns of the historical centre, source: author's image.



Typologies, found in the city centre, source: author's production.



Patterns of the historical services, source: author's image.



Buildings of non-residential function, source: author's image.

3.7. Urban activity studies

MEDICAL SERVICES

Mapping indicates more concentrations in the city centre and along the main WestEast-NorthSouth axis of the city. More equal distributions could be seen in the central part of the city and the ring road, few in the socialist housing estates with combinations of medical services in all neighbourhood centers. Few facilities are also found in the Northern residential suburbia.



Healthcare services, source: author's image.

CULTURE, SPORTS AND RECREATION

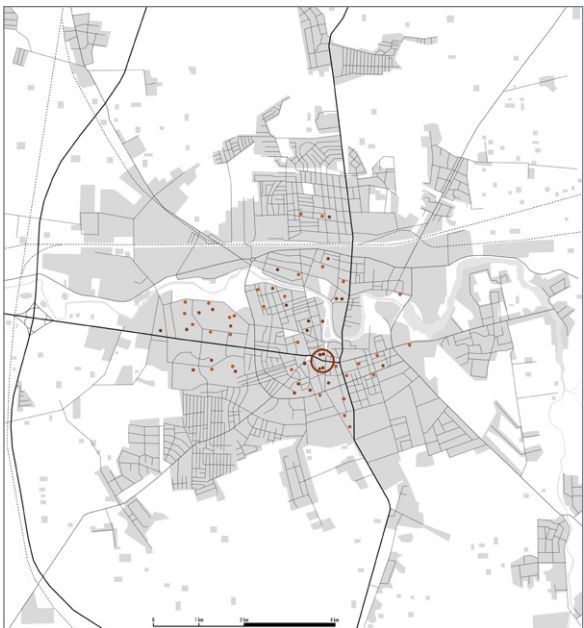
Mapping indicates more concentrations of cultural and religious institutions in the city centre. Tourism and recreational facilities are mainly situated near the river green axis of the city and in the centre. Most important sport facilities are established close to the ring road, while smaller sport centres are found in the city centre.



Cultural, sport and recreational services, source: author's image.

EDUCATIONAL FACILITIES

Mapping indicates concentrations of higher and professional education as well as extracurricular schools in the city centre. Particular agglomeration of professional education could be found at the edge of the socialist housing estates and the industrial zone. Schools and kindergartens could be seen more equally distributed in the city. Complexes of such educational institutions could be seen systematically distributed in the socialist housing areas, where schools and kindergartens determine the centres of microrayons.

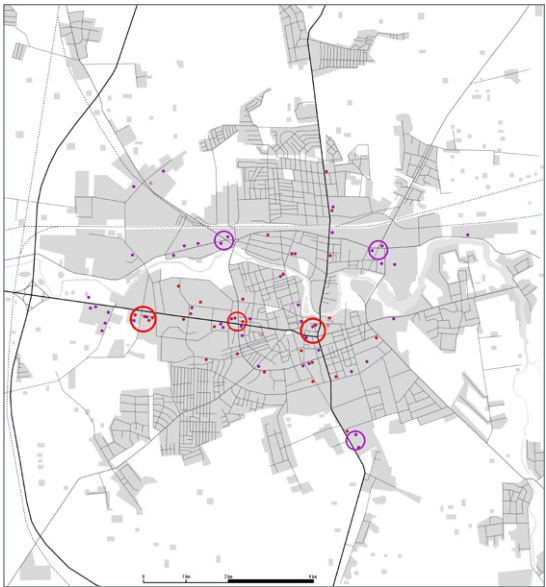


Educational facilities, source: author's image.

SHOPPING FACILITIES

Mapping indicates concentrations of shopping centres along the main roads. Here the main NorthSouth-WestEast axis, the old city road leading to the centre is of the greatest significance. The city has a quite equally distributed network of supermarkets. Some larger shopping malls were found along the WestEast road and the ring road. There is a lack of commerce distribution in the suburbia.

Specialized centres are found near the best accessible roads, especially near the ring road close to the industrial areas.



Shopping facilities, source: author's image.

PUBLIC AMENITIES

Mapping indicates concentrations of public institutions in the historical city centre where most of the administrative institutions are situated in close agglomerations.

Other institutions are clustered in close to the ring road and the big shopping mall in the western edge of the city.

Daily institutions are dispersed more equally in neighbourhoods of higher residential concentration.



Public facilities, source: author's image.

Legend	
• Public, administrative	• Higher education
• Specialized commerce	• Religion
• Markets	• Culture
• Commerce	• Entertainment, recreation
• Kindergardens	• Healthcare
• Primary/secondary schools	• Sport

DAILY SERVICES

Mapping indicates the daily services are spread through the city more equally. Most of them are found in the city centre. Others are close to the high concentration of people (socialist housing estates). There are almost no or only few services in the suburbia. This affects a bigger transport movement from suburbia into the city.



Daily services, source: author's image.

NON DAILY/REGIONAL SERVICES

Mapping indicates that the non-daily and regional services, such as culture, religion, sport, specialized commerce, public amenities are concentrated in the centre, along the river and accessible transport nodes near the ring road and the shopping malls towards the 'Via Baltica'.

These services have to be easily reached by public transport and regional roads because the amenities are of regional importance.



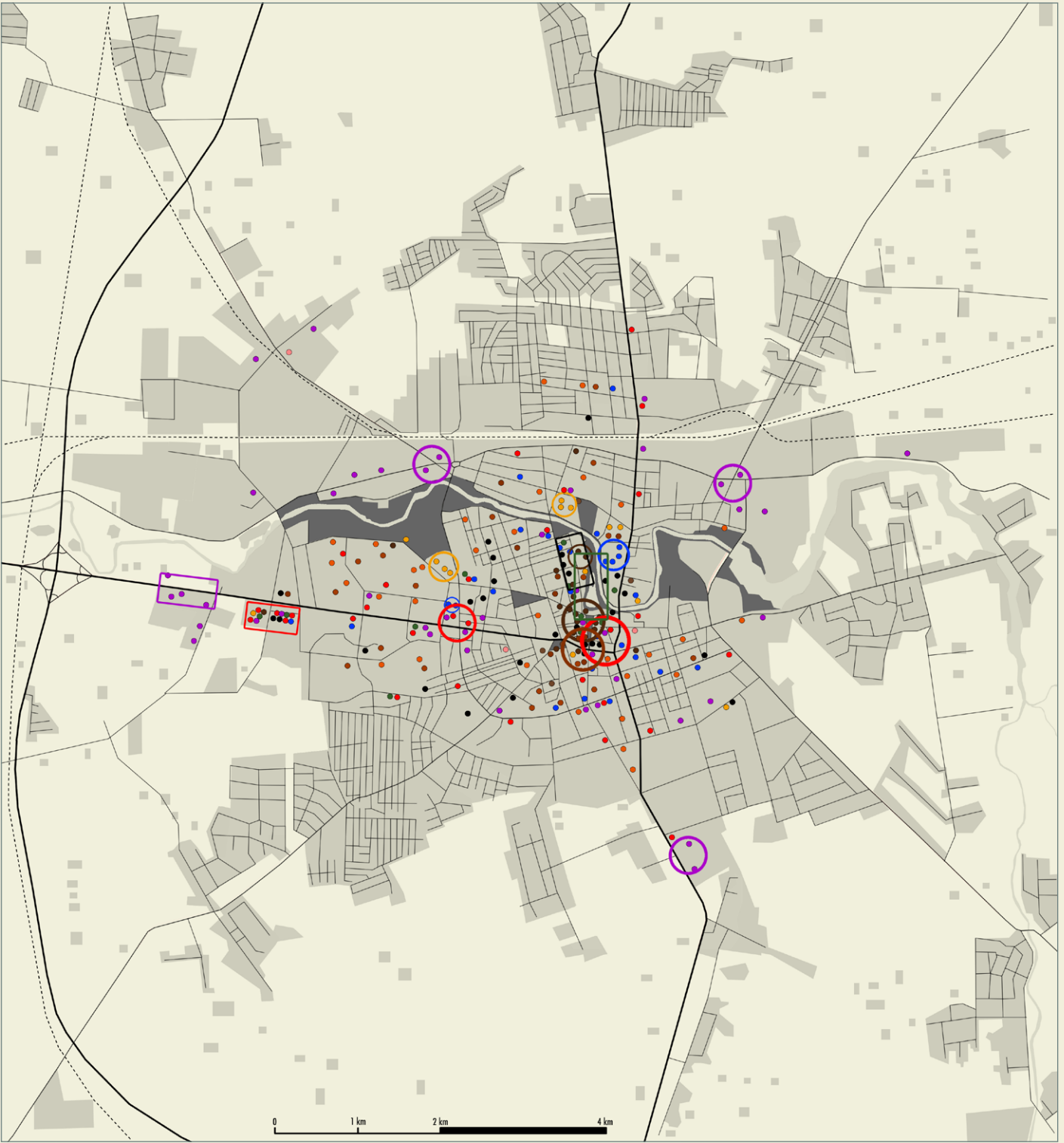
Non daily and regional services, source: author's image.

SPECIALIZED CENTRES

Contrary to the previously discussed maps of the facilities, this mapping does indicate distinction in the importance, intensity and size of the facilities or the agglomerations of the particular kind of facilities, therefore it serves for determining the specialized public centres.

The largest diversity of centres could be found in the historical city centre, dominated by the commercial, cultural, medical, entertainment, administrative and public facilities. The other distinct commercial centres could be found on the West side of the city and near the ring road.

All the larger commercial centres or larger agglomerations of smaller centres are close to the highway or regional connections. Specialized commerce centres are found close to the ring road and the main industrial areas. Cultural and sport facilities are establishing near the centre and the river. The river axis is the green axis of the city, where most of the entertainment and recreational facilities are clustered.



Specialized centres, source: author's image.

Legend

- Public, administrative
- Specialized commerce
- Markets
- Commerce
- Kindergardens
- Primary/secondary schools
- Higher education
- Religion
- Culture
- Entertainment, recreation
- Healthcare
- Sport

3.8. Mobility studies

Private motorized transport

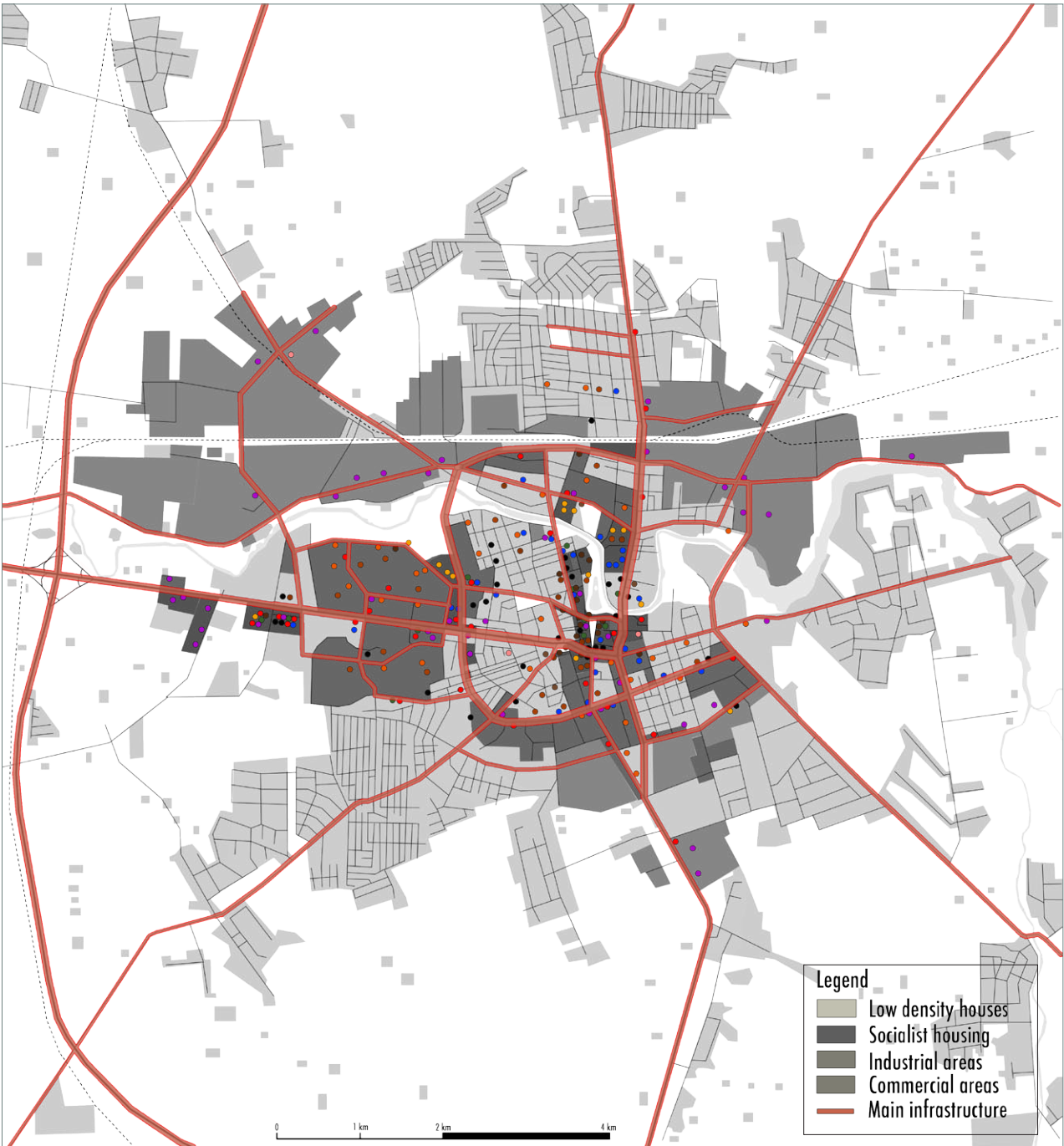
Most intense roads:

the roads in the central part of the city, especially the West-East and the North-South are the most congested. This is due to the most services concentrated in the central part and trips made from the suburbs and the region.

Medium intensity roads:

The traffic on the ring road, the regional roads and the highways are of medium intensity. The ring road is connecting the different functional and morphological areas of the city to the regional roads. These crossings of these roads have high congestion. Lower intensity roads:

The local roads of the socialist housing estates and the suburban roads have lower traffic intensity. These roads are distributing the traffic from a higher hierarchy arteries to the local districts. The local roads of the socialist housing estates are higher congested because these roads were not designed for a number of cars that are present in the districts.



Car traffic intensity, source: author’s production.

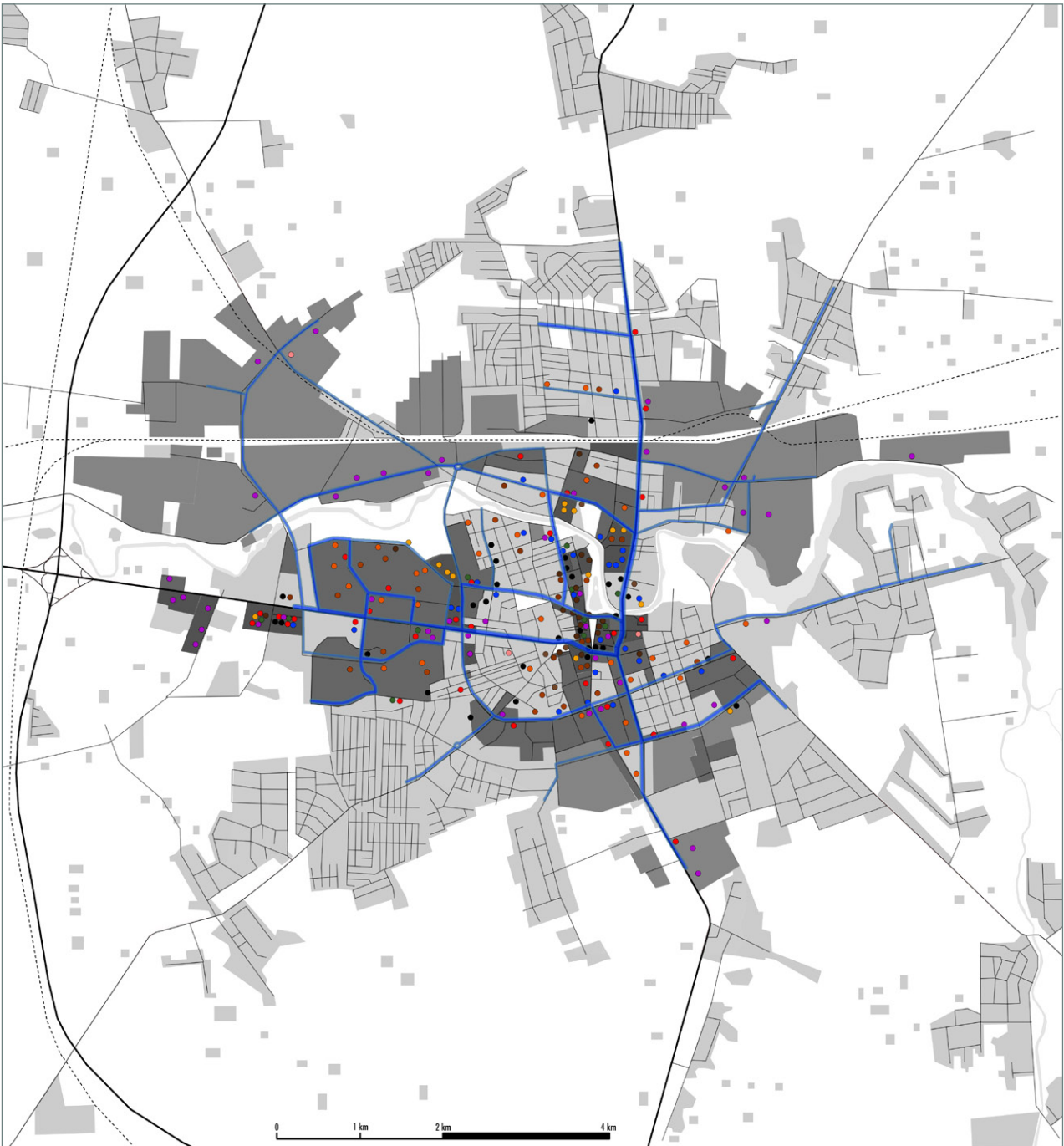
Local public transport

Public transportation was one of the most important element of the socialist city, which allowed to connect distant and functionally different city parts. The population density is highest in the socialist housing estates, therefore high enough to support the PT system. However, as the density of socialist housing has a potential tendency to decrease (due to the low space per capita), the viability of the PT has a threat to decrease. Due to high rates of automobilization strong decline in the use of public transportation is a trend in the post-socialist countries and in Lithuania as well (Grava, 2007).

10 % of all trips in the city are made with local bus transport. The highest intensity is visible in the city centre due to the large amount of activities clustered there. Lower intensity is visible in the ring road and the socialist housing estates, where most of the users are living. The suburban areas have the access to the bus networks but long trips and rare schedule is making it uncomfortable for these users.

Conclusions

-The routes of the bus network are still following the original socialist system (destination to destination through the centre). This makes the journey with a bus very long. An alternative system supporting faster journeys should be introduced.



Bus traffic intensity, source: author's production.

Regional public transport

The regional public transport consists of the regional bus service and the train service.

Bus service:

It is the most common mean to travel by public transport in the region. It connects the city with many destinations in the region and in the country. The position of the bus station is in the centre of the city with a good connection to the local public transport and regional amenities. The main roads that are used by this service are the regional roads and the ring road that connects them.

Current railway service:

Currently the railway service has only two destinations of bigger cities in Lithuania. It makes the railway unattractive because there are no possible ways to travel to the capital or other biggest cities. Only around 100 passengers/day are travelling from Panevezys by railway. The current station is on the Northern edge of the ring road, around 2.2 km away from the city centre.

New 'Rail Baltica' service:

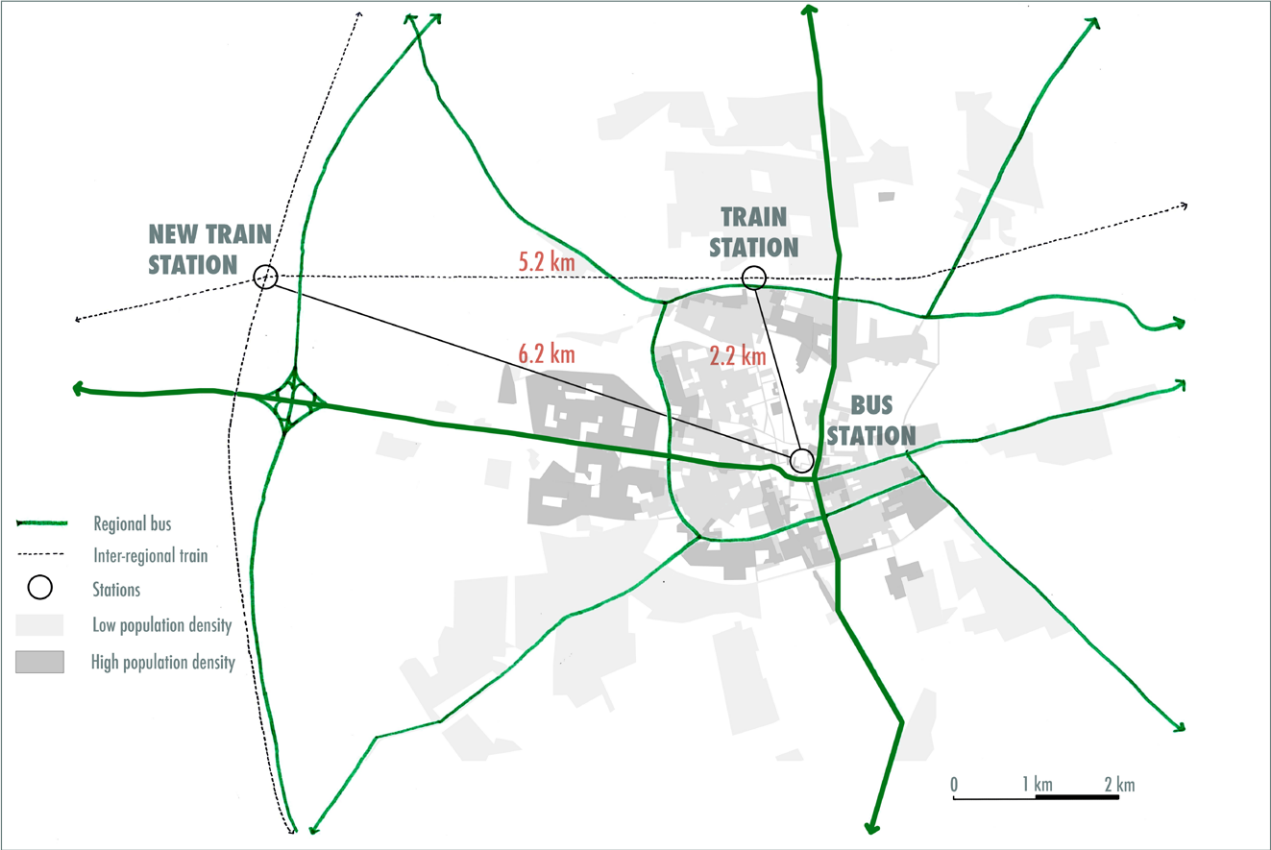
This service will introduce more destinations to the biggest national and international cities. Therefore, it will be used much more because generally railway transport is highly used in other cities. The new station, however, is planned outside the city (6 km away from the city centre) with no local bus connection.

-Automobile traffic is most intense on the regional roads that are important for commuting from the suburbs to the city centre. The ring road is also well used because it connects the different functional zones.

-Regional public transport routes see the same pattern to access well the regional roads.

-Local public transport is using the congested road system and is almost not functioning on the ring road.

-The intermodal change between the different regional public transport is uncomfortable and an alternative system should be introduced.



Regional public transport routes, source: author's production.

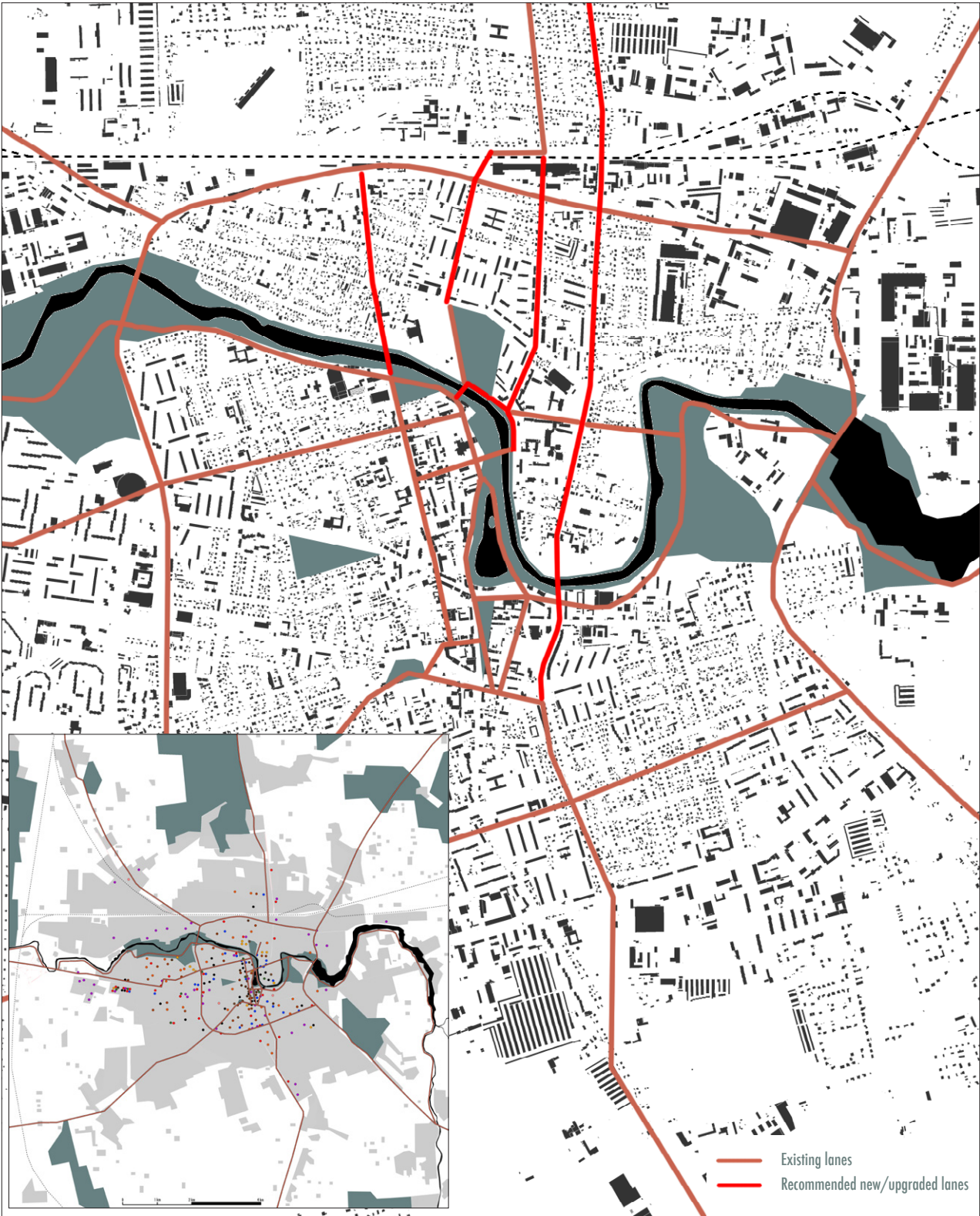
Cycling lanes

Cycling currently possess 2 % of total trips.

It used for commuting, as well as tourism and recreation.

A well developed regional cycling path network is present in Panevezys close to the regional roads, connecting the city to the suburbia, region and the recreational points and forests outside the city.

A discontinuity and lack of quality cycling lanes are visible in the city centre, especially on the northern side of the river. The network should be improved giving the equal access for the residents to the services and green spaces in the inner city.



Regional cycling paths in Panevezys, source: author's production.

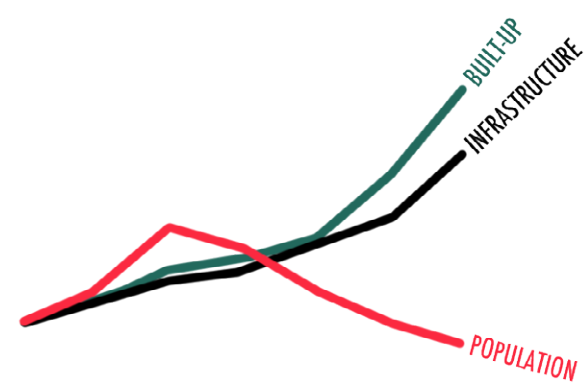
3.9. Conclusions

EMBEDDING NETWORKS:

According to the research on urban activity and mobility patterns, the structural elements are separated according to their importance on different scales.

There is a lack of connection between the regional and local elements:

- _intermodality between public transport terminals is complicated,
- _cycling lanes have discontinuity between the city centre and the regional roads,
- _there are not enough parking spaces on congested roads;
- _new important services are built outside the city far from local users;
- _new urban developments have not enough relation to the local level.



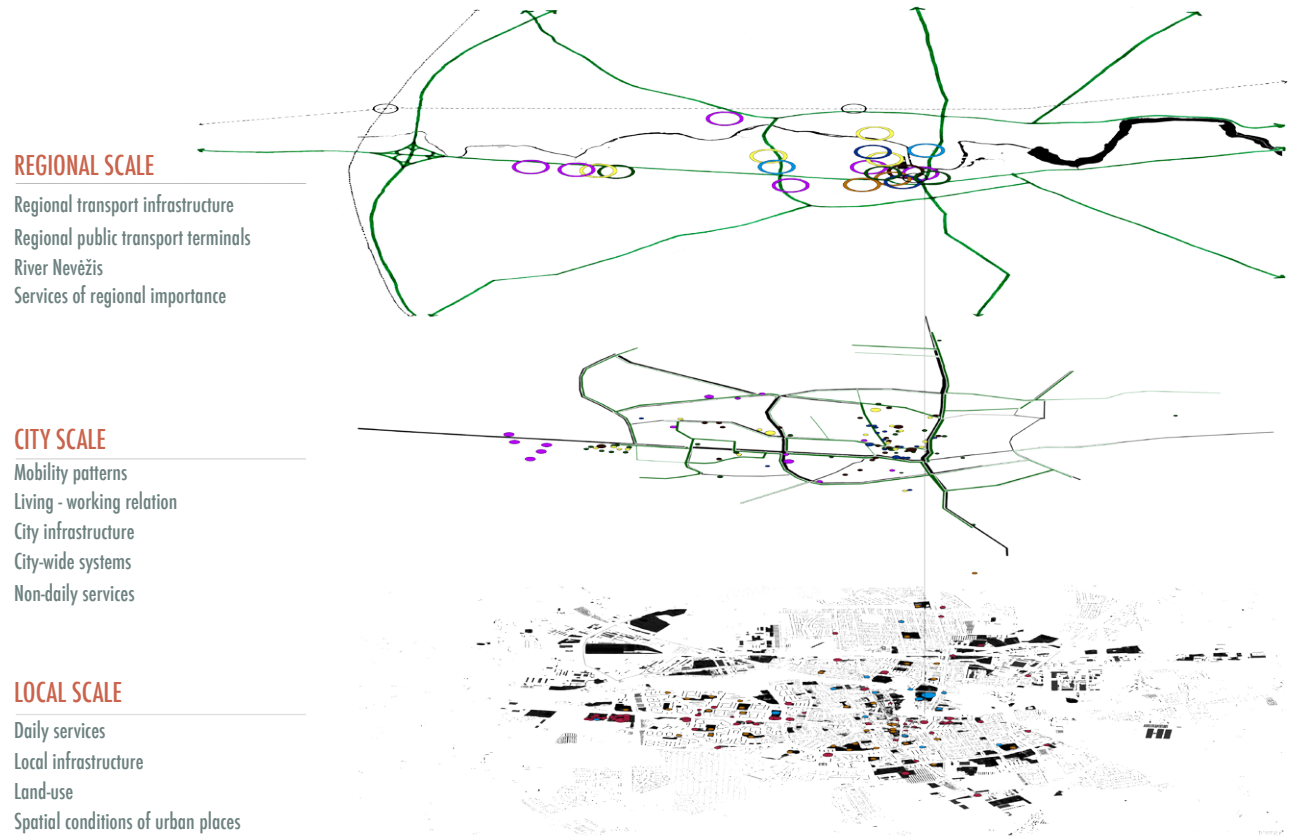
Expansive development in Panevėžys, source: stat.gov.lt

DIFFERENT TYPOLOGICAL AREAS:

The most actively used and having most qualities area is the city centre. This area should be consolidated to achieve the better operations and more responsive services.

The area of Socialist development has the most problems but also the most potentials for recycling.

Most of the developments in the suburbia are considered unsustainable. Strategies need to be developed to bring people back to the inner city.



Structure of importance on different scales, source:author's production.

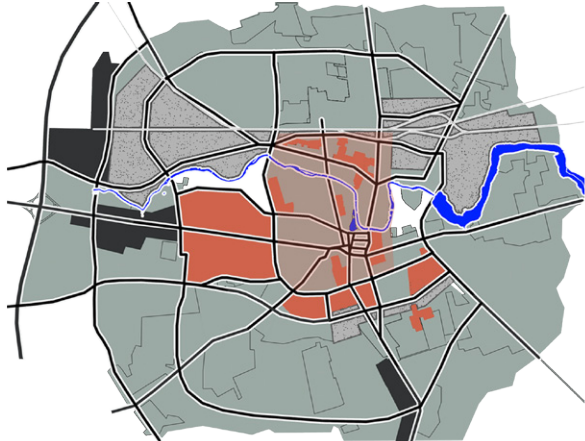
According to the current development trends and municipal development plans (Panevezys Comprehensive Plan, 2007), the next city diagram would probably develop further away from sustainable model extending towards the region with massive mono-functional zones, either highway oriented industrial and commercial centres or vast low-rise residential areas.

Sprawling Post-Socialist City (in terms of structure)

A city sprawling further into the region with extensive low-density private automobile dependant housing areas served by large highway shopping malls and connected to the inner city by freeways. The historical city center and adjacent areas of the inner city are gentrified, while the surrounding inner city with extensive socialist housing estates -‘a daughnut of decay’ are degraded into urban slums (Stanilov, 2007).

Private City (in terms of the public space)

‘The public realm is shrunk to the corridors serving exclusively the utilitarian function of moving motorized traffic, with a heavy accent placed on the needs of the private automobile. Places for gathering are limited to: the parks (some of which are also private); the streets downtown (dominated by the offices of private corporations); and a few market places (developed by corporate sponsors as theme parks for shopping and entertainment). Cities in the southern parts of the U.S., such as Atlanta, Phoenix, and Houston, come to mind as fitting this description’ (Stanilov, 2007).



Threats of urban sprawl in the future, source: Comprehensive plan of Panevezys.

PROBLEM STATEMENT

Insufficient management of the historical and socialist legacy and unbalanced development of the post-socialist city bring threats of social and environmental sustainability, particularly in terms of social segregation, loss of urban vitality, inefficient land use, environmental pollution and expensive to maintain urban structure.



Insufficient recycling of historical layers



Unbalanced post-socialist development



Problems of the post-socialist development, source: reproduced from Buinevicius, 2010.



4. VISION AND STRATEGY

Approach

Vision

Strategies

In this chapter alternative position towards problematization and approach towards vision are introduced. Vision for the city and the strategies are developed.



4.1. Approach

Problems of the post-socialist city (socialist legacy and recent development trends). Adopted from Stanilov, 2007:

- _Socio-spatial fragmentation;
- _Urban sprawl;
- _Incoherent spatial transformations;
- _Commercialization of public space;
- _Automobilization;
- _Lack of spatial-functional integrity.

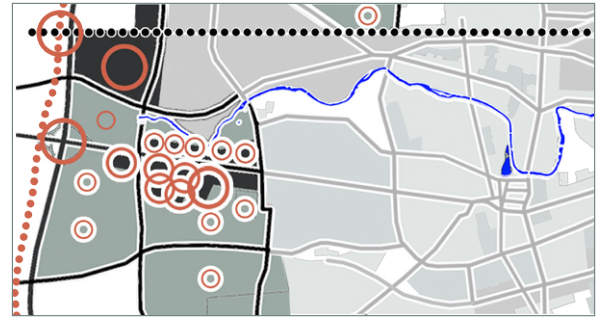
'The lack of clear vision about how cities should grow, which dominated the early years of the transition period and was used by many private developers to maximize their short term profits, is currently bemoaned not just by the residents, who were left with the short end of the stick, and municipal authorities, who find it difficult to service the chaotically developed urban areas, but by the private investors themselves, who have found out that good urban planning can improve the marketability of their products and, ultimately, increase their profits' (Stanilov, 2007: 13).

There is an approach that population decline might be an opportunity. It can open the way to renewal and modernization, it can offer opportunities for quality improvement and provide an incentive to mobilize the endogenous resources of regions through the collaboration of public and private sectors. Declining population can provide opportunity for a dialogue on coping with demographic change and, ideally, a basis for developing a new fundamental societal consensus (Müller and Siedentop, 2003).

During the transformation, creating economic development opportunities was the overriding concern, pushing all other considerations into the background. The overly permissive attitude of local authorities towards new development echoed the philosophy of the state governments of encouraging new investments at all costs, with little concern for assessing potential negative social or environmental impacts' (Stanilov, 2007: 355).

Communication among the various professionals involved in urban planning has been difficult. The current triangle (architect, developer, builder) still caters to a 'spatial reality' that is not efficiently connected with issues related to sustainable economic growth, social diversity and justice, and stewardships over natural and environmental resources (Friedman, 2005). 'Currently, not all roles, needs, and interests of the various actors are recognized, even when sometimes they overlap. Private developers and investors, on the other hand, have become powerful and important players, whose activities in the land development process should be more efficiently regulated (Stanilov, 2007: 407).

The guidelines and models of urban development provided by Western European institutions did not solve the issue, since the majority of EU's pre- and post accession programs and financing have been directed towards transnational corridors and improvements in regional road infrastructure



Growth oriented planning in Panevezys, source: author's image.



'Decline' oriented planning in Panevezys, source: author's image.

towards transnational corridors and improvements in regional road infrastructure. National policies in the CEE countries have followed blindly this agenda, committing a majority of their limited resources to the implementation of such projects without much reference to local context and needs. 'The urban dimension of the ESPD is fairly vague in its recommendations and broad in its scope. Some of the most critical issues in the development of the post-socialist cities – urban transport, brownfield development, suburban sprawl, large housing estates – are mentioned only in passing' (Stanilov, 2007: 356).

If we take the sustained development postulate seriously, not only the harmonization of economic, social, and ecological developments is more strongly focalized than under conditions of growth but also the 'intergenerational effects' of today's decisions: whether and under what conditions future generations can be expected to bear higher per-capita spending. This suggests that, in making decisions on urban expansion, redevelopment, or downsizing, much more attention must be paid in the light of demographic developments to the economic life of facilities and their conditions of use' (Müller and Siedentop, 2003).

A more urban structure would help to solve problems of urban sprawl. Therefore strategies need to be made to bring people back to the city.

The scheme of comparison of suburban sprawl and urban city (Dennis & Urry, 2009:113) illustrates the position that should be taken in future design of the city.

Aimed qualities

Sprawling City

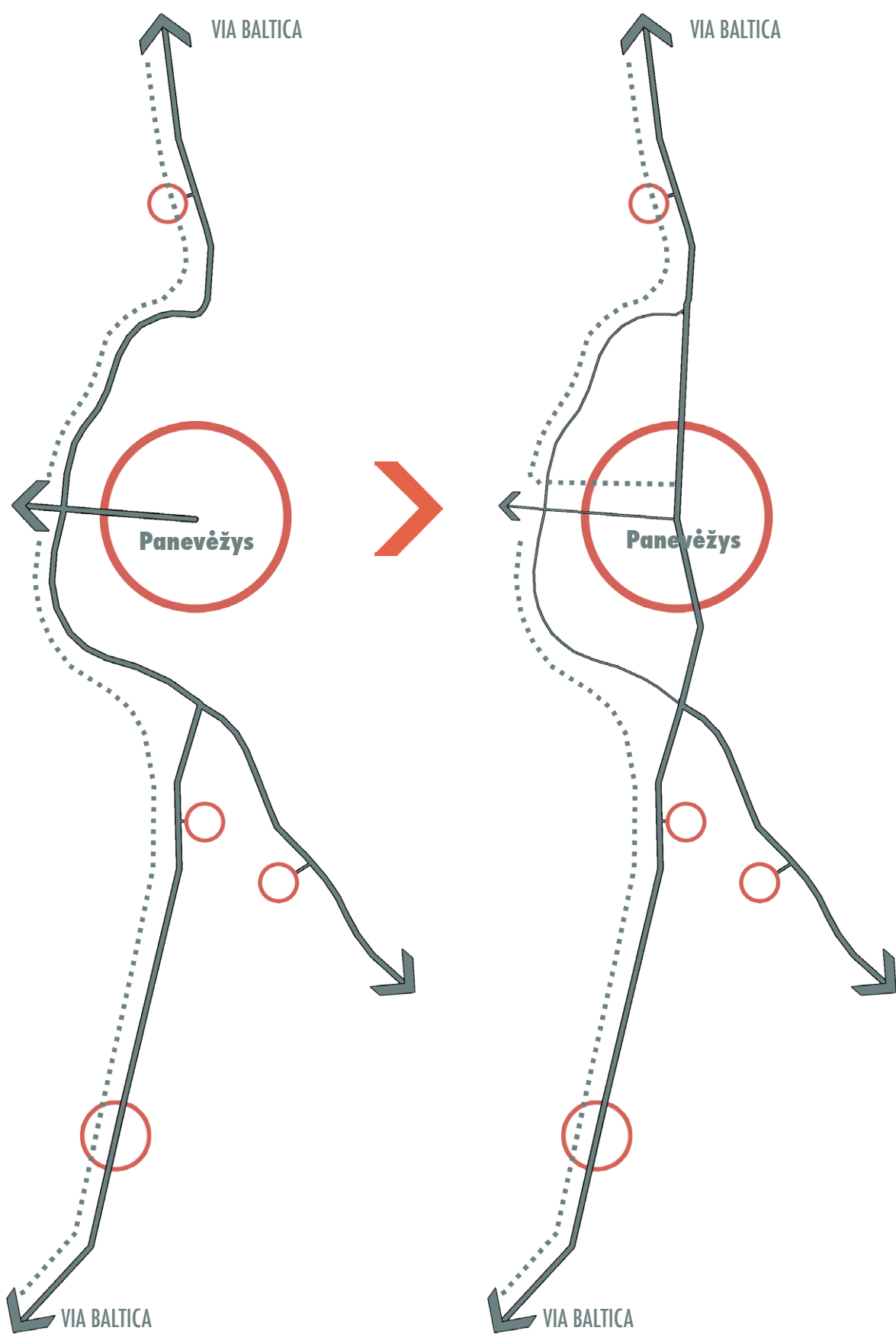
- Zoned development
- Social and functional segregation
- Car dependence
- Disconnected public spaces
- Parking, buildings and freeways
- Minimum parking spaces
- Sence of anonymity
- Large scale developments
- Superstores and big shopping complexes
- Driven by market forces
- High energy
- High carbon dioxide emissions

Compact city

- > **Mixed-use** development
- > Social and functional **integration**
- > Predominance of **pedestrians** and **cyclists**
- > **Interconnected** public spaces
- > Planning for **walking** and **cycling**
- > Parking space **capping requirements**
- > Sence of **community**
- > Neighbourhood-**human-scale** developments
- > **Corner shops, local** shopping areas
- > Driven by a **vision**
- > **Low energy**
- > **Low** carbon dioxide **emissions**



Redefining the integration to the 'Via Baltica'



In order to combat the negative impacts of driveable suburbanism, focus should be on:

1. Urban restructuring;
2. Urban transformations;
3. New developments.

Therefore, the integration to the 'Via Baltica' should be focused on the corridor that passes through the city, rather than the highway, going around the city. The new developments in the inner city would lead to more sustainable patterns, as the inner city has many qualities, that would pay dividends for the developers long-term (existing infrastructure, better accessibility from the local residents).

Moreover, this axis is already very active, as seen in the urban activity and mobility studies. The Southern-Northern line, however, is missing continuity and has potentials to be consolidated. The development line would not only benefit the central areas but also the socialist housing and industrial areas that are close to it.

This new interpretation would allow to exploit advantages and explore possibilities to integrate and reuse ('recycle') old structures by applying new spatial and functional connotations.

The developments in the suburbia close to the 'Via Baltica' roundabout are stimulating the following problems:

Weak integration of the historical and socialist urban structures because of the focus of new developments towards the suburbs;

Post-socialist city should be problematized as unsustainable development.

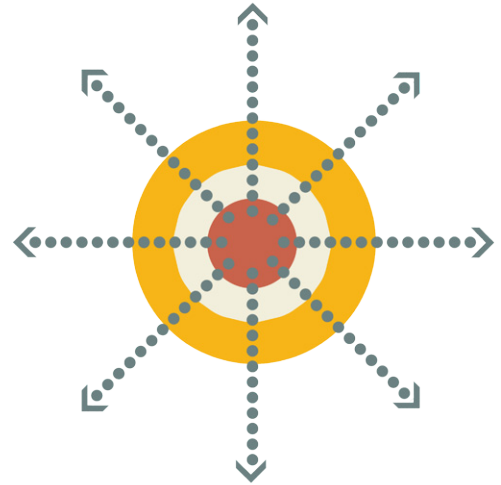
Perspective towards historical legacy should be changed concentrating on the potentials of the existing structures.

'While Europe is looking towards sustainable development for future, cities in post socialist countries appear to be moving opposite direction - away from sustainability' (Tosics, 2004).

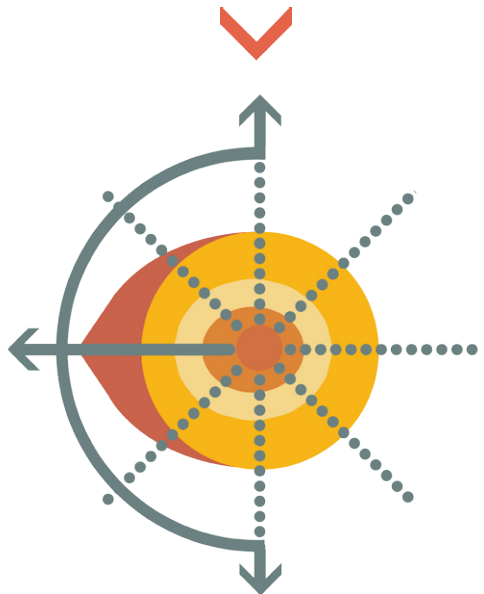
Potentials of the historical and socialist city structures:

- _Public transportation;
- _Compact form and high density;
- _High enough residential density to support public facilities and infrastructures (and public transport);
- _Well defined boundaries of the city;
- _Vast open spaces (parks, squares, streets);
- _Availability of public facilities;
- _High degree of social coherence;
- _Large share of land under the public ownership.

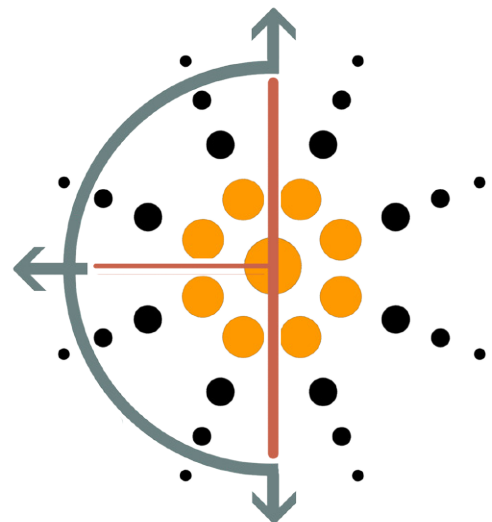
Historical concentric development



Linear post-socialist development



Proposed central development



Finding compact city form by consolidating existing structure

Structures of the historical and socialist cities in the inner city (public transportation system, socialist housing estates and abandoned industrial areas) could be used to consolidate the structural city diagram.

Adopted from Stanilov (2007): 'If the positive aspects of historical structures could be preserved, Europe would gain a lot to reach her very ambitious sustainability goals' (Tosics, 2005).

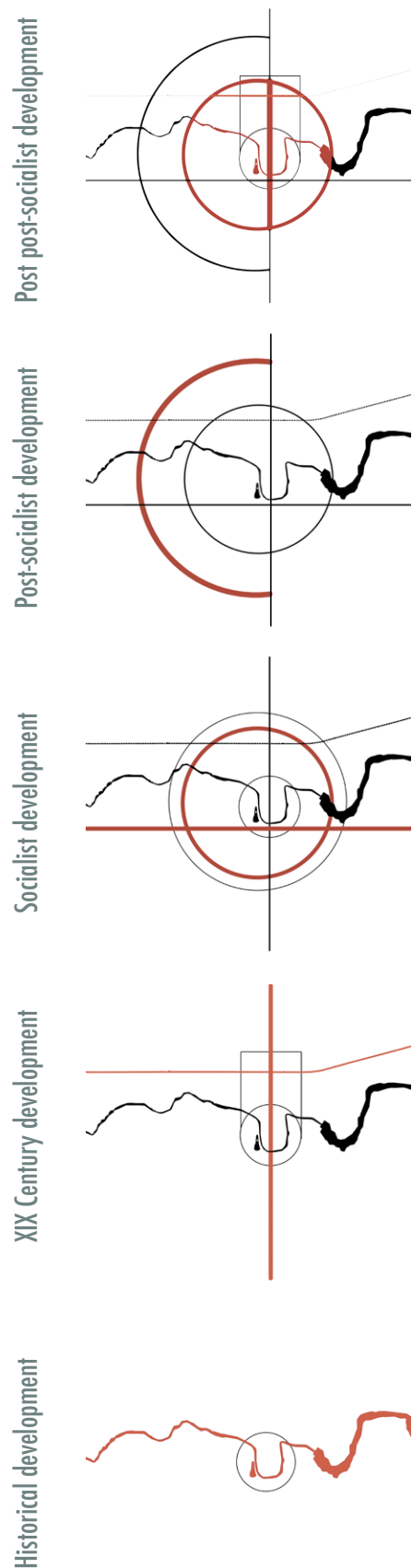
Because of the weak appropriation of the historical and socialist cities in the post-socialist city, when new layers of structures transform preceding layers are not relevant.

More relevant approach could be the inverted, 'downward' transformation approach, which would establish perspective from the historical and socialist cities herewith recognizing the potential relevance of the spatial structures of the historical and socialist legacy.

The reutilization of such structures depends on many factors, such as (Stanilov, 2007):

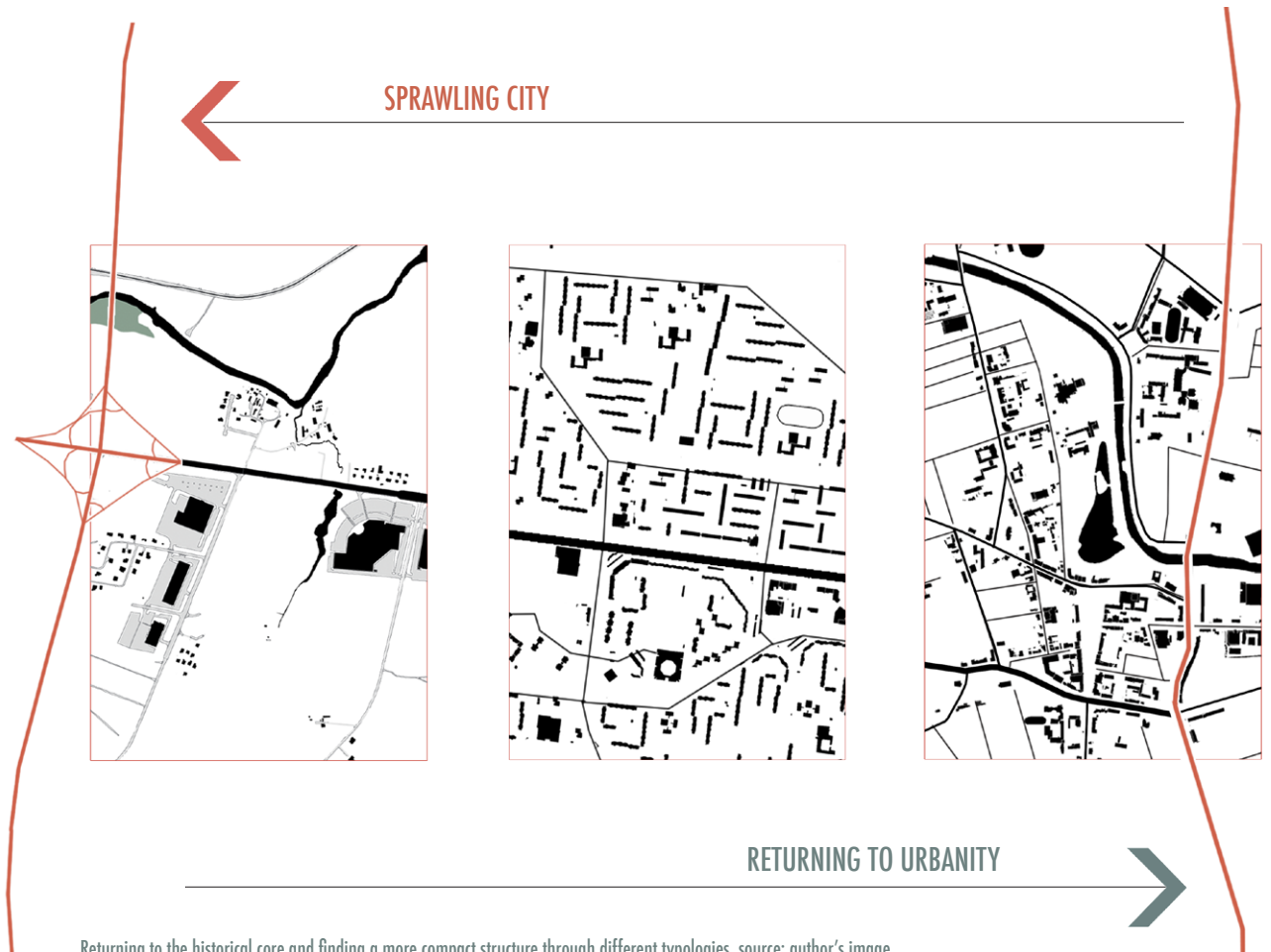
- their size and location;
- accessibility;
- ownership structure;
- condition of their building stock and infrastructure;
- existing development regulations;
- the quality of their surroundings.

The central city, according to these factors have the most qualities. Therefore it is the most strategic place for the new developments. However, this area should adapt to the changed needs of the developers and inhabitants.



Recycling historical structures, source: author's image.

Returning to urbanity of the city centre



Returning to the historical core and finding a more compact structure through different typologies, source: author's image.

ADVANTAGES

- More compact structure would be cheaper to maintain and easier to control its city-wide systems, as public transport, green structure.
- More compact structure would use the existing road, electricity, gas, water, internet infrastructure, without a need for new construction.
- Mixed-use development would be integrative socially and functionally, creating environments more suitable for service-based economy.

DISADVANTAGES

- Requires a change in spatial planning towards a more strategic and cooperative planning between public/private sectors.
- Requires a long-term action plan for a fluent implementation of the strategies.
- Might be more expensive short-term in some cases.

4.2. Vision: from greenfield to reuse

A vision for consolidation of a concentric city form is proposed, which refers to the qualities of Compact City and Open City models. The new model emphasize on the developments within the city (urban restructuring and regeneration), development of sub-centres on the ring road, and improvements in public transportation system.

Compact City (in terms of structure)

Compact city is 'a relatively high-density, mixed-use city, based on an efficient public transport system and dimensions that encourage walking and cycling ' (Burton, 2000: 1970).

Open City (in terms of public space)

'Its features are best exhibited by some of the most celebrated cities of Western Europe such as Paris, Vienna, and Amsterdam. Public space here is treated as an integral element of the urban fabric, structuring space and movement in the city. This framework is supported by an excellent public transit system in an overall transportation scheme that treats the automobile as an equal participant in the urban circulation. Priority is placed on the needs of the people experiencing the city by foot ' (Stanilov, 2007).

Embedding networks (in terms of multiplication of urban networks)

Network of internal and external stakeholders, who make demands concerning the social, economic and environmental impacts and their contribution to place making. The concept emphasizes the necessity for multiple network integration for a higher interaction of stakeholders.

The strategy consists of:

Strategy 1: Upgrading public transport system

- _Improving the integration of regional transport with the local transport;
- _Introducing high quality urban transport system: Bus Rapid Transit system (BRT);
- _Integrating public transport and public space.

Strategy 2: Developing the Central-Northern axis of the city:

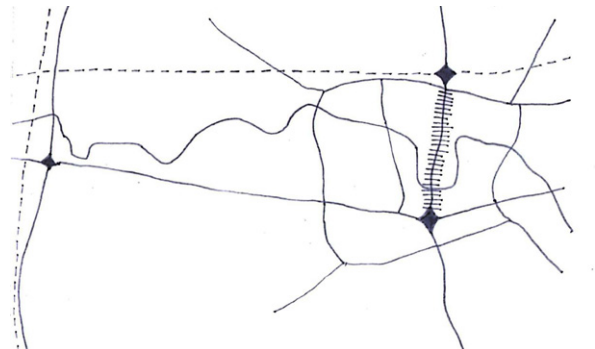
- Intermodal public transport terminal by a brownfield redevelopment;
- Intensification and public space upgrade for the city centre;
- Socialist housing estate regeneration and intensification.

New city model is expected to:

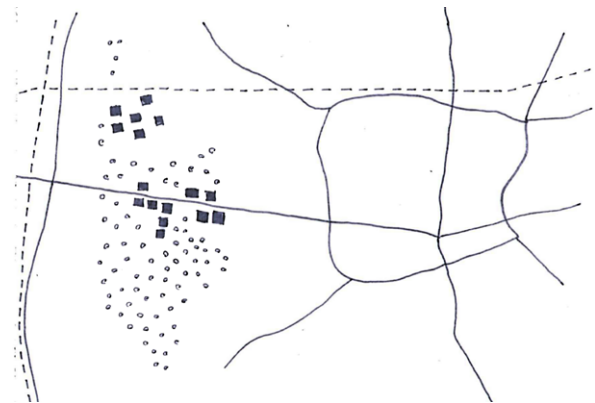
- _reduce suburban expansion;
- _facilitate suburban periphery;
- _increase usage of public transportation;
- _increase quality of public space
- _regenerate socialist housing estates



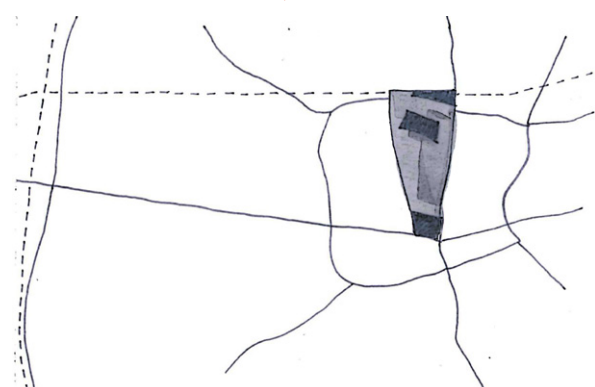
Current nodes of mobility, source: author's image.



Aimed combined nodes of mobility, source: author's image.



Aimed consolidation of the Northern axis, source: author's image.

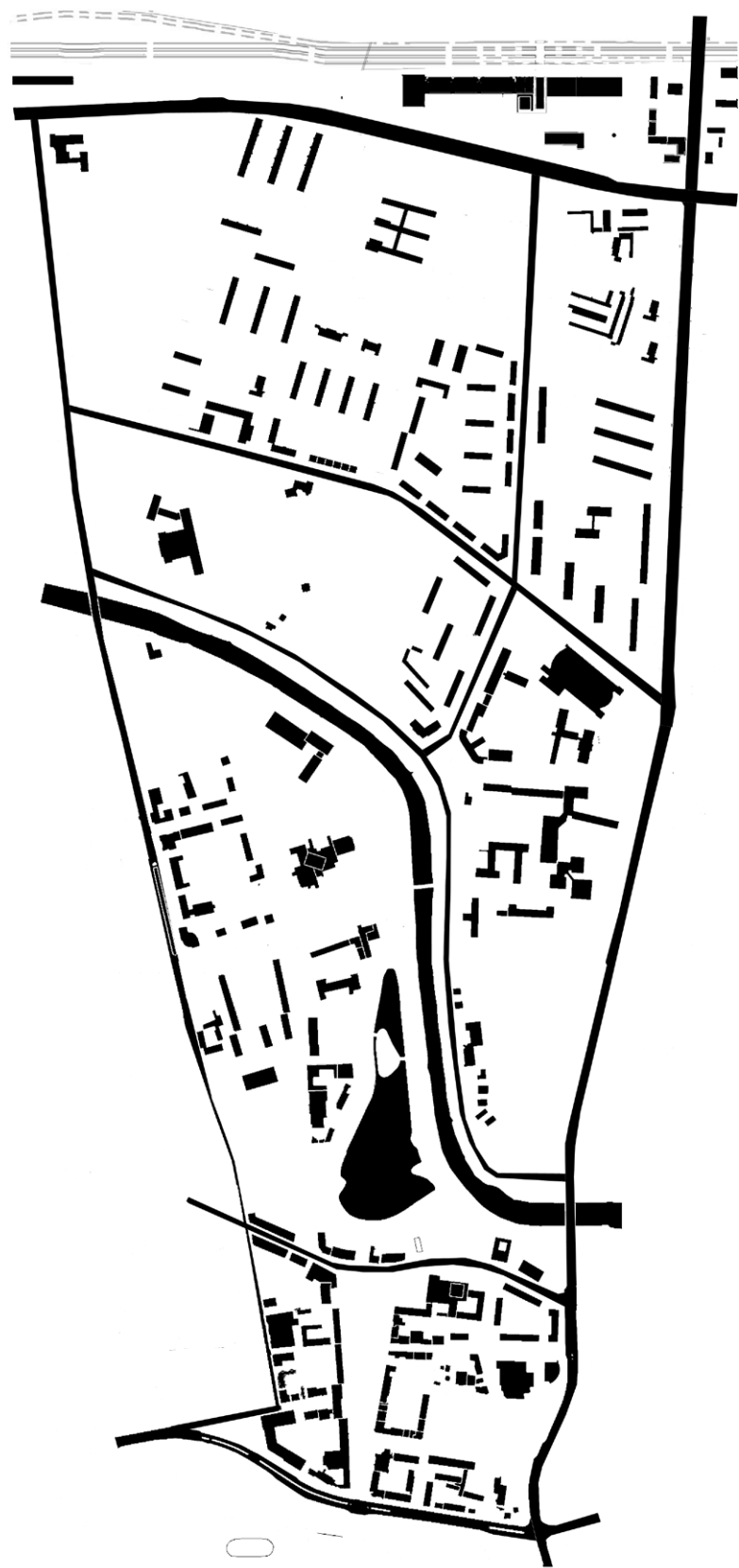




Territories to be recycled, source: author's image.

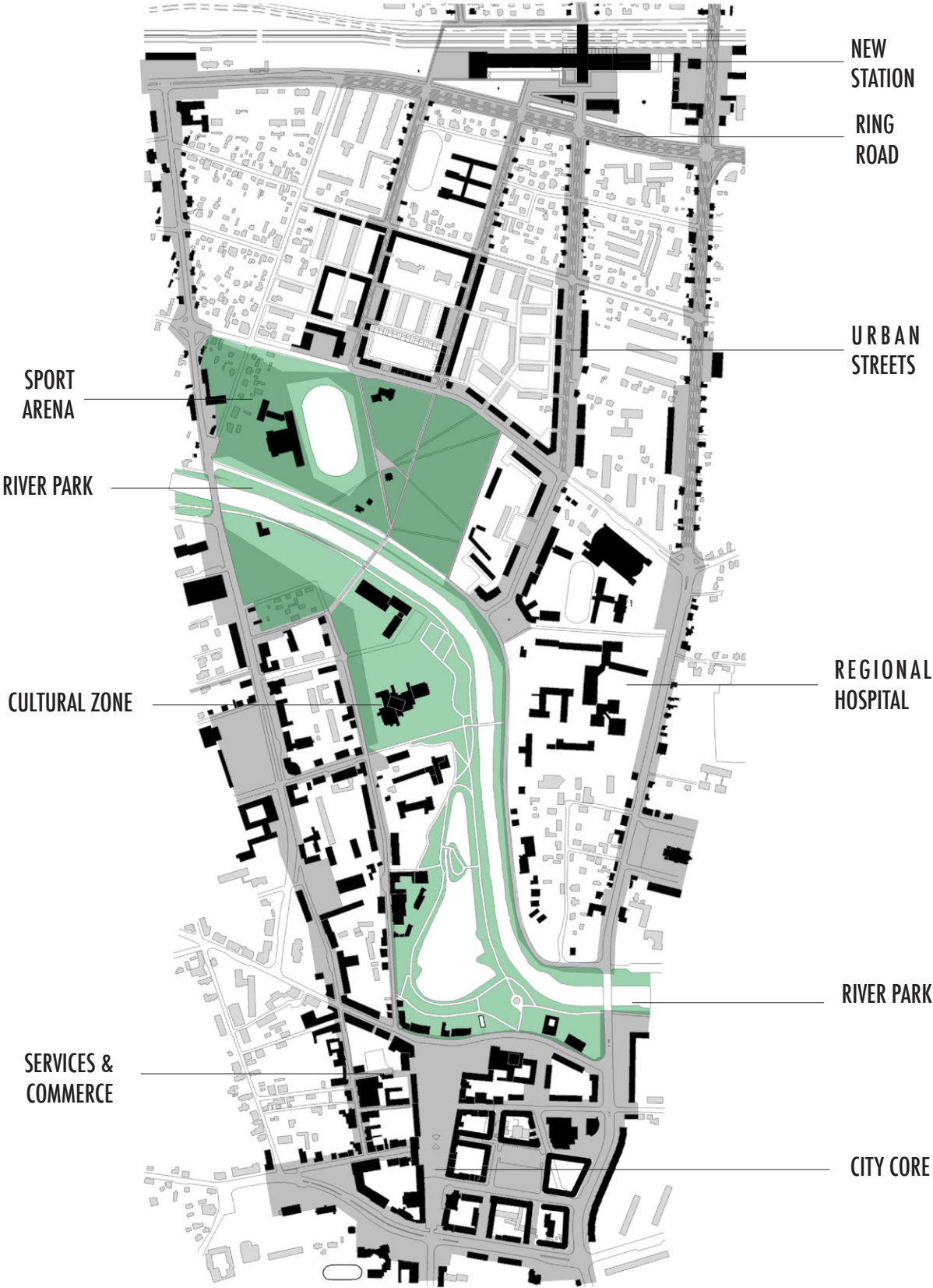


Pilot projects for the vision: author's image.



Buildings and structures are not forming clear identities (BEFORE)

Creating urbanity that would cross different structures



Buildings and structures are forming clear identities (AFTER)

4.3. Strategy 1: Upgrading the public transport system

Why BRT in Panevėžys?

- _high quality service (adequate to tram);
- _economically viable;
- _user attractive;
- _flexible to implement and adjust to urban changes;
- _suitable for inter-modality (bicycle on board);
- _rapid implementation.



BRT carriage in Dublin, Ireland source: www.itdp-china.org

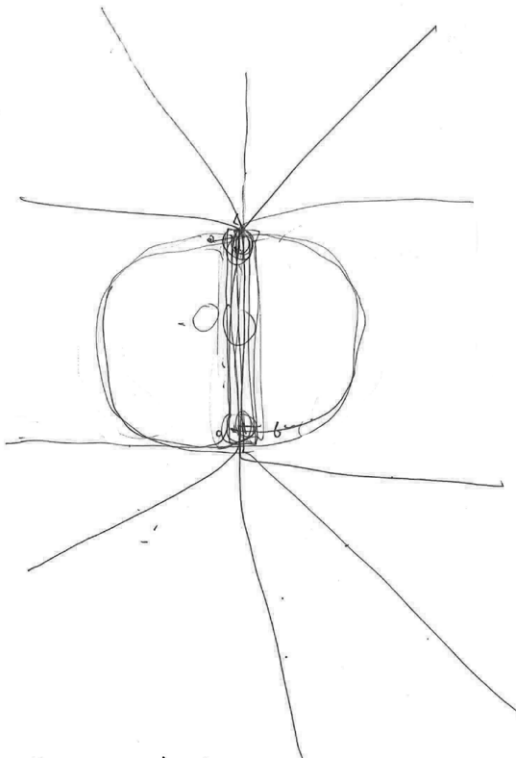


Impression of Bus Rapid Transit (BRT) system, source: Buinevicius 2010.

What is a BUS RAPID TRANSIT (BRT) system?

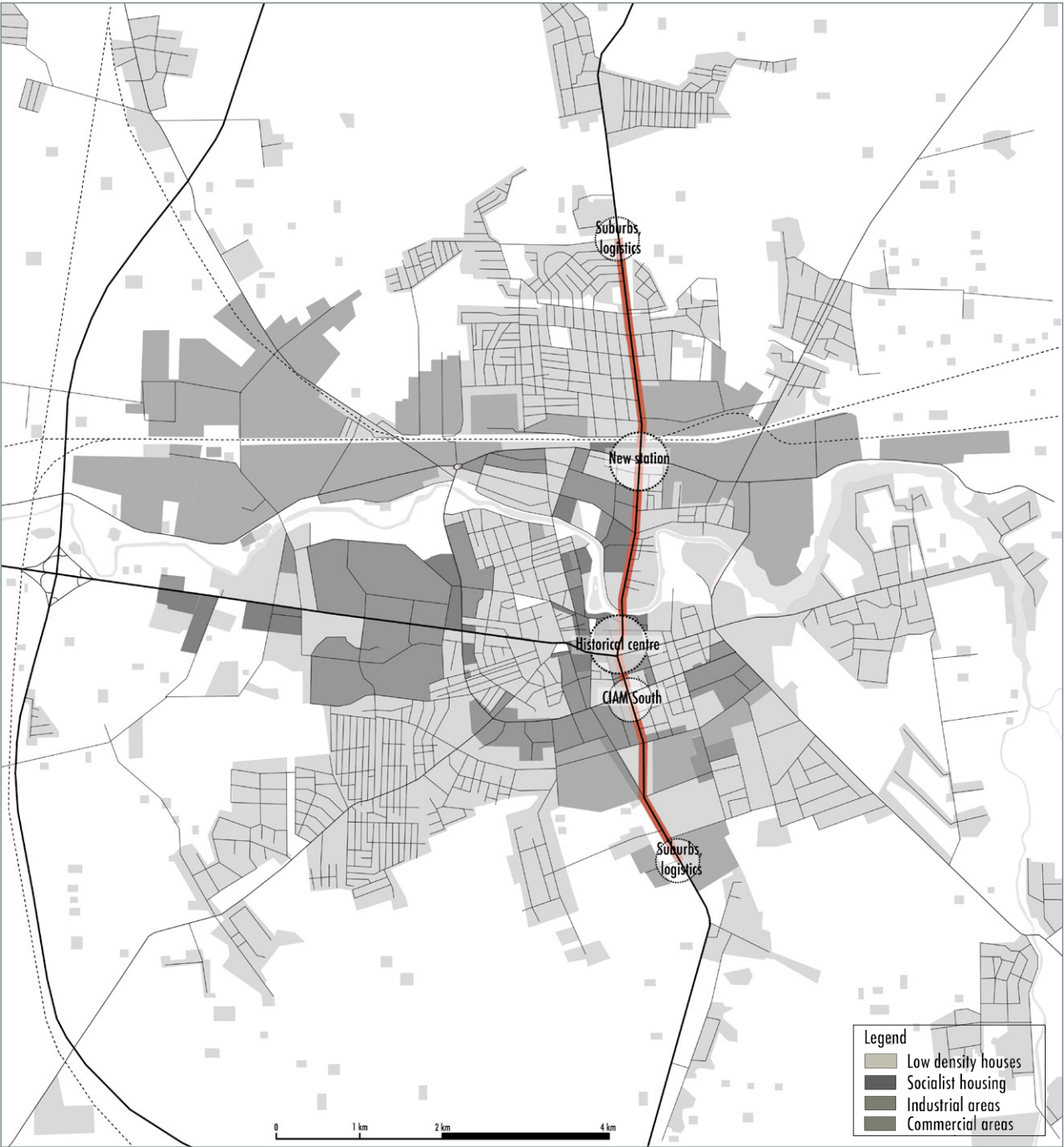
The Institute for Transportation and Development Policy defines a Bus Rapid Transit as a ‘high-quality, customer oriented transit that delivers fast, comfortable and low-cost urban mobility.’ The ITDP regards a system as Bus Rapid Transit when it comes with most or all of the following elements:

- _ Dedicated bus corridors with strong physical separation from other traffic lanes.
- _ Modern bus stops that are more like bus ‘stations’, with pre-board ticketing and comfortable waiting areas.
- _ Good station access for taxis, pedestrians and cyclists, and adequate storage facilities for bikes.
- _ Land-use reform to encourage higher densities close to BRT stations.
- _ Large, high capacity, comfortable buses, preferably lowemission.
- _ Differentiated services such as local and express buses.
- _ Prioritization at intersections either as signal priority or physical avoidance (e.g., underpasses)
- _ Co-ordination with operators of smaller buses and paratransit vehicles to create new feeder services to the bus stations.



Concept of the new public transport system: author’s image.

Main BRT nodes



Main Bus Rapid System nodes: author's image.

BRT routes consist of:

-the main Northern-Southern axis line. The main principle of BRT line is to strengthen links inside the inner city and improve connectivity between the main centre and the new station sub-centre.

The connection would allow a faster, more networked and more convenient travel between the functional areas of Panevėžys, as well, as a comfortable inter-modality between different means of transport.

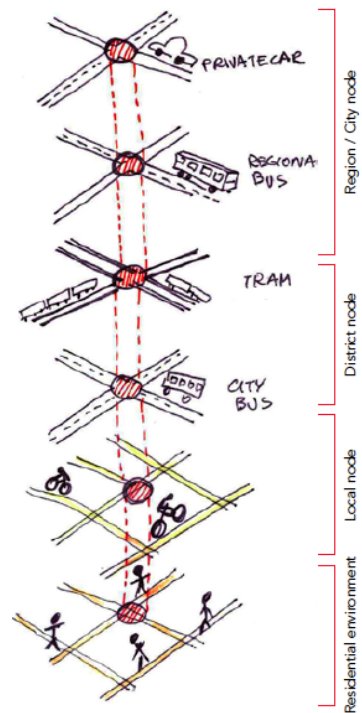
Activating public space



Activating public space: author's image.

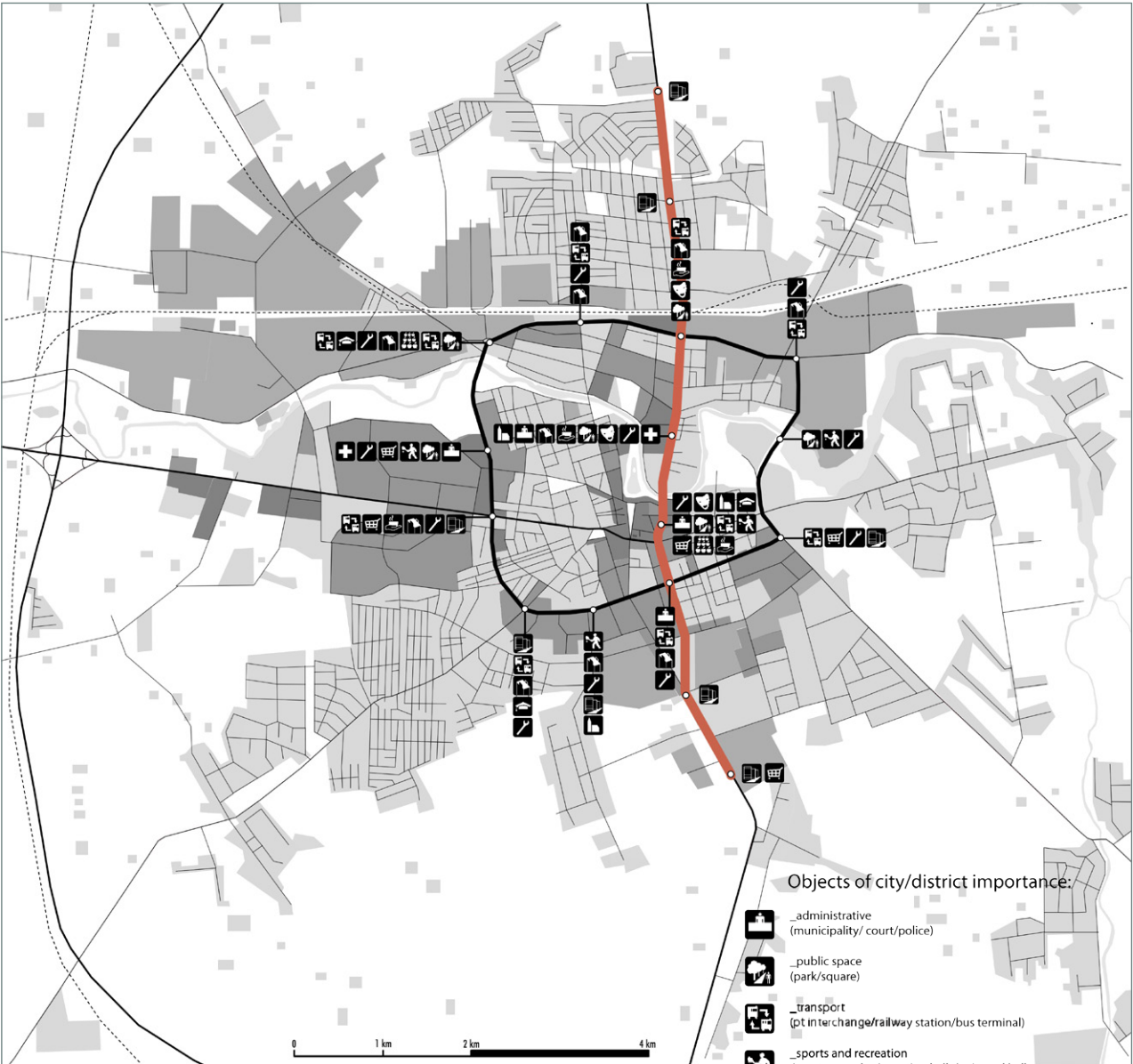
BRT routes would bring impulse to reconstruct transport corridors into quality public space as well as extend potentials of the existing public space and enhance commercial development opportunities around the BRT stops.

Combined with a new bus route travelling on the ring road, the system would create higher hierarchy of public transport, as well as, make the whole system more networked and faster.



Combining different transport nodes, source: Muliolyte, 2010.

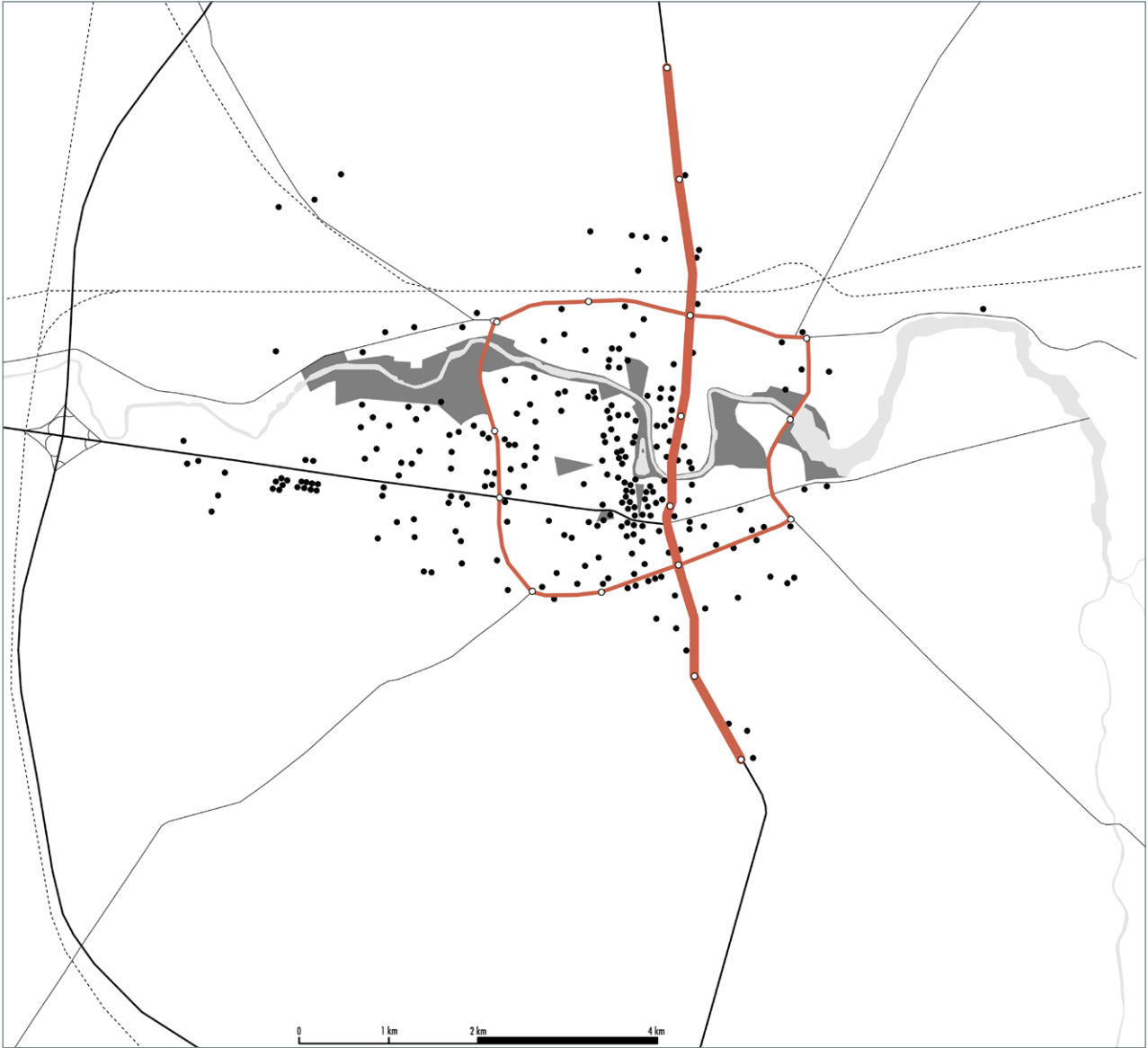
Connecting activity zones and places



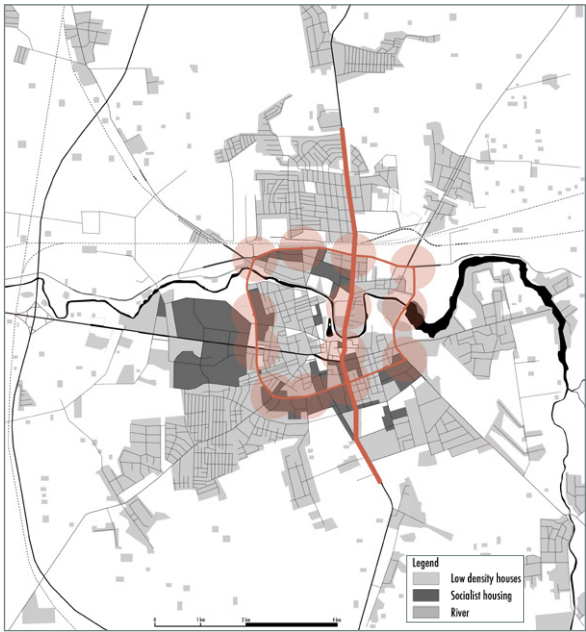
Connecting activity areas: author's image.

-BRT routes would embrace objects of city and district importance, reinforcing public places and improving accessibility to services, also bringing reinforcing potential for new developments of services around the stations.

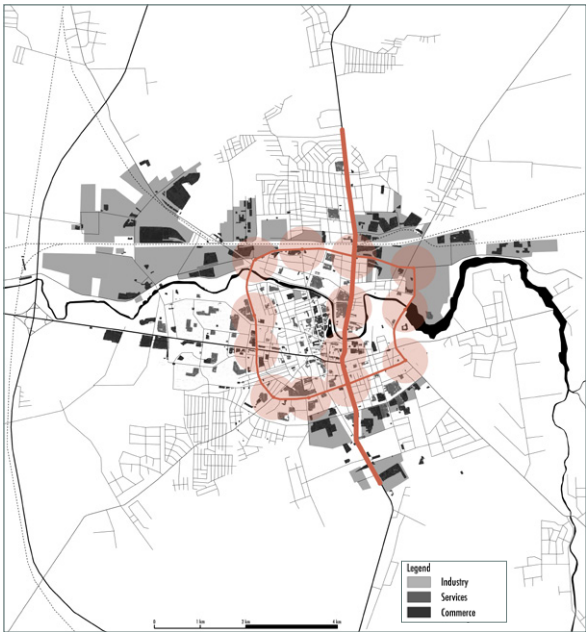
-BRT routes would connect zones of the highest activity as well as specialized centres in the city.



Embracing activity zones: author's image.



Serving most of the population: author's image.

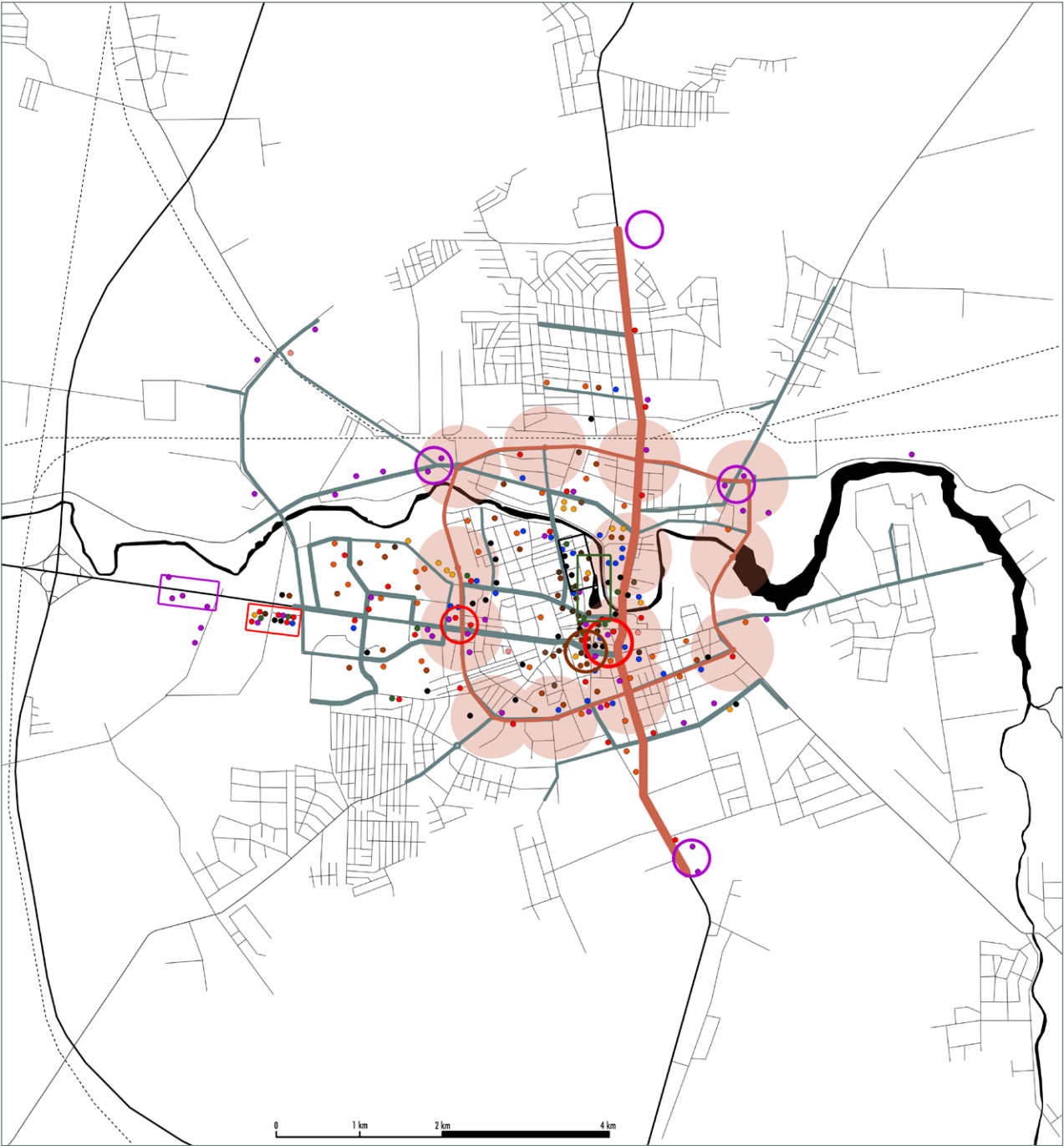


Connecting job places: author's image.

BRT routes would connect zones of the highest activity as well as specialized centres in the city.

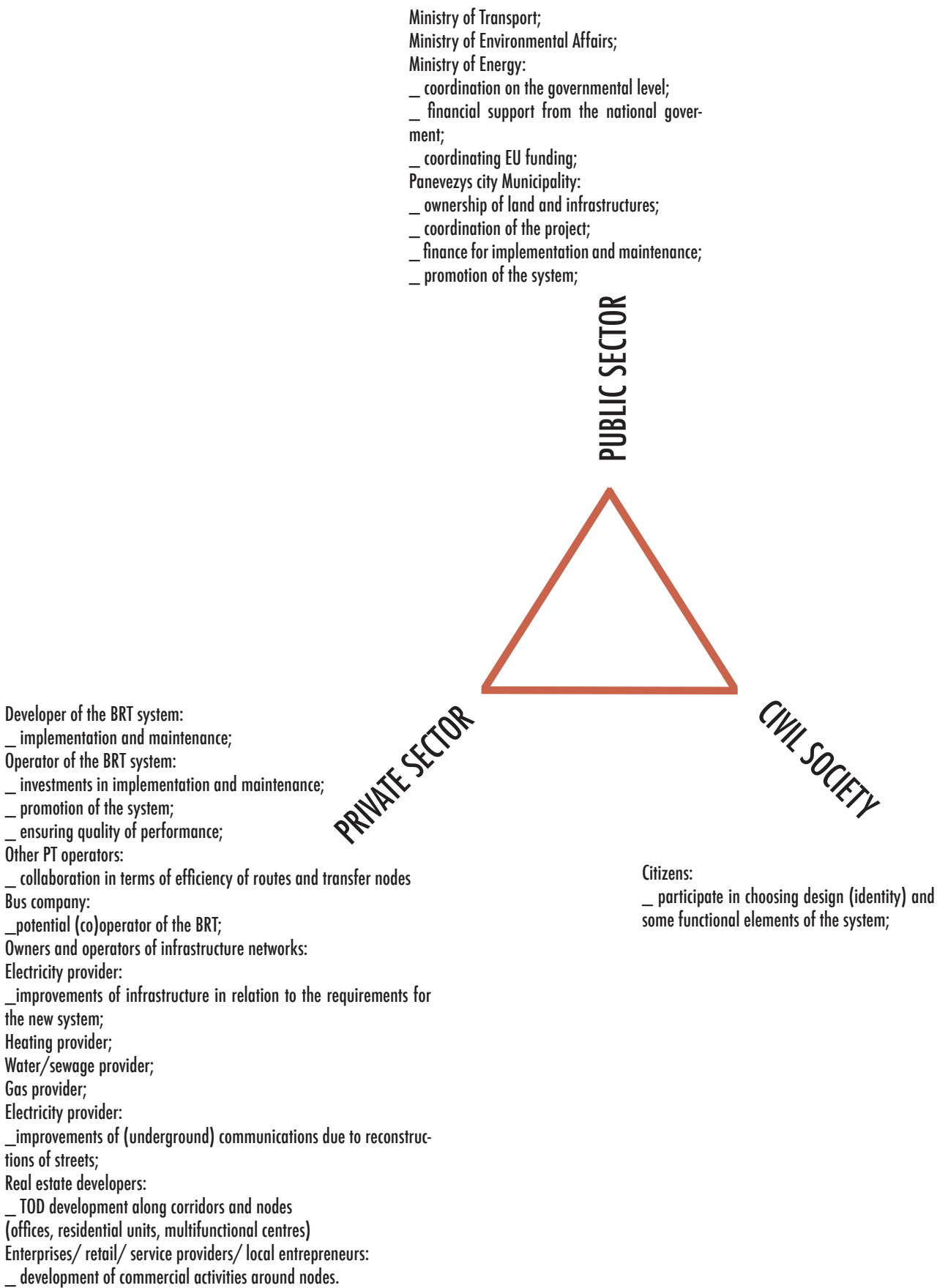
BRT would serve most of the population and, in combination with the existing public transport, would connect to most of the job places in the city.

Combining with the existing public transport

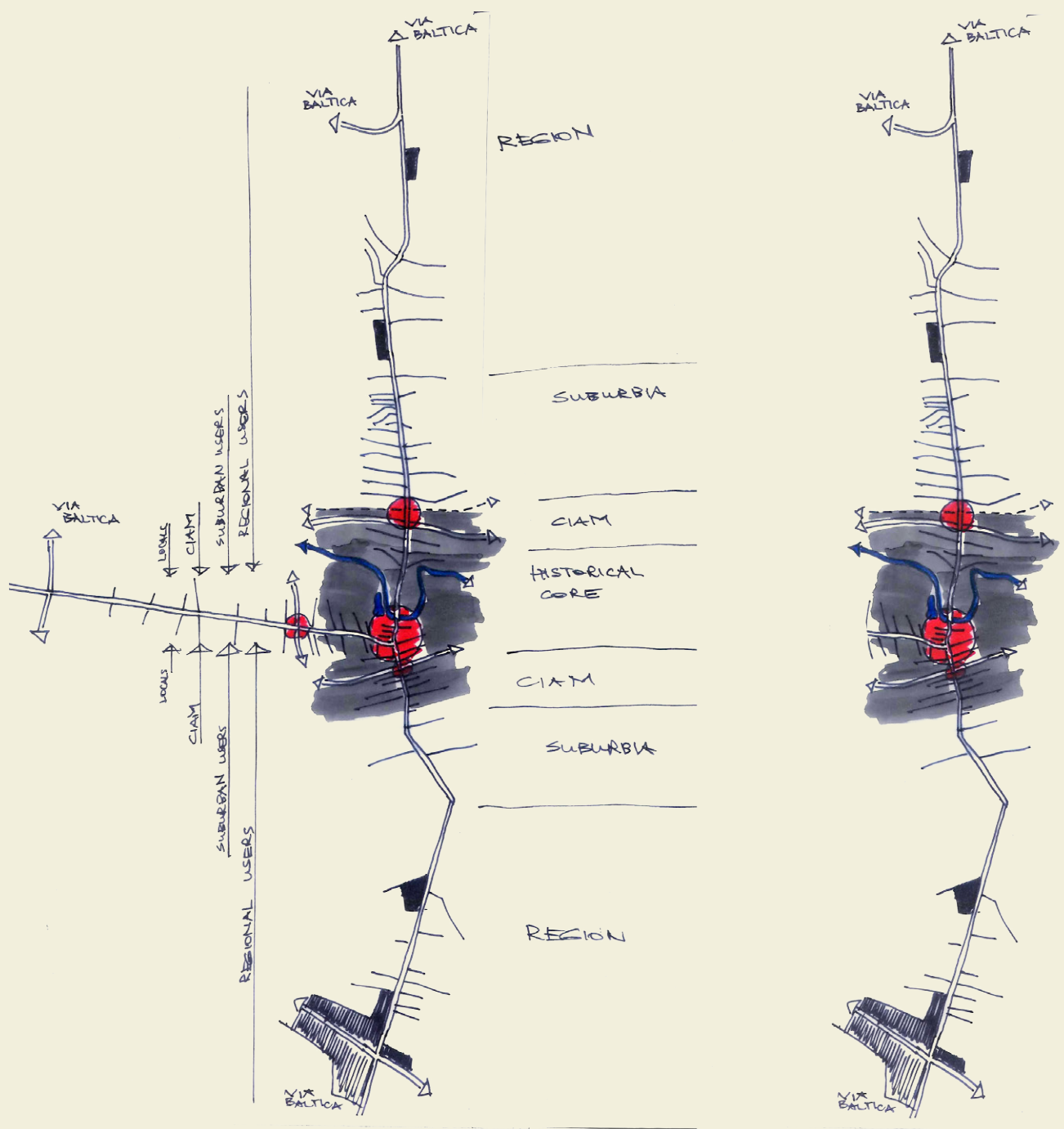


Combining with other public transport: author's image.

Stakeholder analysis



4.4. Strategy 2: Developing the Central-Northern axis of the city



Consolidation of the Northern axis of Panevezys, source: author's image.

The development of the Northern-Southern axis is aiming to tackle the larger problem of making the commuting from the region and from the suburbs to the city centre more efficient. The line is used by local, city, suburban and regional users, therefore is a big opportunity to embed the global and local networks better. An important aspect of the strategy is a new sub-centre on the northern edge of the ring road that would aim to improve the operations of the inner city, as well as facilitate the suburban inhabitants better.

The strategy aims to steer the developments from the periphery to the inner city and some (like industrial and logistic uses) to the closer vicinity of the city reachable by public transport.

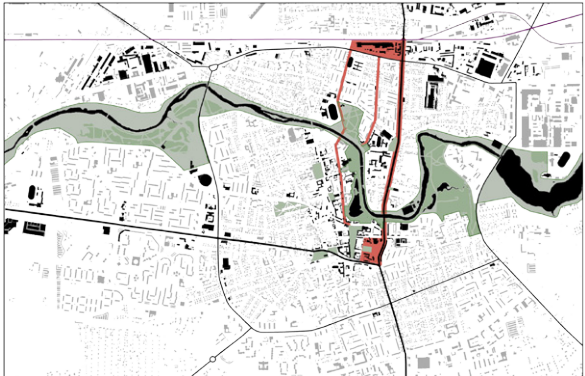
The main focus of the interventions will be between the new sub-centre and the historical core of Panevėžys. The centre contains the urban typologies, as well as abandoned socialist structures that should be redeveloped.

Strategic interventions

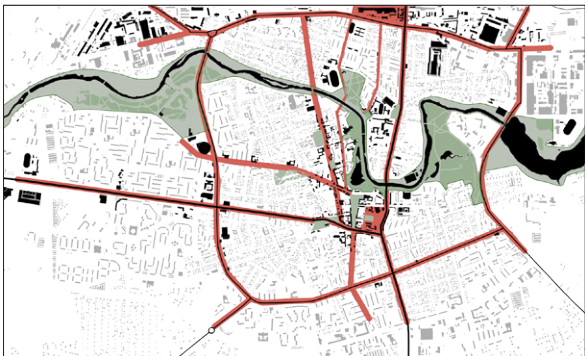
1. A new sub-centre at the northern side of the ringroad is introduced in order to consolidate the central part of the city. The new train station 'Rail Baltica' and the regional bus terminal will be transferred there. This new inter-modal node will be developed in an abandoned industrial brownfield. The strategy supports the larger task of embedding the regional and local networks together and linking the centre to the periphery better. Territories adjacent to new the new city sub-centre (socialist housing estates) will be integral to the development of the centres. Moreover, it will give a framework how to approach the brownfield redevelopment in other places in the city.

2. The socialist housing estate will be regenerated between the city centre and the new sub-centre. The new position of the area will require the integration between the two centres and the solutions to the existing problems in the area. Moreover, the pilot project will give a framework to intensify other socialist housing estates in the future.

3. Improving the public space in the city core will be the third strategy of the vision. When the new regional bus station will be transferred to the north, a free space will be available for the developments. It is situated near the most intensely used infrastructure and, therefore, is a strategic location. A link to the new train station will be improved, mainly for bicycle and pedestrian traffic. The pilot project will give a framework how to develop the city centre in the future. Furthermore, a pedestrian pridge across the river is offered to improve the connection with the new station complex. This intervention aims to improve the continuity of quality public space that would cross different structures of the city.



Short-term development, source: author's image.



Long-term development, source: author's image.



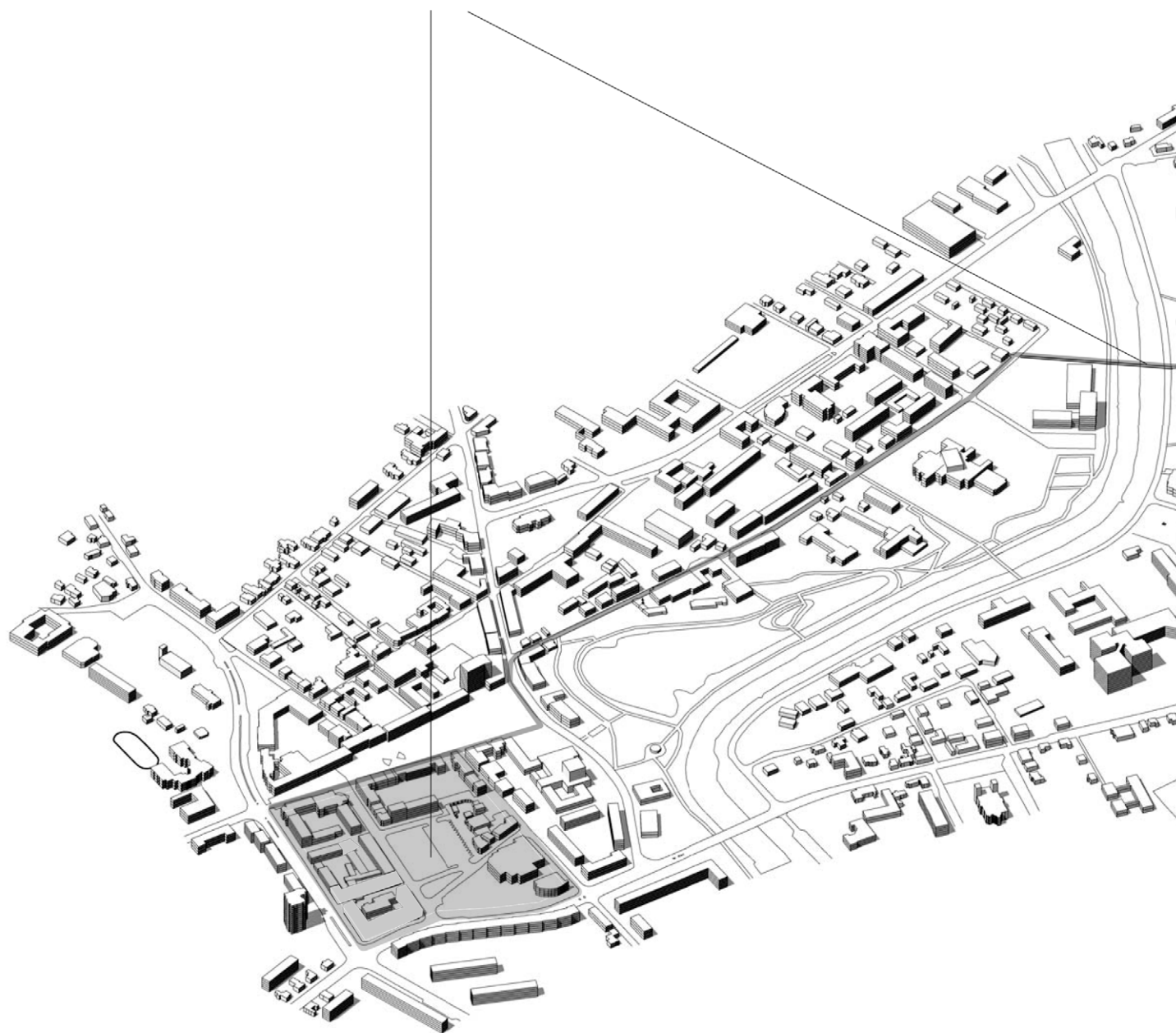
Strategic focus of the interventions source: author's image.

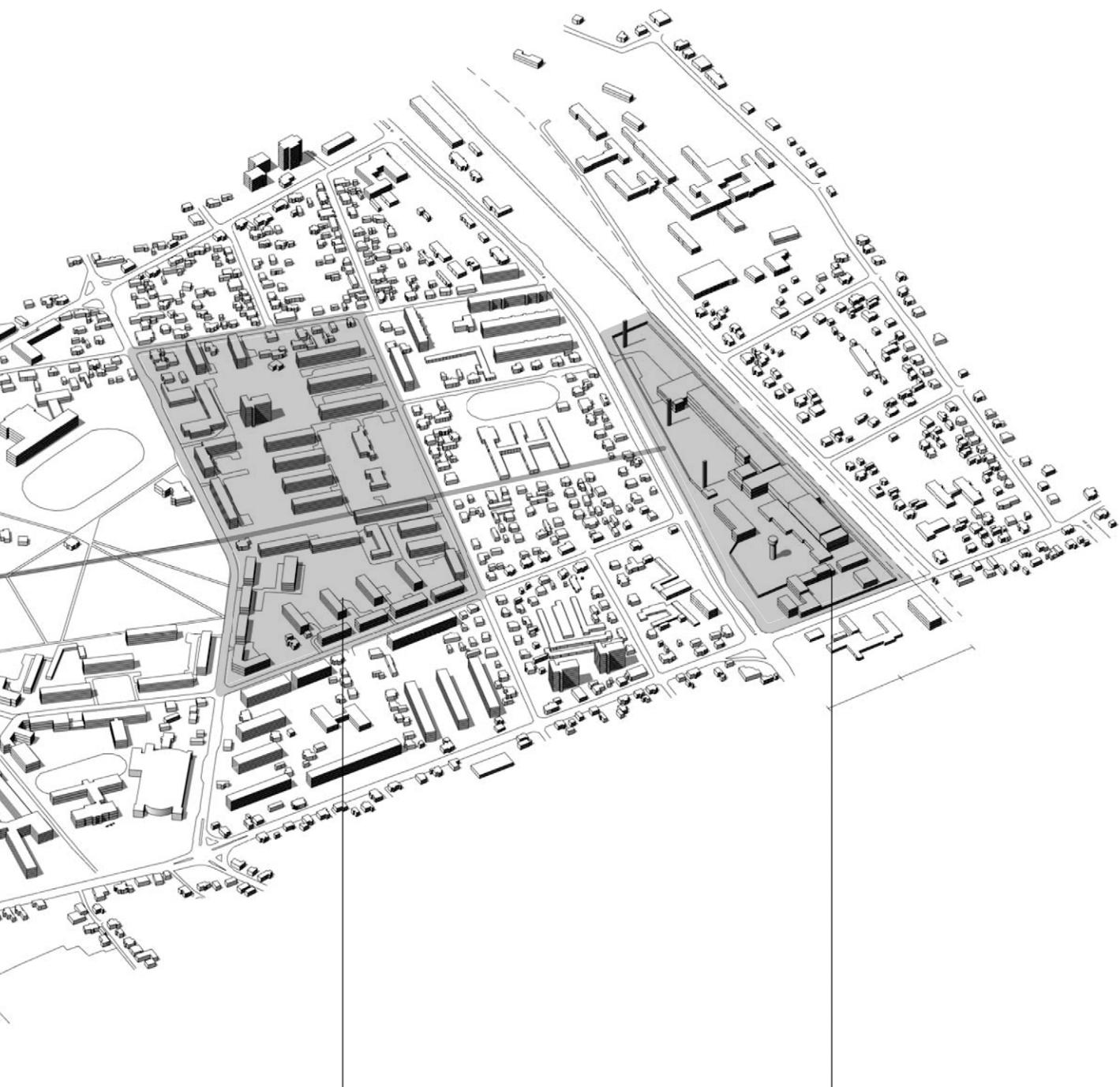


Pilot projects of the vision (black-non residential buildings), source: author's image.

URBAN ACUPUNCTURE IN THE CITY CENTRE

- Continuous, diverse 'mixed-use' urban area;
- More urban public space;
- Predominance of pedestrians and cyclists;
- Low carbon dioxide emissions;
- Small-medium sized firms/ corner shops.





REGENERATION OF SOCIAL-IST HOUSING ESTATES

- From 'tree' structure into an urban network;
- Mixed-income community;
- Variety of housing and typology;
- Clear public-private space relations;
- Low energy.

NEW STATION COMPLEX

- Integrity and hierarchy of transport;
- Embedded regional-local networks;
- Brownfield redevelopment with programme of a city sub-centre.



5. PILOT PROJECTS

New train station complex

Regeneration of socialist housing estates

Urban acupuncture and public space in the city core

In this chapter pilot projects for the strategic interventions are introduced. Each project has its own problematics related to the plan area. Therefore each project will be introduced separately.



5.1. New station complex

A new sub-centre at the northern side of the ringroad will be introduced in order to consolidate the central part of the city. The new train station 'Rail Baltica' and the regional bus terminal will be transferred there. This new inter-modal node will be developed in an abandoned industrial brownfield. The strategy supports the larger task of embedding the regional and local networks together and linking the centre to the periphery better.

Regional-local transport node:

The project is a strategy to concentrate the regional transport services in one node to embed the regional and local networks better. It is an alternative development to the proposed by municipality to have the three regional public transport terminals separately (present train station, 'Rail Baltica' train station and bus terminal). The new terminal complex would use the soviet unused railway line that would connect it to the main line, passing the city in the West. Furthermore, the new complex will have good connection to the local public bus transport as the location of the project is close to the most intense roads (ring road and Southern-Northern street).

The new complex will be created by redeveloping an abandoned brownfield that used to be a meat reproduction facility built during the socialism period. The object is favorable for development as it already has a train platform, wide variety of indoor and outdoor spaces.

City sub-centre

The new complex will have other programme too. An alternative development to the one foreseen in the Western shopping mall district is proposed. The aim is to direct the functions that belong to the inner city from the shopping mall district to the brownfield. Functions, as:

- cheap offices;
- retail/wholesale commerce;
- travel hotels;
- conference rooms;
- workshop spaces;
- entertainment services;
- cultural spaces;
- lofts.

The new sub-centre will allow to:

- facilitate the suburbia better, as it is missing even basic services;
- bring more urbanity to the fringes of inner city;
- establish multi-modal transport change points;
- generate impulse for restructurization (regeneration) of the socialist housing estates.



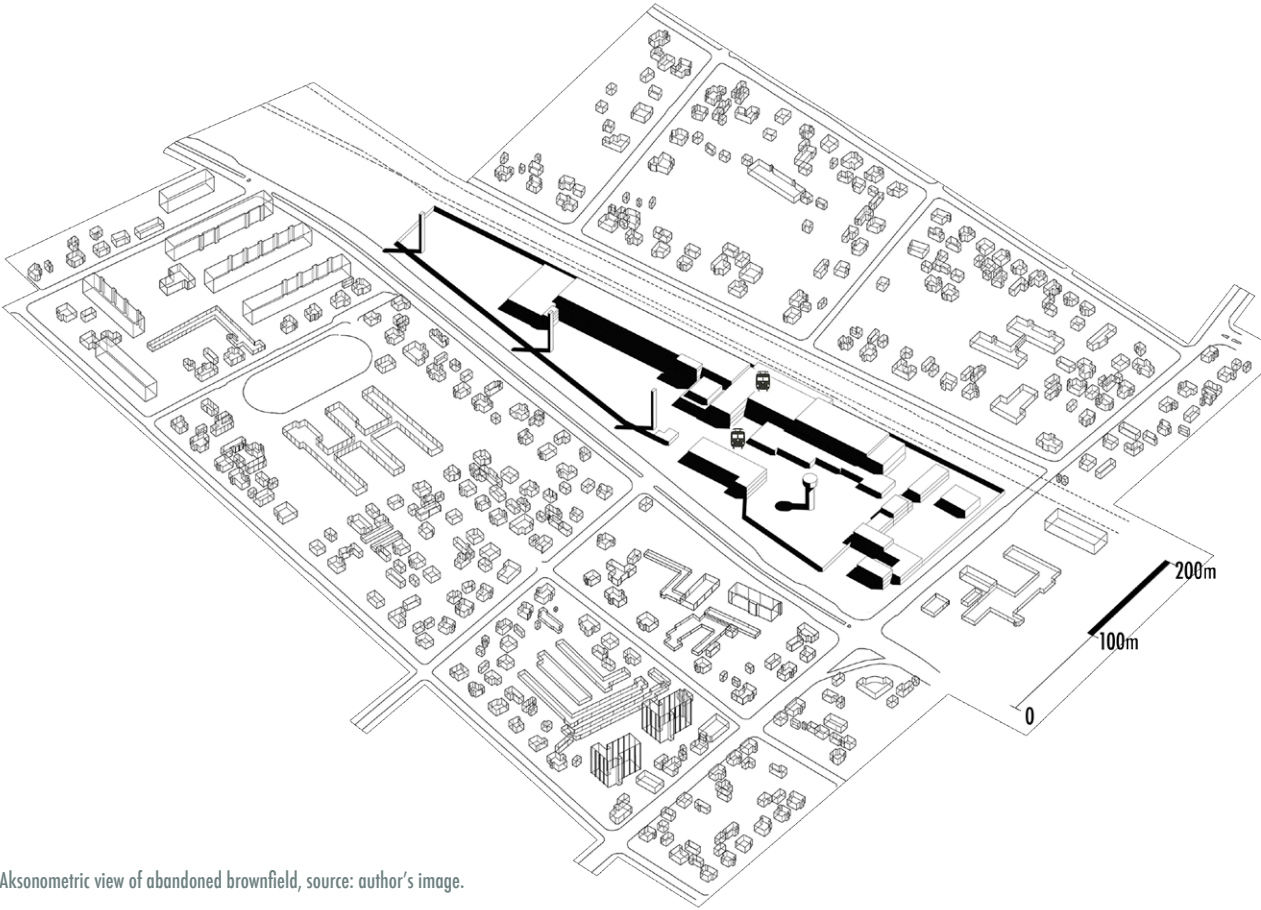
Location in the city centre, source: author's image.



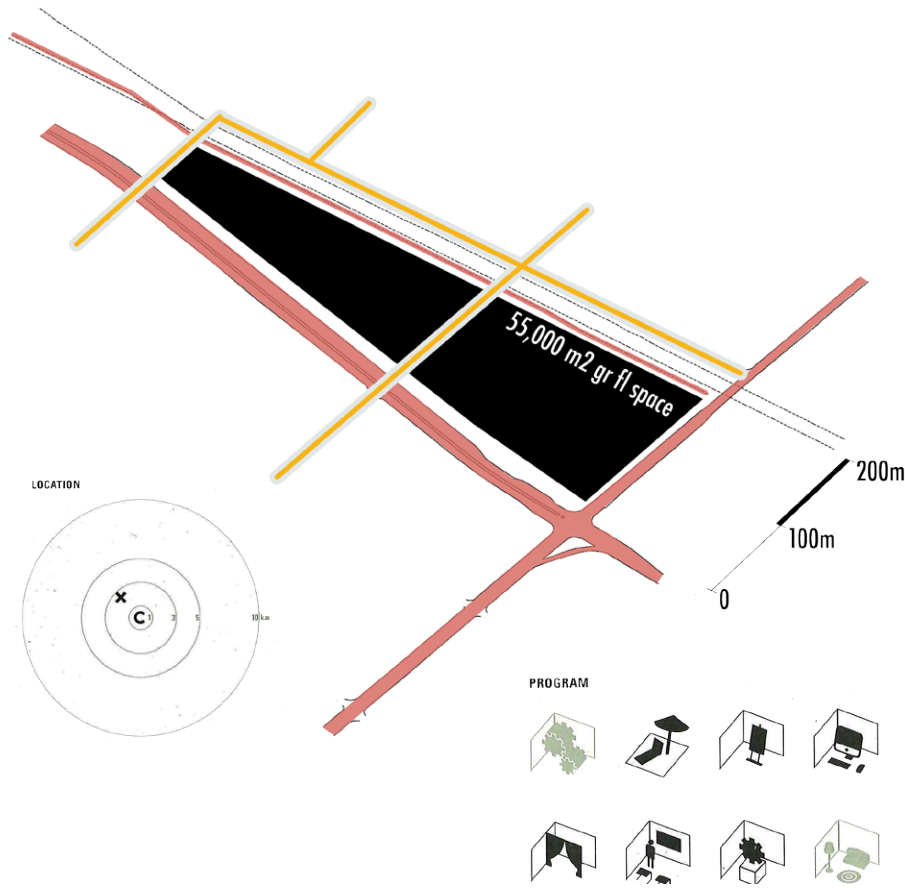
Former meat reproduction factory, source: author's image.



Former train platform of the factory, source: author's image.



Aksonometric view of abandoned brownfield, source: author's image.

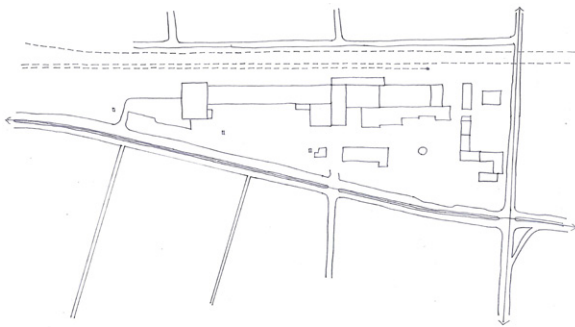


Ground floor space, source: author's image.

Intermodal transport node

The intermodal transport node will concentrate these functions:

- Railway station;
- Railway platform;
- A pedestrian platform, connecting both sides of the railway;
- A regional bus terminal;
- BRT station;
- Local bus station;
- Parking garage;
- Spaces for taxi;
- Bicycle storage.



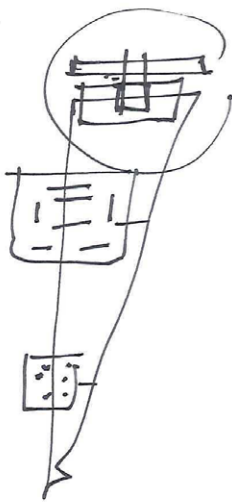
Connectivity of the brownfield, source: author's image.

Since the new complex has important infrastructure in the vicinity and good accessibility from it, the functions will be concentrated together. The intermodal transport node will be established in the centre of the brownfield, keeping the surrounding volumes for other uses.

The organization of the functions will let as easy change between regional and local public transport. This will let regional and local users to travel faster and in a more comfortable way.

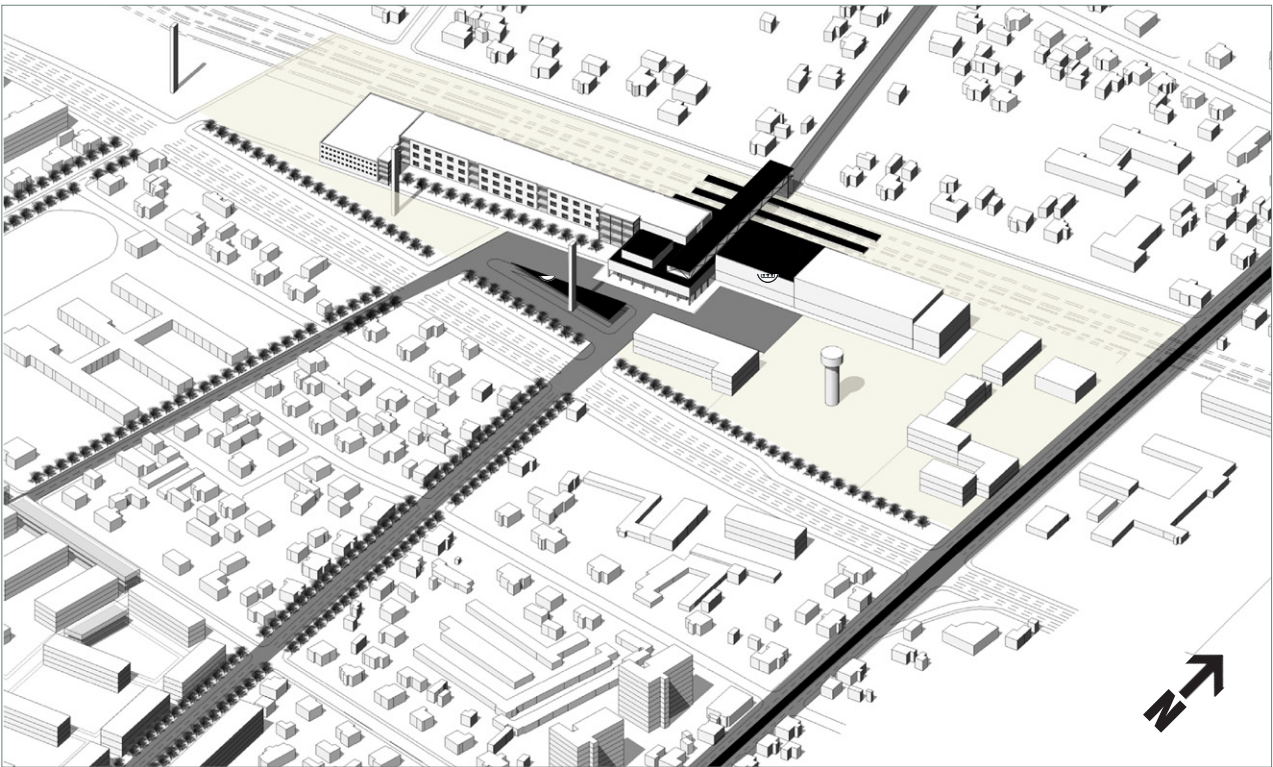
The 'Park n' Ride' and 'Park n' Go' points will facilitate the car parking for users who want to leave their cars before walking or going with public transport. This intention is aimed to reduce the traffic in the city centre.

Territories adjacent to new the new city sub-centre (socialist housing estates) will be integral to the development of the centre. Spin-off effects based on the Transit Oriented Development principle would encourage higher densities around the station complex in the future.

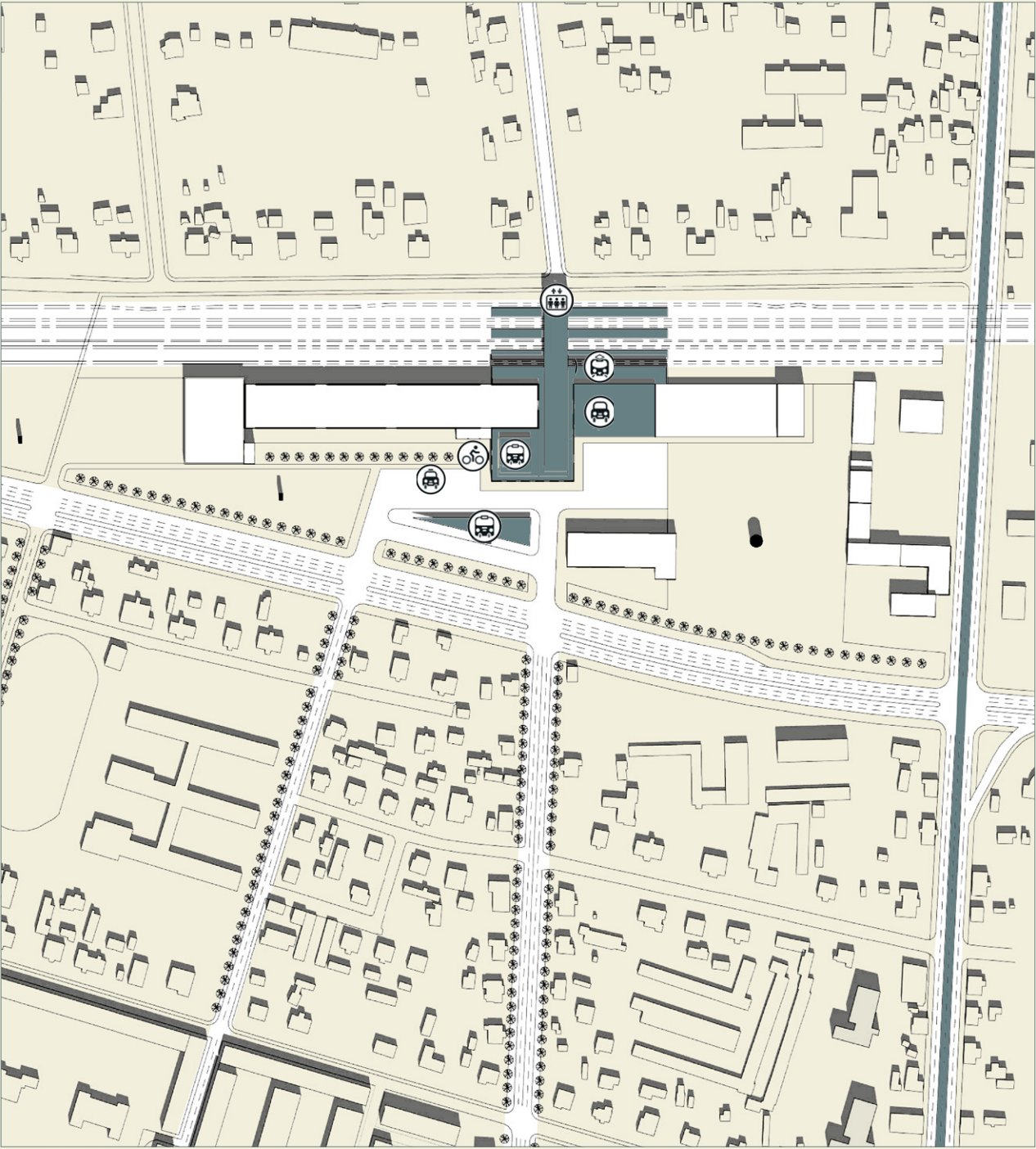


Functions:

-  Railway terminal
-  Pedestrian bridge
-  Regional bus terminal
-  BRT
-  Parking garage
-  Taxi space
-  Bicycle storage



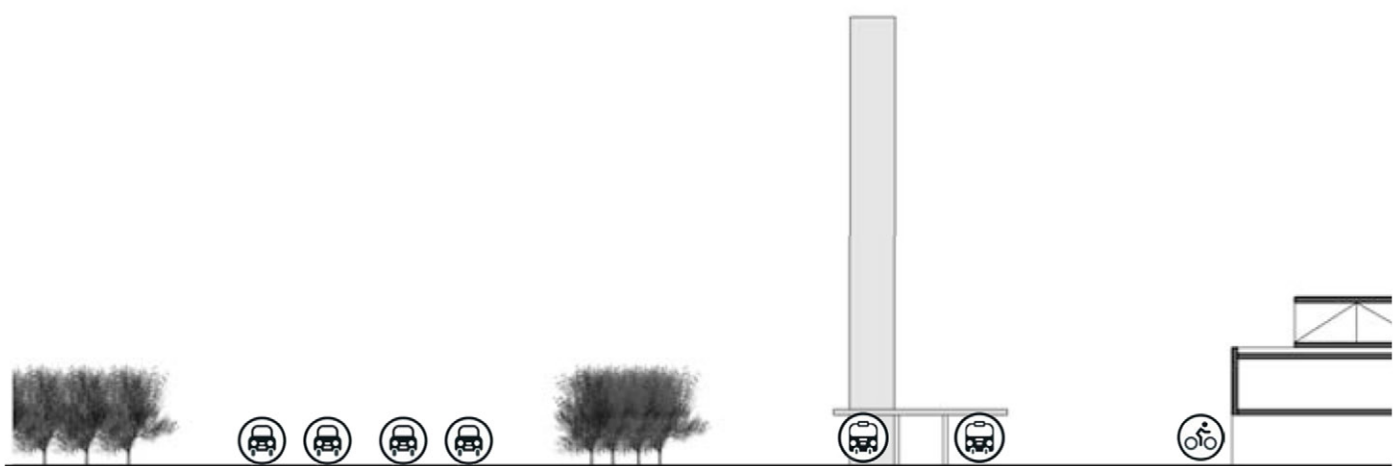
Axonometric view of transport nodes in the station complex, source: author's image.



Transport nodes in the station complex, source: author's image.

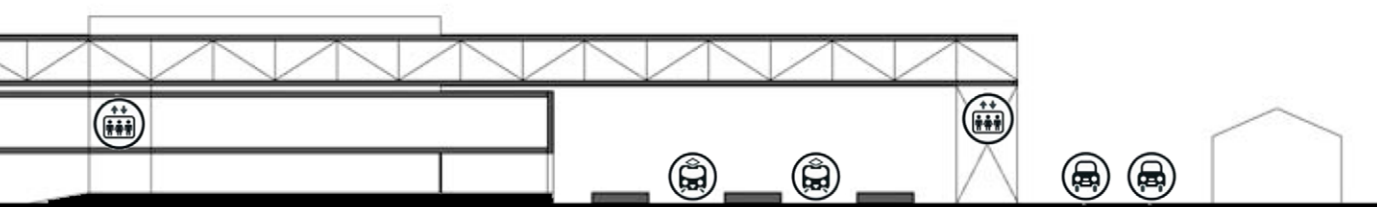
100m 200m





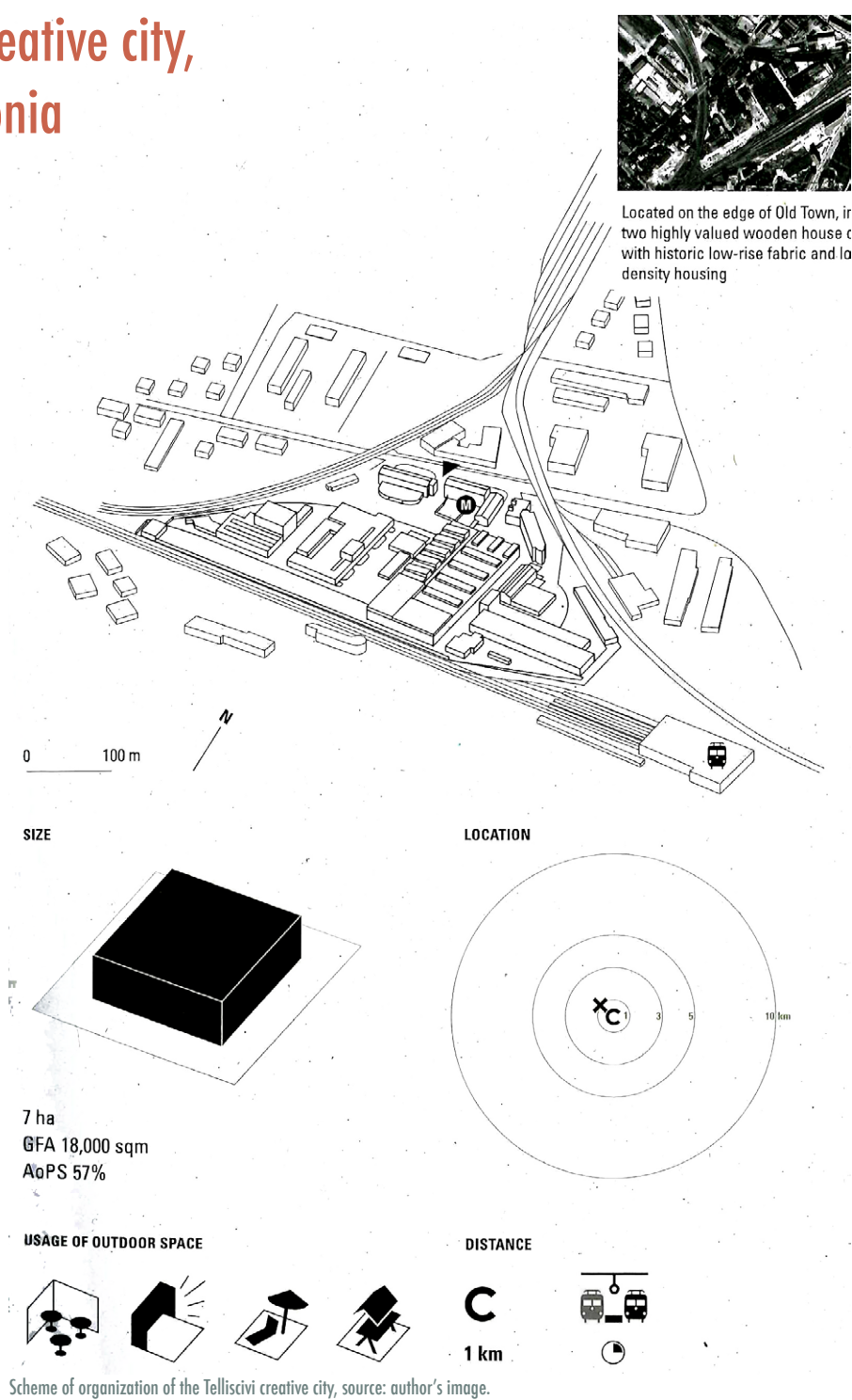
Section across the public transport node, source: author's image.





References

Telliskivi creative city, Talinn, Estonia



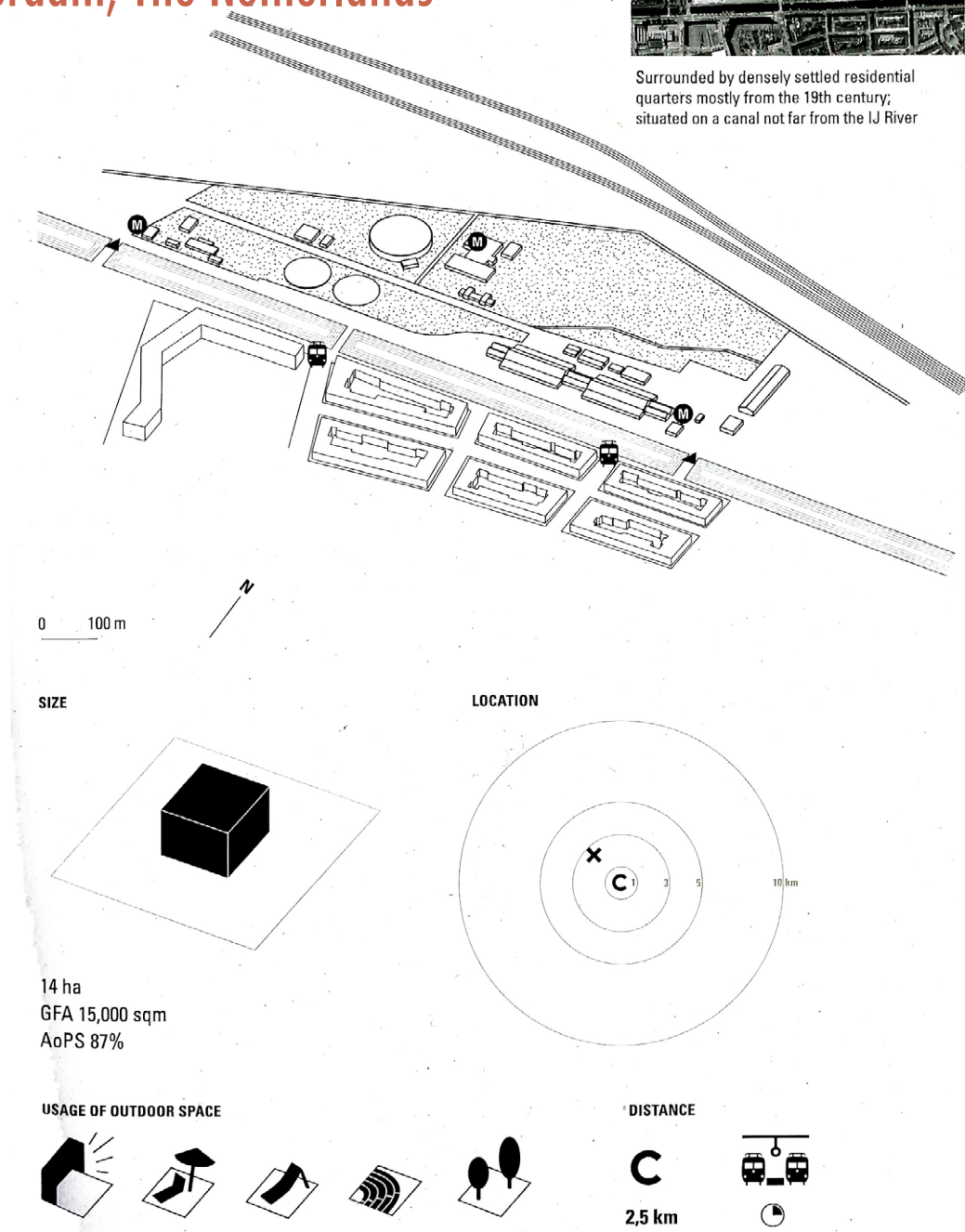
The Telliskivi creative city is a brownfield redevelopment project in Tallinn, Estonia. It was an old factory in the city centre, redeveloped to spaces for creative industries. It combines the old train station with the new firms of knowledge based industries. The outdoor space is used for hospitality and recreation services and infrastructure.

The success of the project was the good location of the brownfield and a flexible rental system. The operators of the brownfield let the renters to choose if they want a more expensive prepared space (more expensive rent) or a refurbishment on their own (cheaper rent). This flexibility attracted many low-income artists and workers.

Westergasfabriek, Amsterdam, The Netherlands



Surrounded by densely settled residential quarters mostly from the 19th century; situated on a canal not far from the IJ River



Scheme of organization of Westergasfabriek, source: author's image.

The Westergasfabriek was a brownfield redevelopment in Amsterdam. The old factory was reconverted into a park and space for big events. The outdoor space is used for hospitality and recreation services, green public space and sports. The project was aiming to enable spin-off effect to the surrounding residential estates.

The success of the project was the good location of the brownfield and a flexible strategy. The incentives were attracted to the brownfield little by little, giving the renters a trial. The spin-off effect to the local community enabled the regeneration process to define better public-private relationships in the residential housing estates.

Other programme

Other functions planned to be directed into the brownfield:

- cheap offices;
- retail/wholesale comerce;
- travel hotels;
- conference rooms;
- workshop spaces;
- entertainment services;
- cultural spaces;
- lofts.

Outdoor:

- Terrace;
- Park;
- Public transport.

There is a variety of spaces available for reconversion in the brown-field. The Eastern complex eill be dedicated to commercial and servic-es uses because it has the close relation to the Central-Northern road and can facilitate the suburbia. The central spaces will be dedicated for culture, entertainment and conferences due to their big space. The Western side is favorable for workshops, lofts and creative industries because of internal organization of flow distribution.

The functions will allow to:

- facilitate for the suburbia better, as it is missing even basic services;
- facilitate the travellers;
- create cheap spaces for offices, workshops, creative industries.

Indoor:

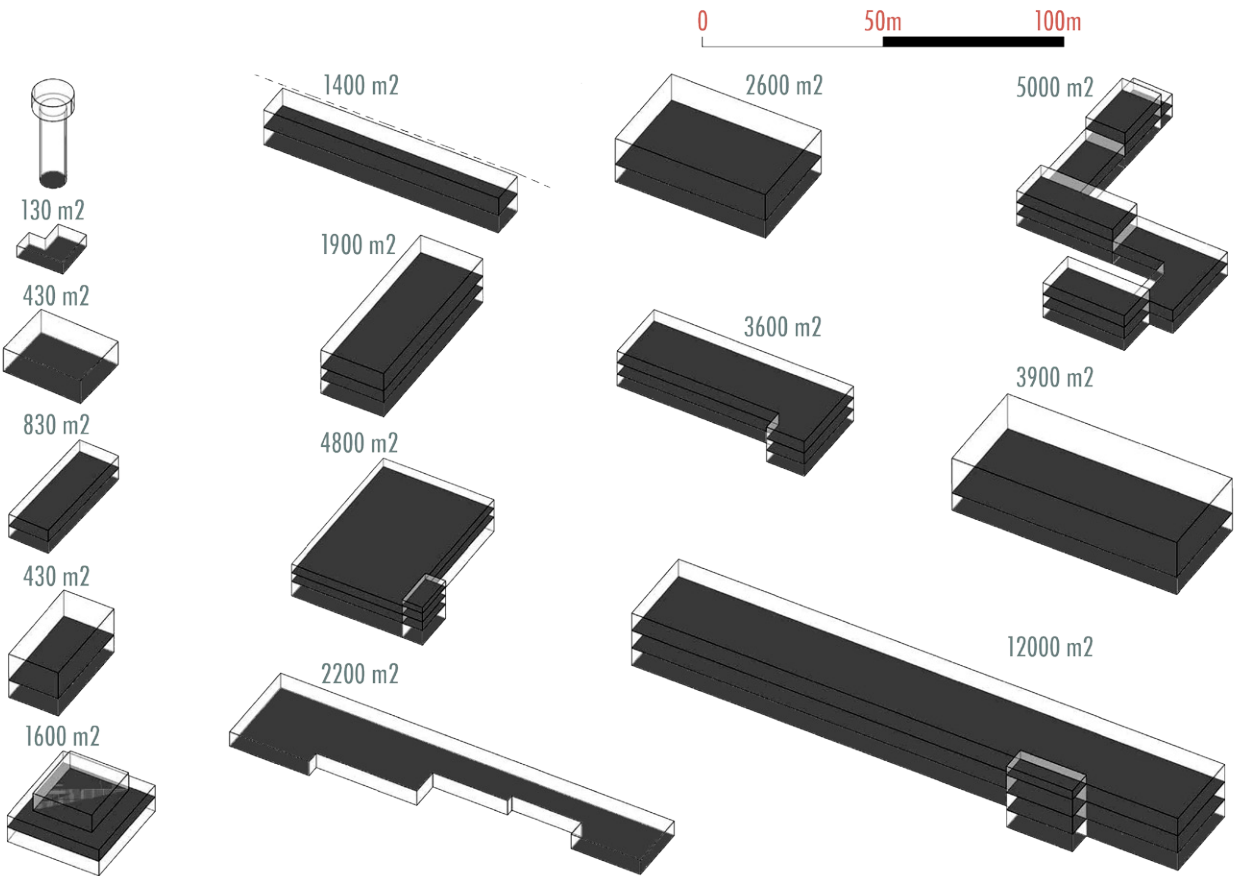
- 1. conference** rooms;
- 2. retail/wholesale** commerce;
- 3. travel hotels;**
- 4. Services;**
- 5. entertainment;**

Additional:

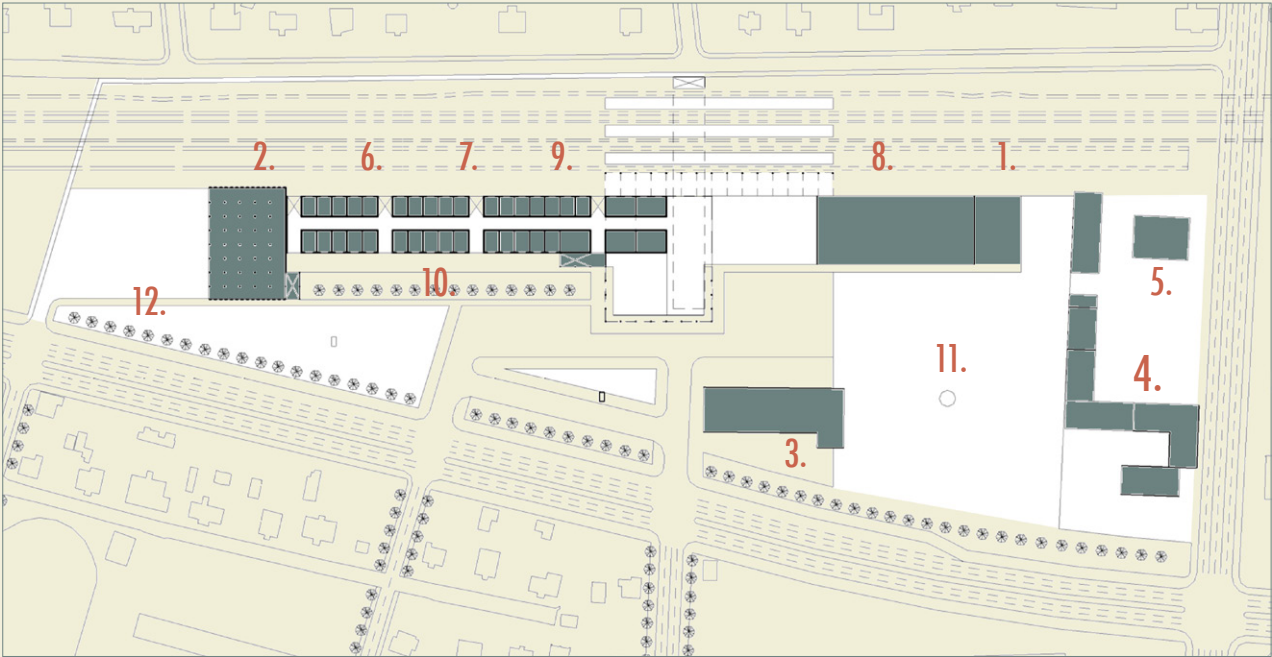
- 6. workshop** spaces;
- 7. cheap offices;**
- 8. cultural** spaces;
- 9. lofts;**

Outdoor:

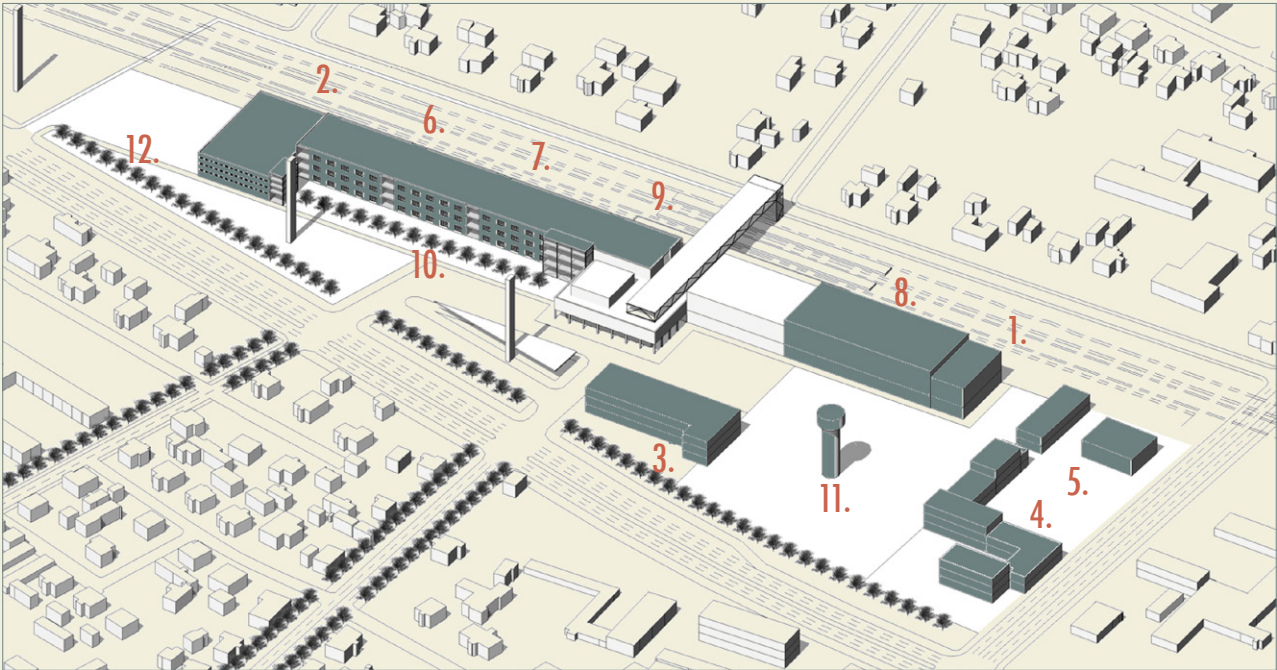
- 10. Terrace;**
- 11. Park;**
- 12. Recreation.**



Available spaces in the brownfield, source: author's image.



Organization of uses in the brownfield, source: author's image.



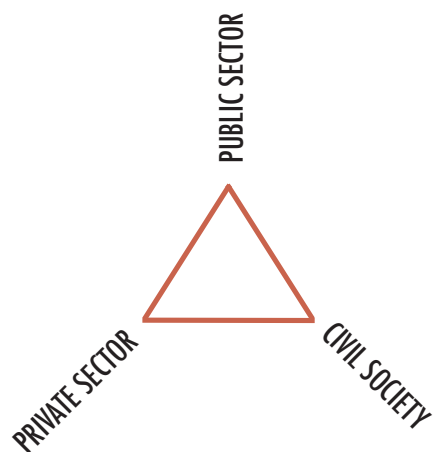
Organization of functions in the brownfield, source: author's image.

Strategic actions

- Managing public transport stakeholders. Creating a partnership and a partnership between public transport operators and the municipality.
- Managing the property. Convincing the proprietor to invest to the brownfield redevelopment or sell the property for an operator.
- Forming a PPP. A partnership between the public and private sectors is needed. The project should be feasible for private operators. Public sector would be ensuring interests of a wider public.
- Changing land use. Preparing land use change from industrial/warehouse to multifunctional. The TOD principle would encourage higher densities around the station complex.
- Negotiating incentives. A flexible rent system - would be needed to attract various incentives ('pay or refurbish on your own'). The spaces could be occupied at different times, starting with small incentives.



Impression of workshop spaces in a brownfield.



EVENTS

Impression of cultural events in the brownfield.

5.2. Regeneration of socialist housing estates

Socialist housing estate block will be regenerated adjacent to the new city station complex. It will be integral to the development of the link between the centre and the new sub-centre. Moreover, it will give a framework how to approach the socialist housing estate regeneration in other places in the city.

The new position of the area will require the integration between the two centres and the solutions to the existing problems in the area. Moreover, the pilot project aims to fulfill the 25,000 m² of new residential space that is being built every year in Panevezys.

The aim of the pilot project is to demonstrate:

- integration of connections between the station and the city centre;
- possibilities of intensification in the socialist housing estates;
- possibilities of forming clearer public-private space relations;

Integration of connections between the station and the city centre.

Two cycling lanes that cross the socialist housing block will be created. These lanes will improve the connection of the new station with the Southern part of the river where the cycling lanes are better developed. The street in the Eastern part of the block is the main road connection. These three elements form the hierarchy of the most important lanes in the area. Local tree-like road structure will be regenerated. A more networked street network is proposed.

Possibilities of intensification in the socialist housing estates.

Residential programme is proposed to be directed to the socialist housing estates by intensifying them. As most of the demand for residential buildings is for low density family houses, the interventions will aim to create these conditions in the newly presented typologies. 25,000 m² programme is proposed.

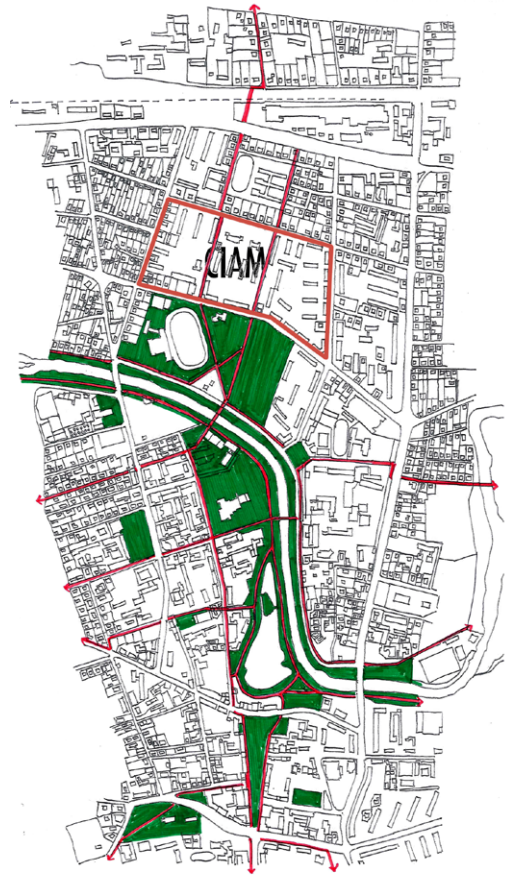
Possibilities of forming clearer public-private space relations.

The local inhabitants in the area are complaining about:

- poor maintenance of public-space;
- not enough privacy in the overcrowded estates;
- crime in public space;

Aim is to:

- Improve safety in the area;
- Reduce the amount of public space, improve the quality of it;
- Create semi-private spaces in the yards of the estates to balance the lack of private space;
- Create more responsibility for the maintenance of semi-private spaces;
- Reduce social segregation.



Green structure and bicycle paths, source: author's image.



CIAM regeneration and other interventions, source: author's image.

Intensification near transit lanes

Residential programme is proposed to be directed to the socialist housing estates by intensifying them. As most of the demand for residential buildings is for low density family houses, the interventions will aim to create these conditions in the newly presented typologies. 25,000 m² programme is proposed.

The buildings near the transit flows will be encouraged to convert their ground use for non-residential functions. There are examples of commercial ground floor use in the socialist housing unit. More eyes of the intensified buildings near the transit lanes will keep the streets safer.

The network of the streets is enhanced by connecting the existing tree like structure to make clear links. More tarmac will provide more parking spaces for the inhabitants.



Public-private relations in the city centre (black-bad quality public space, grey-semi public, white-private)



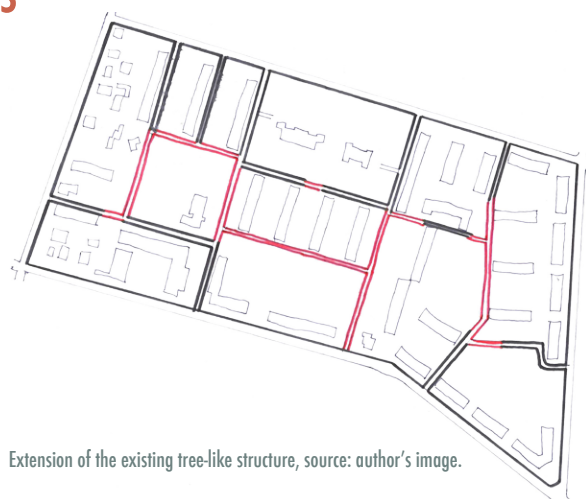
Main transit lanes and aimed non residential ground floor use, source: author's image.

Intensification with new typologies

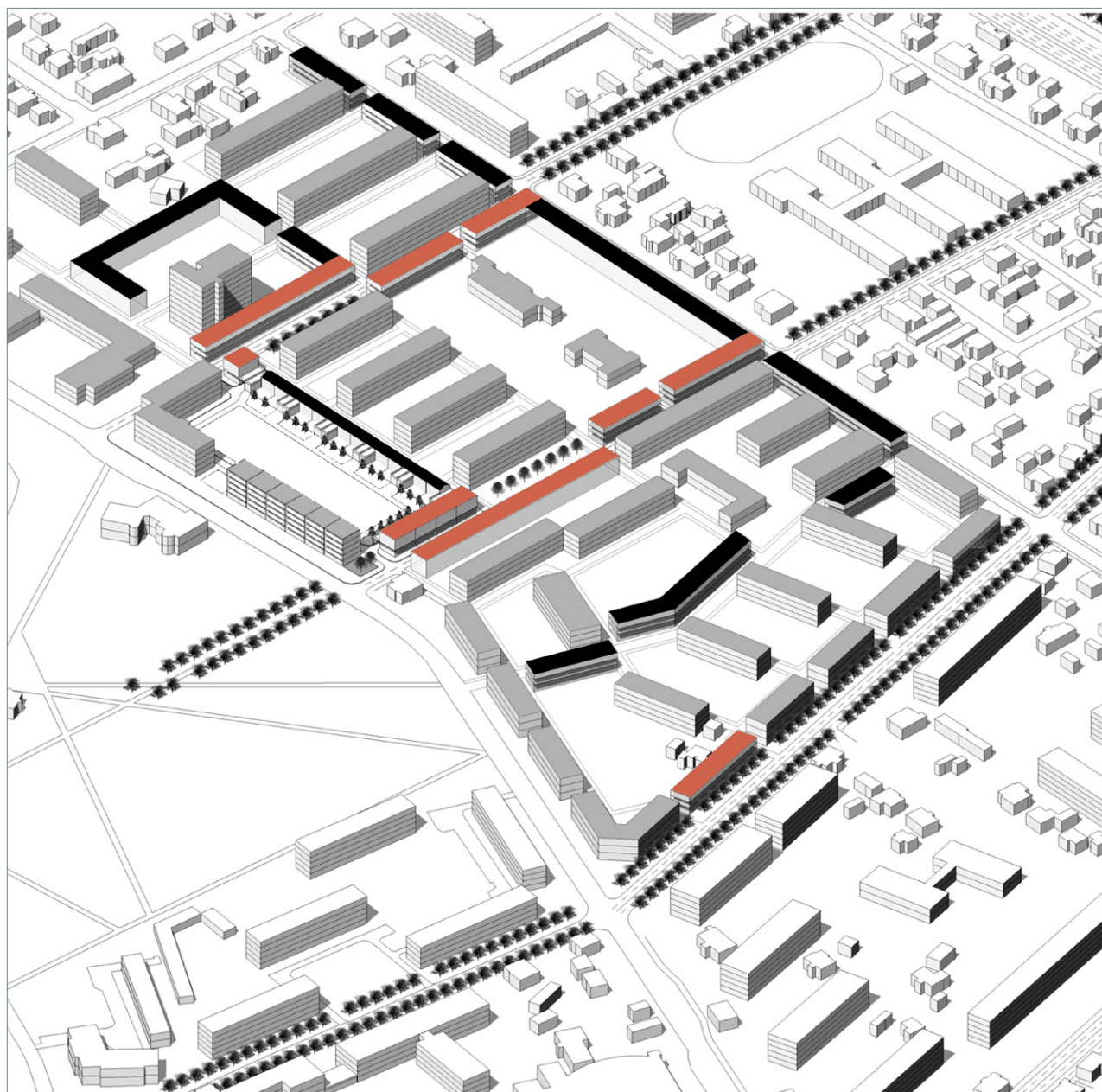
New residential building typologies are proposed in the intervention.
The interventions are aimed to:

- Facilitate the conditions, attractive for middle class;
- Increase the mix of use and variety of housing choices in the area;
- Create a more coherent residential structure;
- Improve urban form and public-private space relations.
- Improve safety in the streets.

More dense typologies will be used in near the transit lanes (with ground non residential use). Other will be lower houses for residence only. More inhabitants will keep the streets safer.



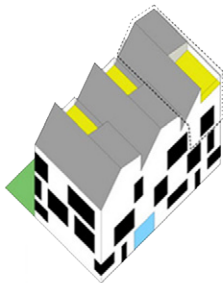
Extension of the existing tree-like structure, source: author's image.



Intensification plan, source: author's image.



Existing typologies in the area



New typology - residential with ground floor use



New typology - Low rise blocked residential



Public space in the intervention area, source: author's image.



Public space in the intervention area, source: author's image.



Public space in the intervention area, source: author's image.



Ground use in the residential house, source: author's image.

Improving public-private space relation

The local inhabitants in the area are complaining about:

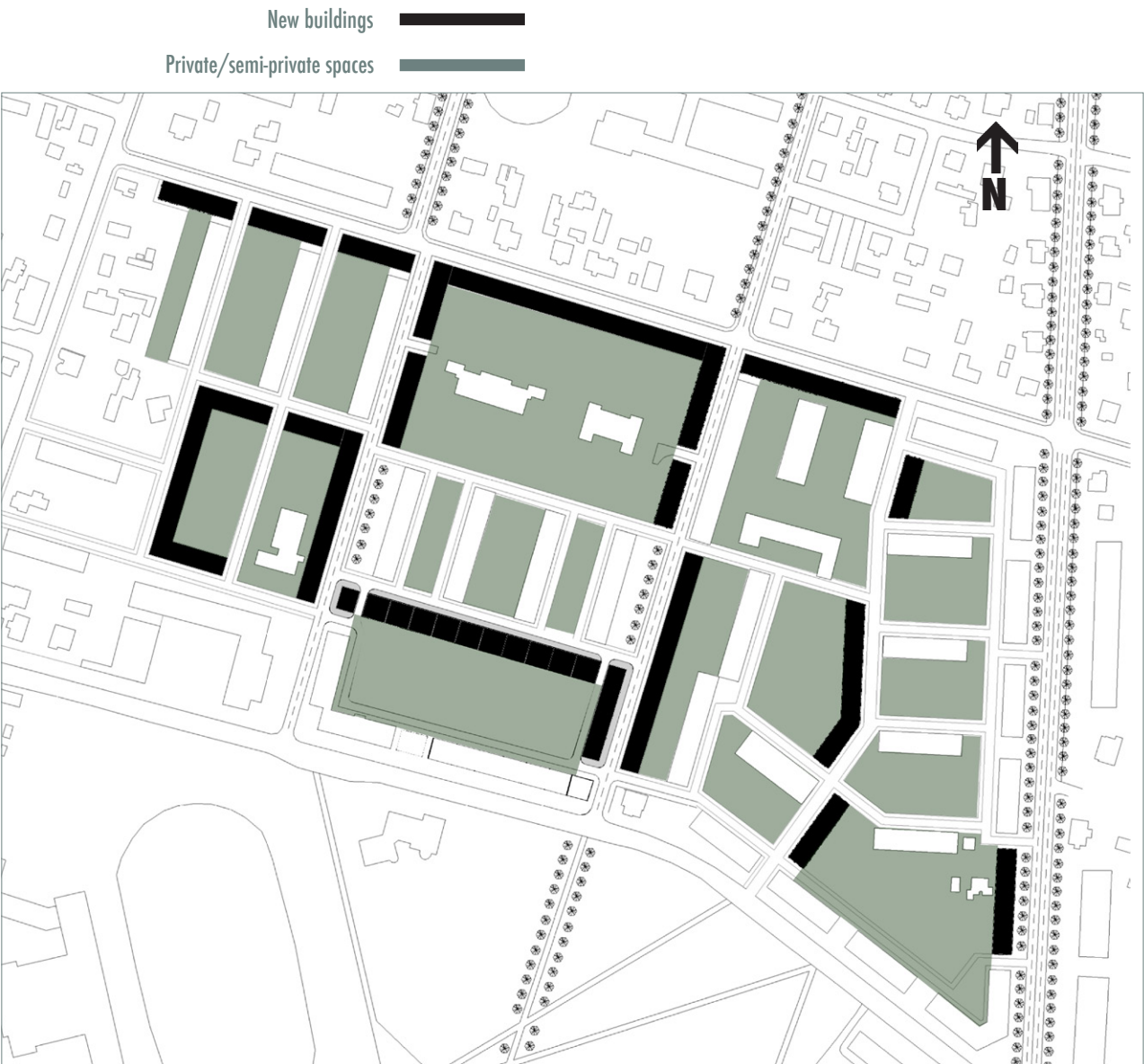
- poor maintenance of public-space;
- not enough privacy in the overcrowded estates;
- crime in public space;

Aim is to:

- Improve safety in the area;
- Reduce the amount of public space, improve the quality of it;
- Create semi-private spaces in the yards of the estates to balance the lack of private space;
- Create more responsibility for the maintenance of semi-private spaces;
- Reduce social segregation by developing residential houses for high-income people.

The profile of the courtyards will be changed by closing them with new residential typologies. These new houses will have their own private gardens and access to the semi-private space of the courtyard. This space will be more private and will be the meeting point of the residents of the socialist housing estates and newly created typologies.

References are used to explain the aim of the intervention. The typologies that form clearer public-private space relations are illustrated (Semi-private spaces of the Westergasfabriek, Kees Christiaanse; housing typologies in Hollainhof, Gent, Neutelings; housing typology of Kempe Thill by MVRDV).



References



Reference: Westergasfabriek, Amsterdam, Kees Christiaanse.



Reference: Neutelings, Hollainhof, Gent.



Reference: Kempe Thill, MVRDV.

Improving public-private space relation



New residential houses and new private/semi-private space, source: author's image

A more detailed view demonstrates how it is possible to create the conditions, that people seek in the periphery, in the open space of the socialist housing estates. Both new and existing residents would benefit from such an intervention. While new ones would be able to use the public transport and green spaces in the vicinity, old ones would enjoy more private environment.

Intervention would:

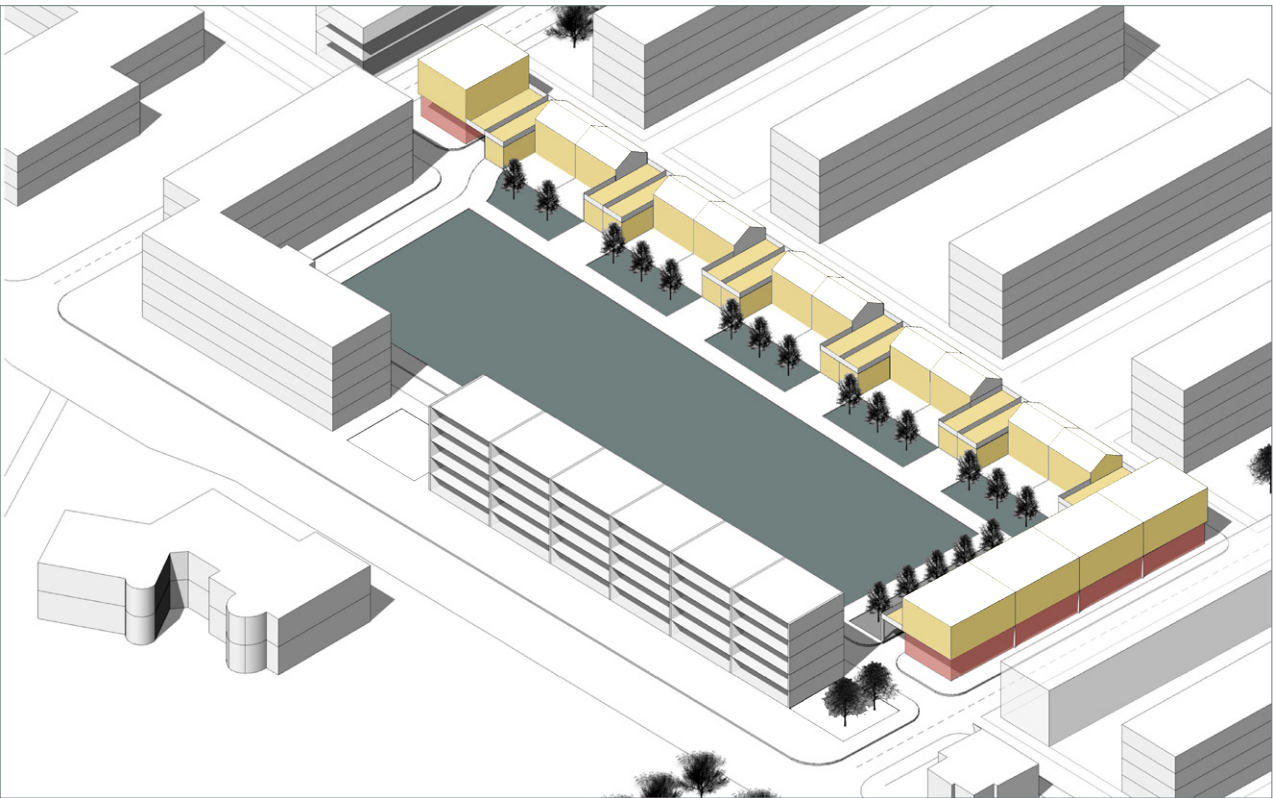
- Improve safety in the area;
- Reduce the amount of public space and improve the quality of it;
- Create semi-private spaces in the yards of the estates to balance the lack of private space;
- Create more responsibility for the maintenance.

Social segregation would be reduced because of more mixed-income inhabitants in the block. These inhabitants would be able to meet in the inner semi-private spaces.

The new inhabitants would also have their own private gardens as well. These spaces would be different in the two created typologies:

- The houses with the ground floor use would have the gardens, facing the inner courtyard on the first floor;
- The blocked low-rise residential buildings would have a garden deeper in the ground in order to separate it from the semi-private space.

- New ground floor use
- New residential use
- Semi-private space



Residential block after intensification, source: author's image

5.3. Urban acupuncture and public space in the city core

The pedestrian/cycling bridge over the river

Improving the public space and creating a new supply of buildings will be a strategy in the city core.

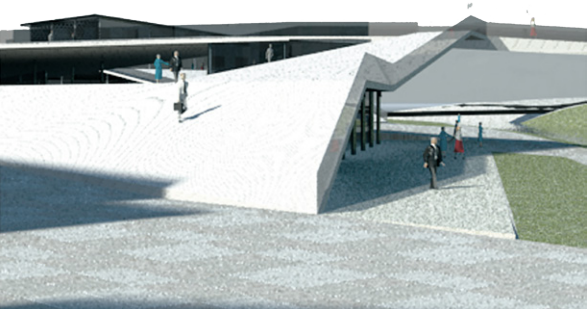
A link to the new train station will be improved, mainly for bicycle and pedestrian traffic. A new bridge is proposed in order to establish a faster route to the city centre.

The bridge would be cross the river park and connect directly the sport arena and the socialist housing estates to the cultural area of the centre.

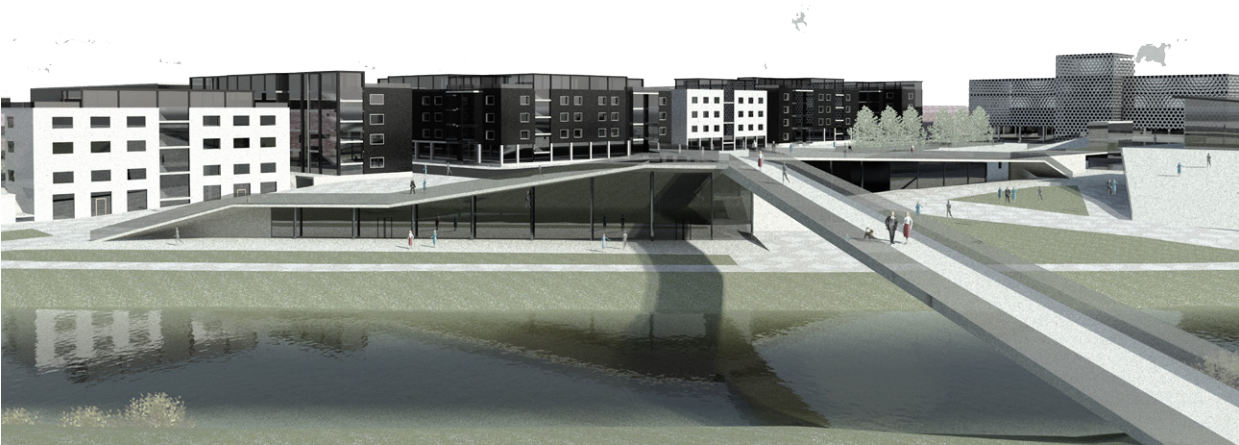
Easy access should be ensured from all sides for pedestrians and cyclists since the connections are important not only in the South-North direction but also the West-east one.



Location in the centre, source: author's image.



Impression of a possible solution for the pedestrian bridge, source: author's image.



Impression of a possible solution for the pedestrian bridge, source: author's image.

Public space in the city core

Improving the public space and creating a new supply of buildings will be a strategy in the city core. When the new regional bus station will be transferred to the north, a free space will be available for the developments. It is situated near the most intensely used infrastructure and, therefore, is a strategic location. A link to the new train station will be improved, mainly for bicycle and pedestrian traffic. The pilot project will give a framework how to develop the city centre in the future.

The project is aiming to:

- improve the public space in the city centre, where urbanity is the biggest;
- create a coherent structure of streets;
- improve the ground floor use of the buildings near the public space;
- improve the identity of the area as a part of the historical urban tissue;
- create extra parking spaces;
- create a supply of new spaces for corner-shops, services and offices.



Green quality public space in the intervention area, source: author's image.

Improving public space and creating a new supply of buildings

Improve the public space in the city centre, where urbanity is the biggest:

City centre is the most used and attractive place in the city where urbanity is the biggest. However, the area near the former regional bus terminal is not supporting the current needs of demand. When the bus terminal will move to the Northern station complex, new space for developments will be available. The urban blocks will be finished in order to re-create the historical street structure and improve the use of the ground floor.

The car usage will be limited and newly developed public space will be developed for pedestrians. This is aiming to strenghten the identity of the city core a place to celebrate the human-scale environment.

Create extra parking spaces:

An underground garage will be constructed under the current park because there is a big lack of parking spaces. The entrance to the parking garage will be created in a newly renovated historical street.

Create a supply of new spaces for corner-shops, services and offices:

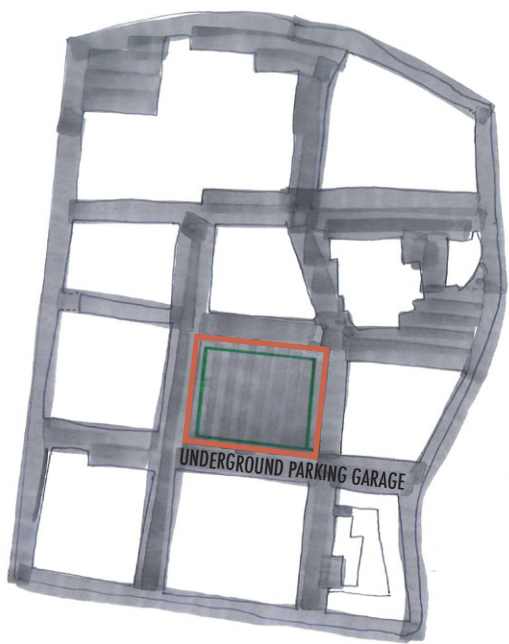
There is a lack of supply in this part of the city of new buildings due to lack of space and regulations for building. New buildings that support the historical urban tissue are proposed. These buildings are aimed to fulfil the programme of offices, retail, services and small firms that are willing to establish themselves in the city centre. The low height of the buildings will improve the historical identity of the place.



Buildings and infrastructure, source: author's image.



Public space analysis, source: author's image.

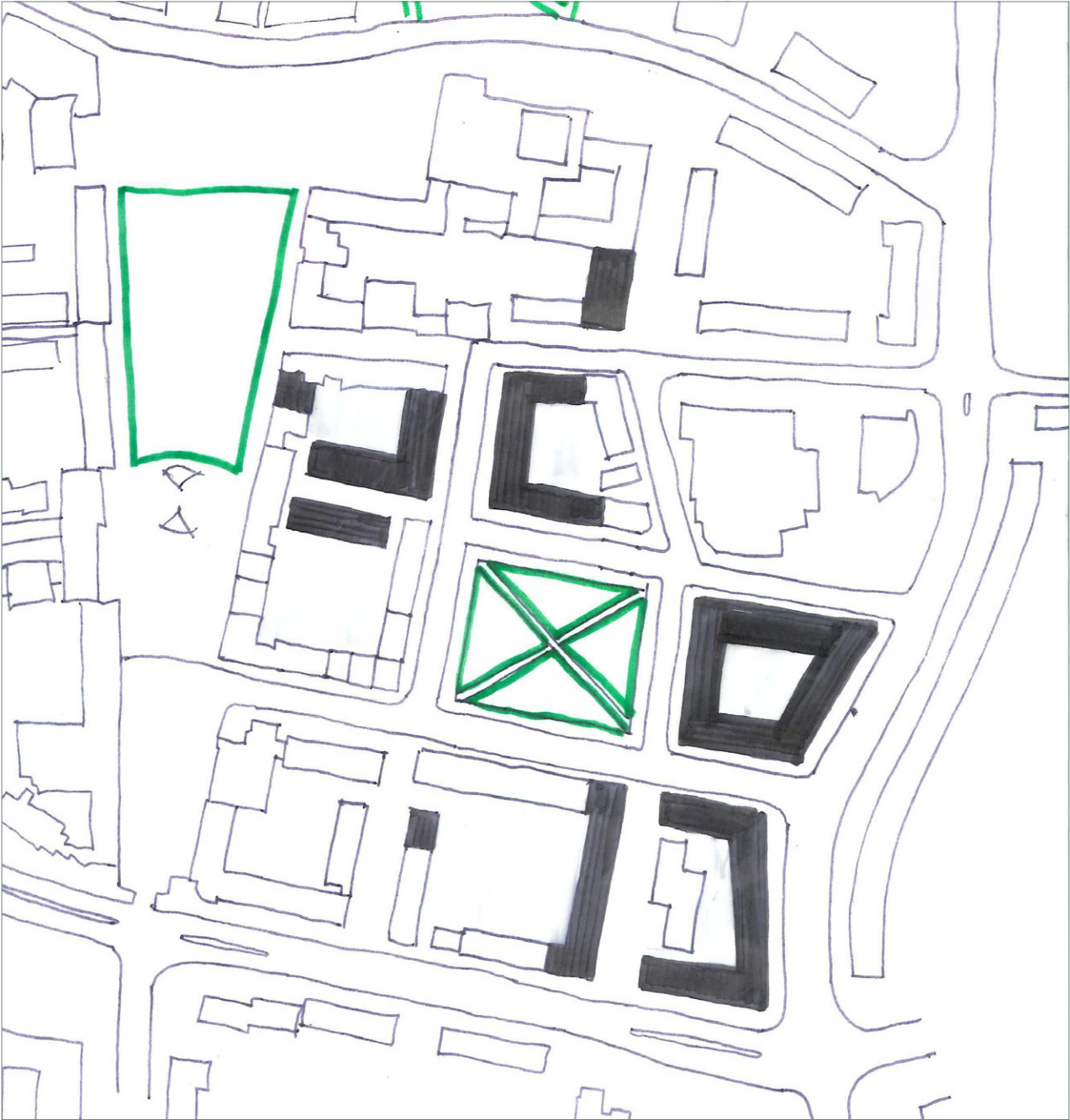


Aimed structure of public space system with a new underground parking garage source: author's image



Interventions, source: author's image.

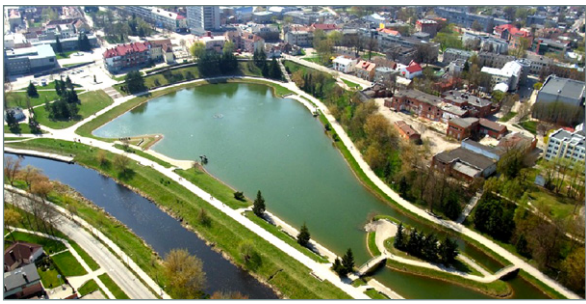
Creating the supply of new buildings



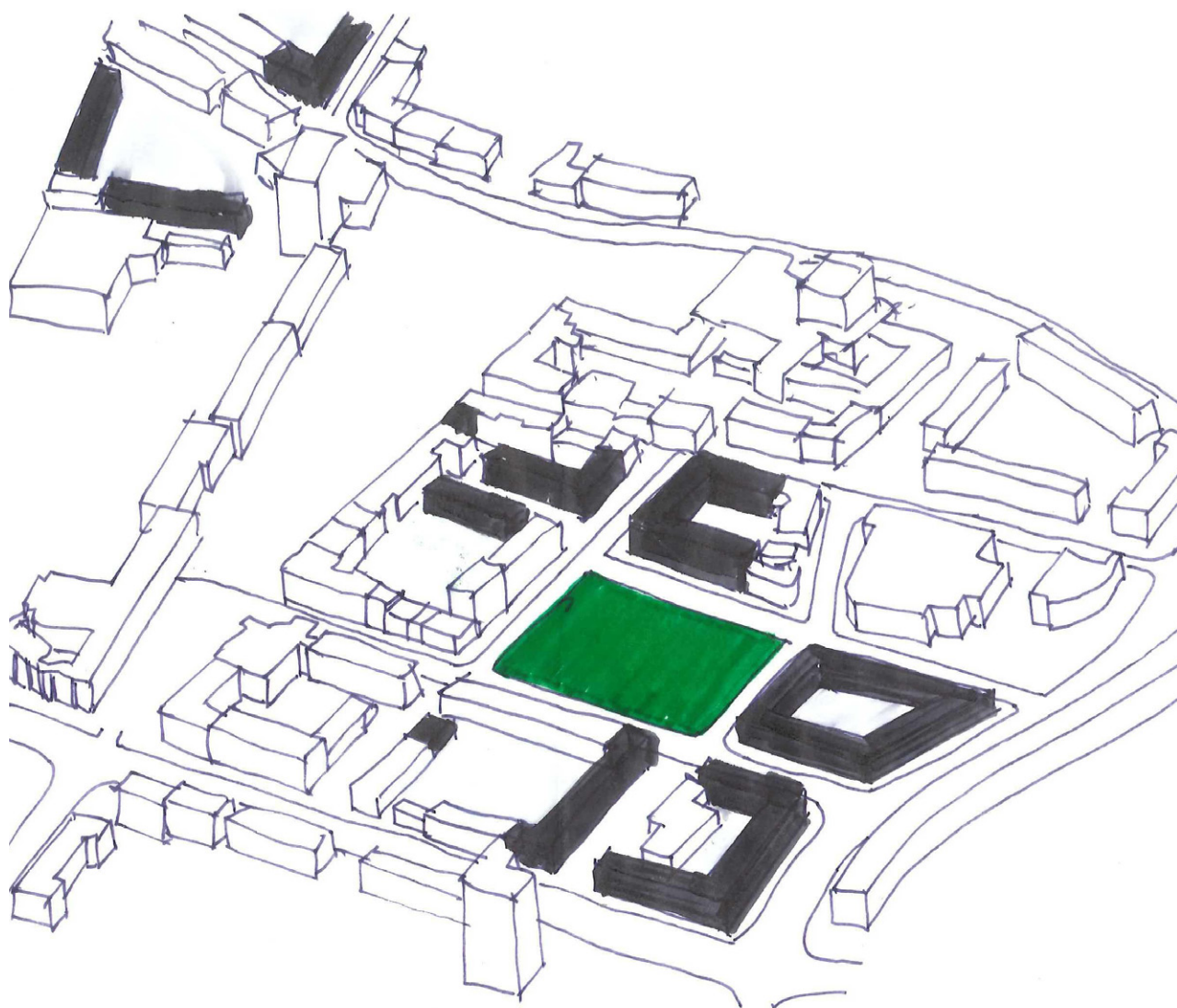
Location of the proposed new buildings: author's image



Public space in the vicinity of the intervention, source: fotoskrydis.lt



The river park in the vicinity of the intervention area, source: fotoskrydis.lt



Aimed new construction, source: author's image



The character of an old-town street, source: googlemaps.com



Existing situation in the intervention area, source: fotoskrydis.lt

6. REFLECTION

This chapter reflects the whole process of graduation project and highlights the main discoveries and findings while analyzing the city. Later on the considerations were used to formulate the vision and ambition which was developed as a strategy for the city centre. Design part is the finest detail of the project where most of the elements from the strategy are implemented.

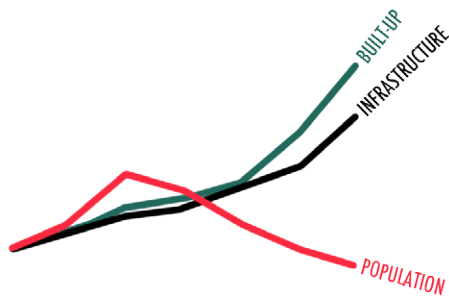
Summary of the thesis project

Bibliography

SUMMARY OF THE THESIS PROJECT

POST SOCIALIST TRENDS IN THE CITY OF PANEVĖŽYS

Moreover, due to its' expansive development from a compact structure towards and increasingly dispersed one and shrinking population, Panevėžys is becoming more expensive to maintain. There are many signs that the majority of urban changes taking place since the early 1990s are moving the post-socialist city away from sustainability.



Urban sprawl and population shrinkage in Panevėžys.

AIM

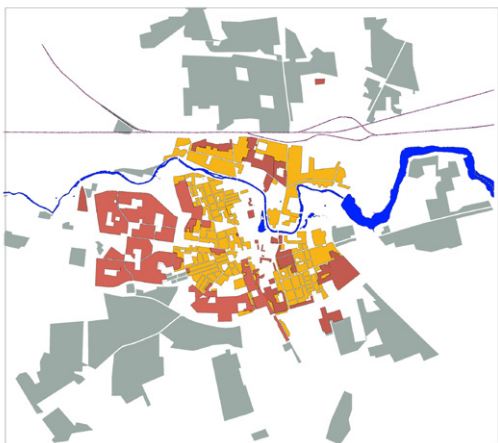
Instead of developing strategies based on massive growth of a city that is unlikely to happen, the main concern of the thesis will be on exploring ways to consolidate the existing structure to achieve better operations and more responsive services.

CAUSES OF SPRAWL:

Real estate market; very permissive to developers spatial planning system; automobilization; changing lifestyle of people.

MAIN POWERS IN DEVELOPMENT:

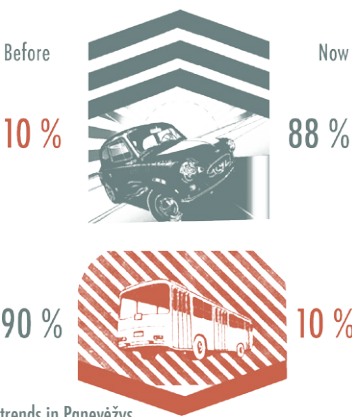
Currently the most influential triangle in developments is architect-developer-builder. Wider interests of society are not ensured.



Socio-spatial fragmentation in Panevėžys.

PROBLEM STATEMENT

Expansive urban development in Panevėžys is not leading towards socially and environmentally sustainable future.



Automobilization trends in Panevėžys.

RESEARCH CONCLUSIONS

- There is a lack of connection between the regional and local elements.
- Public transport system is not effective anymore. Intermodality between public transport terminals is complicated.
- Cycling lanes have discontinuity between the city centre and the regional roads.

The most actively used and having most qualities area is the city centre. Other territories are individually working areas.

The area of Socialist development has the most problems but also the most potentials for reuse.



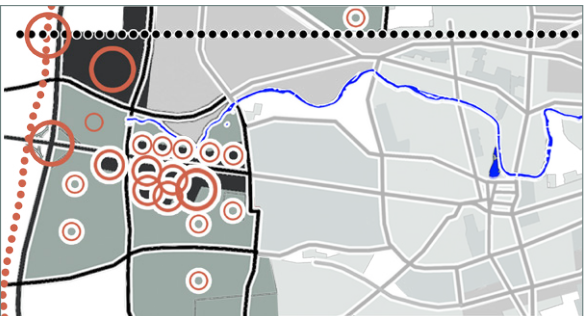
Threats of sprawl in Panevėžys.

APPROACH

Strategies were developed of how to bring people back to urbanity.

The research suggests that reasons to encourage that are:

- lower price to maintain the city-wide systems, as public transport, green structure.
- Existing road, electricity, gas, water, internet infrastructure, without a need for new construction.
- Mixed-use development is more suitable for service-based economy.



Location of current developments in Panevėžys.

MAIN DESIGN GOALS:

- Redefine the integration to the 'Via Baltica' through the city centre;
- Find compact city form by consolidating existing structure;
- Return to urbanity of the city centre;
- Steer greenfield developments to areas of reuse;
- Create diversity of landscapes with strong identities;
- Find more compact urban form through different typologies;
- Create urbanity that would cross different structures.



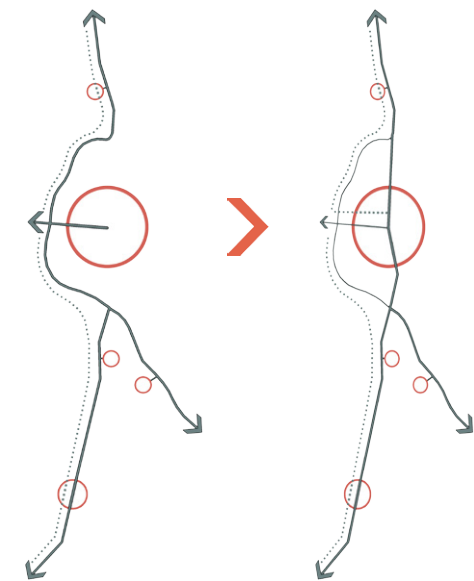
Aim to steer new developments to the inner parts of Panevėžys.

STRATEGIES

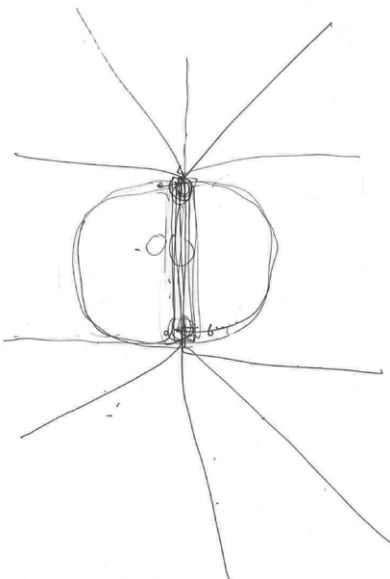
- STRATEGY 1: upgrade the public transport system;
- STRATEGY 2: develop the Central - Northern axis of a city.

PILOT INTERVENTIONS:

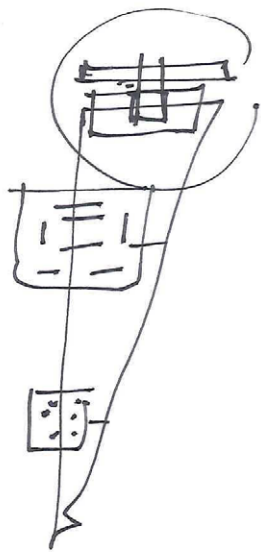
1. Intermodal public transport terminal in a brownfield;
2. Socialist housing estate regeneration and intensification.
3. Intensification and public space upgrade for the city core;



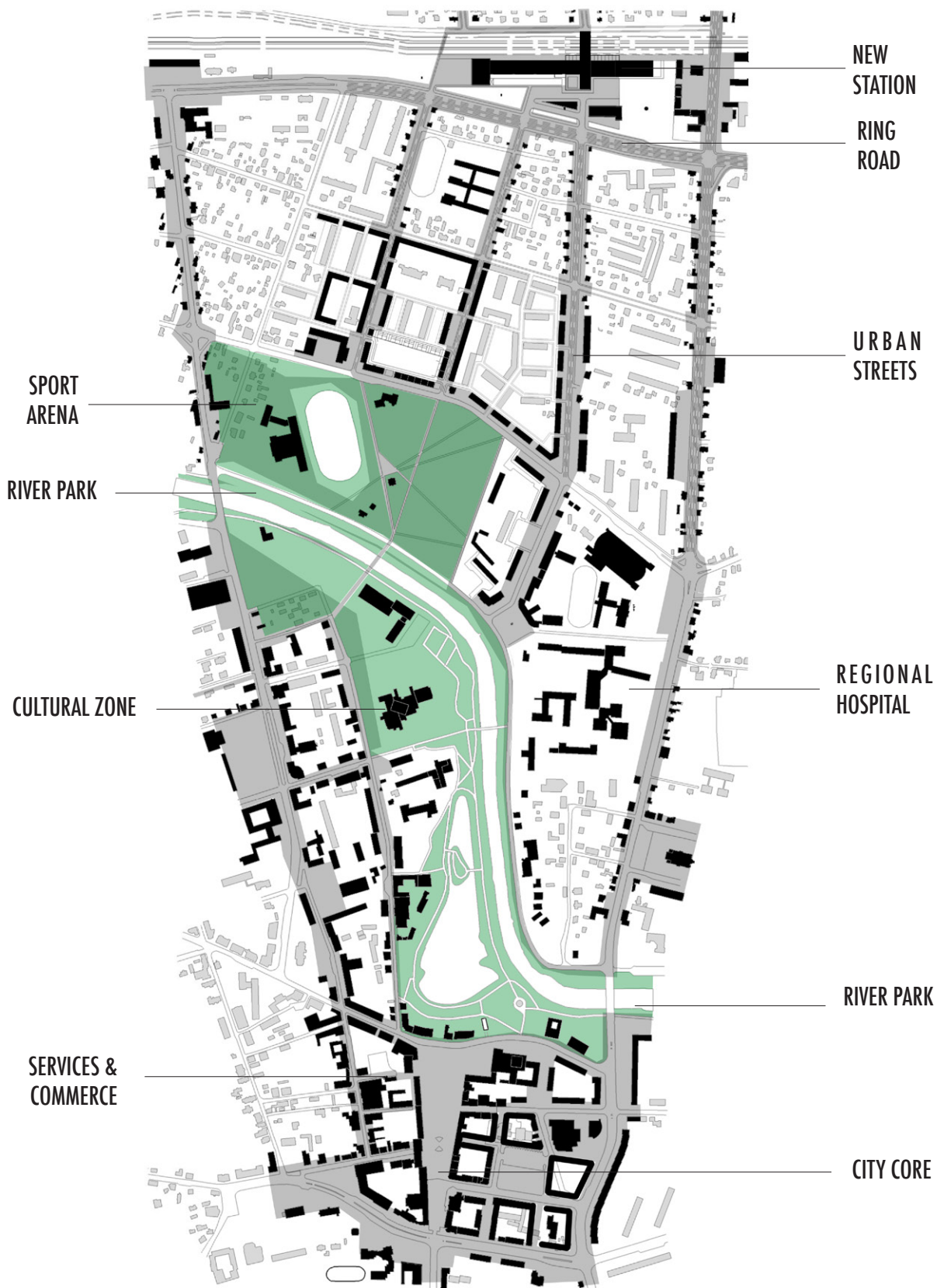
Redefining 'Via Baltica' through the city centre.



Proposed public transport system.



Interventions in the city centre.



Pilot projects of the vision (black-non residential buildings), source: author's image.

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