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I. Current state of Kaunas central part (in Nemunas valley)

1. Territorial situation

Kaunas is a second metropolitan city in Lithuania and is known as the centre of industry, culture, technology and science. The city is situated in the crossroad of main Lithuanian roads and of national and international integration axes. It is crossed by two international transport corridors, existing and planned European track railroads, and potential river road corridors. Close to the city there are airport and free economic zone. In urban framework of Lithuania Kaunas stands out as first-level centre, important on both, national and international scale. The city matches all characteristics of agglomerated metropolitan centres. Kaunas is important historical centre; the city is famous for its cultural and historical heritage. Part of the city centre and the fortification system are urban monuments. In Kaunas there are many monumental buildings (mostly left from interwar period) and other cultural, artistic and historical values.

Central part of Kaunas is situated in Nemunas valley; it consists of southern parts of Old Town and New Town, Nemunas Island and Lower Freda. This part of the city is not only valuable from natural, cultural, recreational and aesthetic points of view, but also from economic standpoint. This part of the city can expand to the south as there are many extensively used or abandoned territories which are improperly taken care of. Over there commercial, public, residential and recreational areas could be formed. While planning qualitative changes in southern parts of Old Town and New Town (fig. 1), and quantitative and qualitative changes in Lower Freda, the following environmental problems arise: connection of river and urban structures in multifunctional territories, preservation of cultural

and natural monuments and their usage for recreational or other purposes, preservation and enhancement of visual-aesthetic potential, strengthening of central part identity, conversion of warehouses and transport areas which are situated in inappropriate places, rearrangement of transport system, etc.

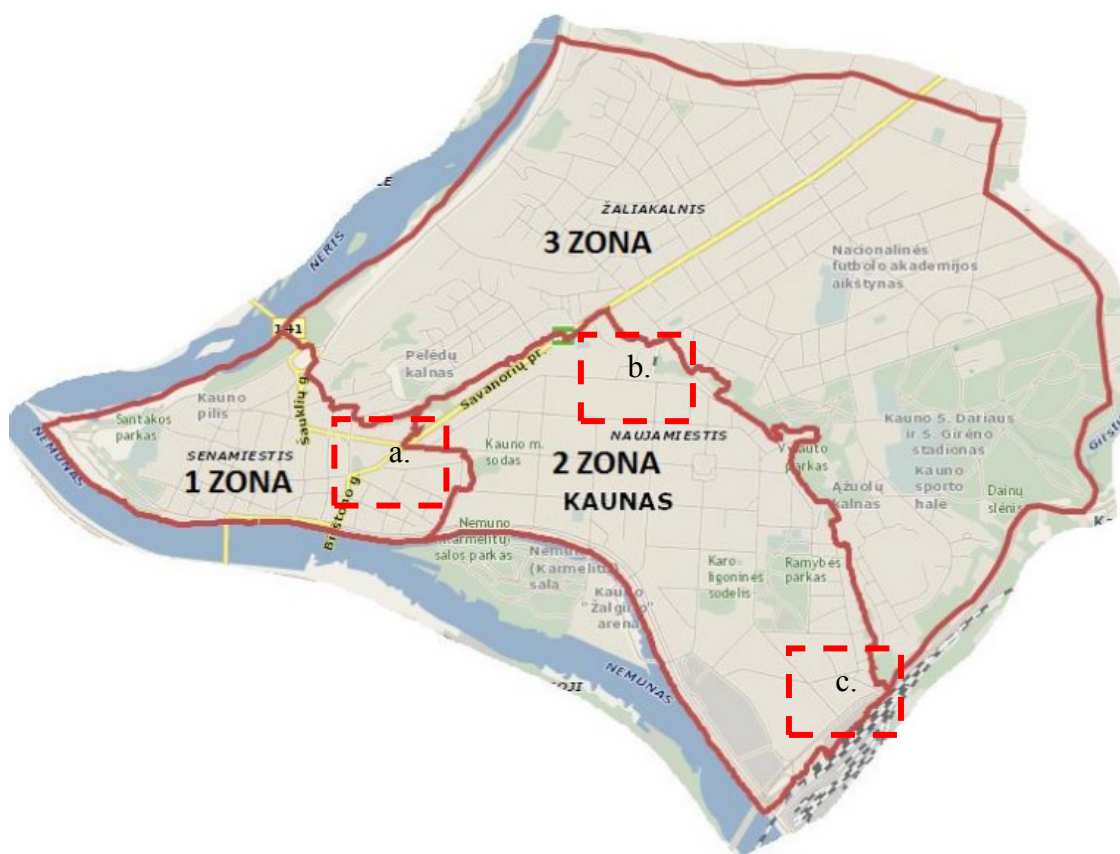


Fig. 1 Territory analyzed (1 zone – Old Town, 2 zone – New Town, 3 zone – Žaliakalnis)

- a. Territory of the KAFe2019 topic No.1: The Centre of the Righteous Among the Nations and the Memorial in Kaunas**
- b. Territory of the KAFe2019 topic No.2: Emmanuel Levinas Centre of Philosophy and Square in V. Putvinskio Str., Kaunas**
- c. Territory of the KAFe2019 topic No.4: Market forum M. K. Čiurlionio Str., Kaunas**

2. Natural conditions

In the central part of the city there are important parts of natural framework of the city, such as: Nemunas basin, island, riversides, greenery and slopes (fig. 2-4).

Old Town and New Town combines into one compact territory, which includes both, urban and natural areas. Upper altitude of the right quay is about 26.00 – 28.00m, lower altitude of the same quay is 22.6 m. Altitude of the horizon of Nemunas waters is about 20.00 m. The terrain of Nemunas Island is relatively flat; the altitudes of the surface fluctuate from 23.00m to 24.00m. In the island, there are not many trees and shrubs. Today Nemunas Island and the right riverside are not suitable for recreational purposes and are not used for leisure activities.

Southern parts of Old Town and New Town with its public, commercial and residential territories are lacking relation with Nemunas. The greenery system is not consistent. (fig. 4, 5).



Fig. 2. View of Kaunas central part (Nemunas valley)

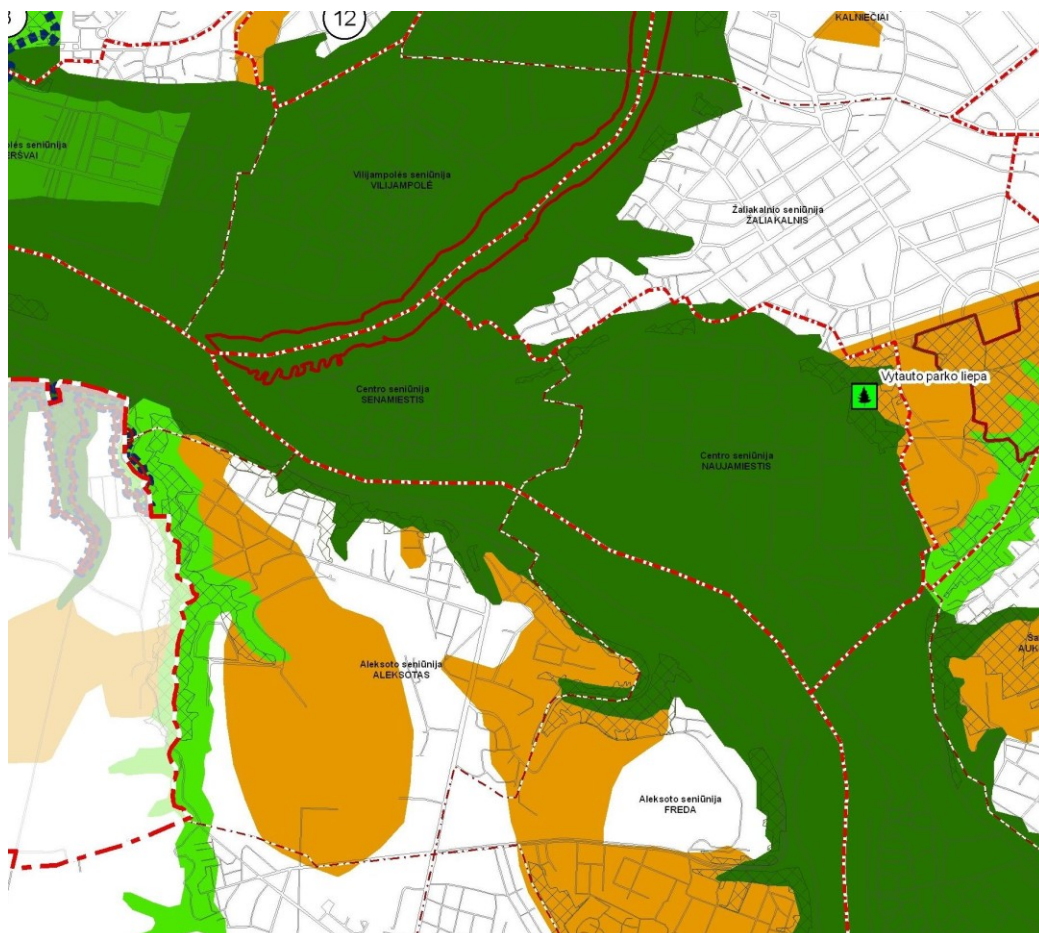


Fig. 3. Nemunas and its valley is a migration corridor on the regional scale

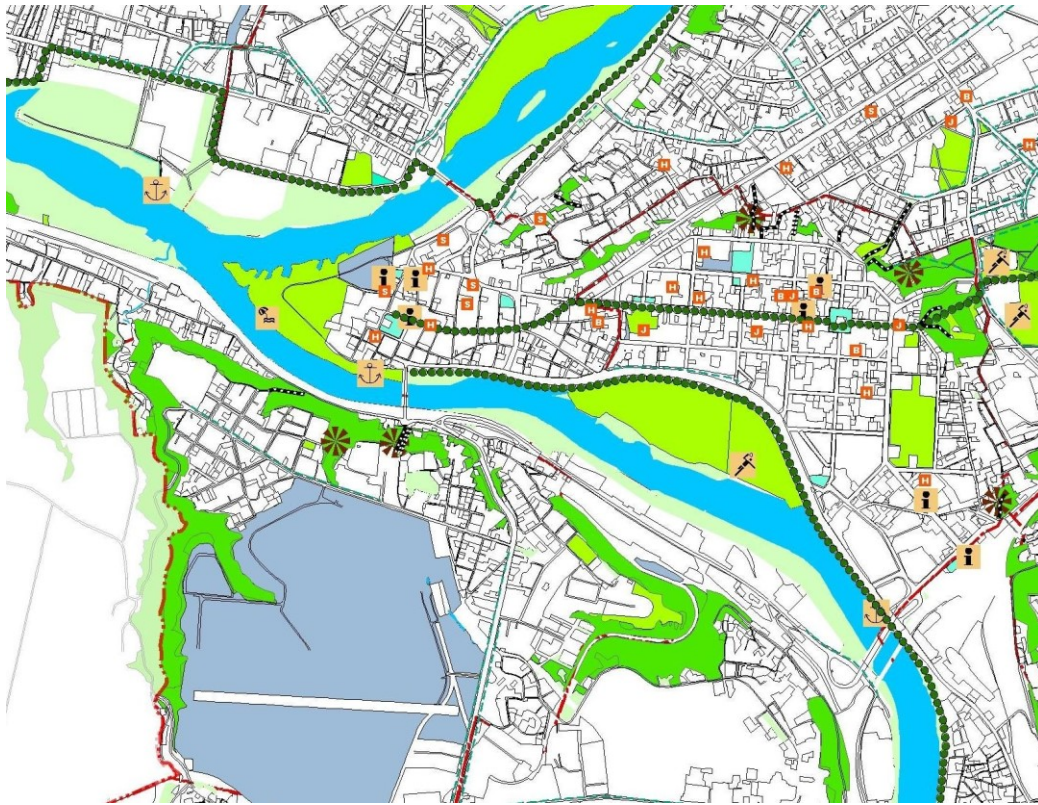


Fig. 4. Greenery system in the central part of the city

From the ecological point of view Nemunas and its slopes is the most sensitive part of the territory, which is rearranged. The river and its valley is a migration corridor on the regional scale (fig. 3, 4). It is important to preserve already existing ecological balance of the landscape and create system of open and green areas. These areas would not only serve ecological purposes, but also would be useful for people. Moreover, they would form spatial composition of townscape, i.e. they would become a part of urban structure from both, compositional and functional, standpoints.



Fig. 5. Nemunas right riverside



Fig. 6. Nemunas left riverside



Fig. 7. Abandoned green areas in Nemunas left riverside

3. History and cultural heritage

New Town is central part of the city which started to develop after 1847. Its plan is similar to a rectangle; it has 3 squares arranged in chess order and one wide central street. These objects are here since czarism period (fig. 8, 9). In New Town there are especially many architectural monuments from interwar period. Places like Vienybės and Savivaldybės Squares, City Garden, Ramybės and Vytauto Parks, Nemunas Island, Laisvės Ave. are important for the city and for the whole country. Most of the administrative institutions, museums, theatres, cinemas, prestigious shops, hotels and banks are in New Town. In this part of the city intensive social and cultural life is going on. After building shopping and entertainment centre Akropolis and Žalgiris arena New Town became more intensively urbanized. Consequently, more people are visiting this area and traffic became very heavy which harms the environment. There are not enough parking lots. New buildings are constructed (e.g. shopping and entertainment centre Akropolis, Žalgiris arena, etc.), old are

reconstructed and their architecture is not always contextual with architectural and urban environment of New Town. There is no connection between urban structure of New Town and the river.

Old Town is the oldest part of the city and the most valuable territorial relic from GDL (Grand Duchy of Lithuania) times. Since 13th century until 1540 the structure of this part of the city was radial, but after 1540 it was transformed into rectangular one (fig. 8, 10). The architecture of Old Town was influenced by Gothic, Renaissance and Baroque. Not the whole Old Town is equally valuable, most valuable is the western part up to Gimnazijos St. Physical condition of Old Town is diverse, some of the areas are authentic, but some are ruined as most of the buildings are deconstructed. The most violated areas are close to Gimnazijos St. and in the inner parts of the area. The main problem of this area is traffic since New Town is crossed by main streets heading from city centre (Šauklių St.) to Vilijampolė. In the approaches of New Town there are no convenient parking lots. Complicated traffic conditions causes major problems for commercial and public institutions situated in this area. As well as New Town, part of Old Town is cut off from the river by Karaliaus Mindaugo Ave. All of these problems are also typical for the southern parts of Old Town and New Town where residential, commercial, public and industrial buildings as well as recreational areas (Nemunas Island) are situated. Most of these objects (commercial, public, industrial and recreational) are not finished or not taken proper care of (e.g. hotel Respublika, commercial area in Kaunakiemio St., surroundings of Kauno Audiniai, PLC, etc.). Even though someone would invest in them, it is not clear yet how they should be restructured. There is no connection with Nemunas as well.

From the cultural point of view in the southern parts of Old Town and New Town there are many heritage objects such as urbanized areas and building blocks (fig. 8, 9). Term heritage objects embraces the monumental part of Old Town up to I. Kanto St., part of New Town between I. Kanto St. and S. Daukanto St. which have features of cultural value, part of New Town between Karo Ligoninės St. and S. Daukanto St. which is declared to be a cultural value, part of New Town between Karo Ligoninės St. and M. K. Čiurlionio St. which has features of cultural value, monument Evangelical Lutherans Church and a block of houses in Muitinės St., cultural value White friar Church and monastery in Gedimino St., buildings of Kauno audiniai, PLC in Kęstučio St. and of Kauno pienas, PLC in Kaunakiemio St. which have features of a cultural value (table 1).

1 Table

Cultural heritage objects in central part of the city (in Nemunas valley), ways to preserve them, management and usage regimes (according to Kaunas city general plan)

Object No.	Object's name and cultural value (MV – monumental value, CV – cultural value, FV – objects with features of cultural value)	Main ways to preserve objects: A – authenticity, C – copies, I – imitations.	Main management regimes: CO – conservation, CR – conservation and restoration, RS – restoration, RR – restoration and reconstruction.	Main usage regimes: R – reserved, LU – limited usage, U – universal.
1	2	3	4	5
	Urbanized areas (U)			
1.	Monumental part of Old Town (MV)	A	CO	R
2.	New Town (CV)	A	CR	LU
3.	Eastside of New Town (FV)	I	RR	U
4.	Southside of New Town between I. Kanto St., Kęstučio St., S. Daukanto St. and Karaliaus Mindaugo Ave. (FV)	I	RR	U
5.	Urbanized area in Aleksotas between H.O. Minkovskių St. and J. Bakanausko St. (FV)	I	RR	U
	Memorial places (M)			
	Burial sites (MI)			
6.	Aleksotas Jewish cemetery (between H. O. Minkovskių St. and Aleksotas slope) (FV)	C	RR	LU
	Building blocks (SK)			
	Old Town			
7.	Evangelical Lutherans Church and a block of houses in Muitinės St. (MV)	A	RR	LU
	New Town			
8.	Cross Church and White Friar monastery complex in Gedimino St. (CV)	A	RS	LU
9.	Buildings of <i>Kauno audiniai</i> , PLC in Kęstučio St. (FV)	C	RR	U
10.	Buildings of <i>Kauno pienas</i> , PLC in Kaunakiemio St. (FV)	C	RR	U
	Warehouses			
11.	Grain warehouses. Total area about 3,2 ha, in the north has boundary with H. O. Minkovskių St., in the south with railroad (CV)	A	CR	LU

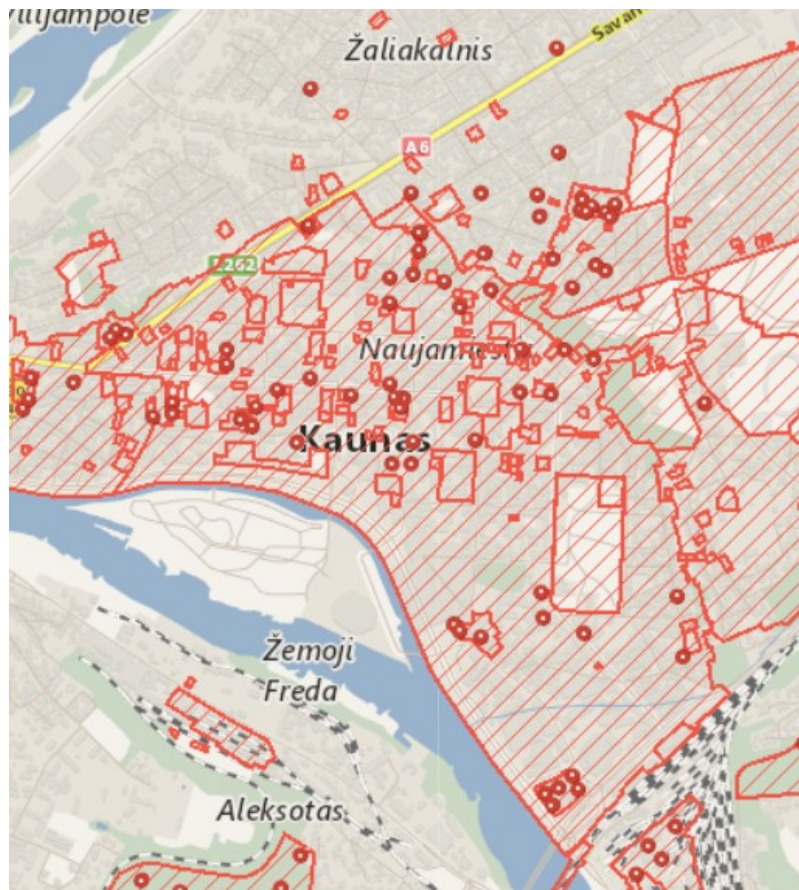


Fig. 8. Cultural heritage objects in New Town (<https://kvr.kpd.lt/#/static-heritage-search>)



Fig. 9. Cultural heritage objects in Old Town (<https://kvr.kpd.lt/#/static-heritage-search>)

Natural conditions and cultural heritage objects make Kaunas centre unique, exceptional and visually expressive. These two factors may not be forgotten while making suggestions for future architectural and urban objects in the central part of the city.

4. Urban framework and townscape

Historically southern parts of Old Town and New Town have perimetrical plan and 2-5 storey buildings. In some areas this plan is ignored, but it could be restored (e.g. in Nemuno St., etc.). Buildings in this area are commercial, residential and public; all of them are in different state. Residential, commercial and public buildings are in a good condition whereas the condition of the former industrial buildings in Kaunakiemio St. is poor. They are built chaotically so conversion is necessary. The newest buildings are shopping and entertainment centre Akropolis and Žalgiris arena in Nemunas Island (fig.10). These two large buildings ignore historical plan of the city, but they attract constant streams of people. On the one hand it makes Kaunas centre a vibrant place, but on the other hand it misbalances the uniformity of city centre usage.

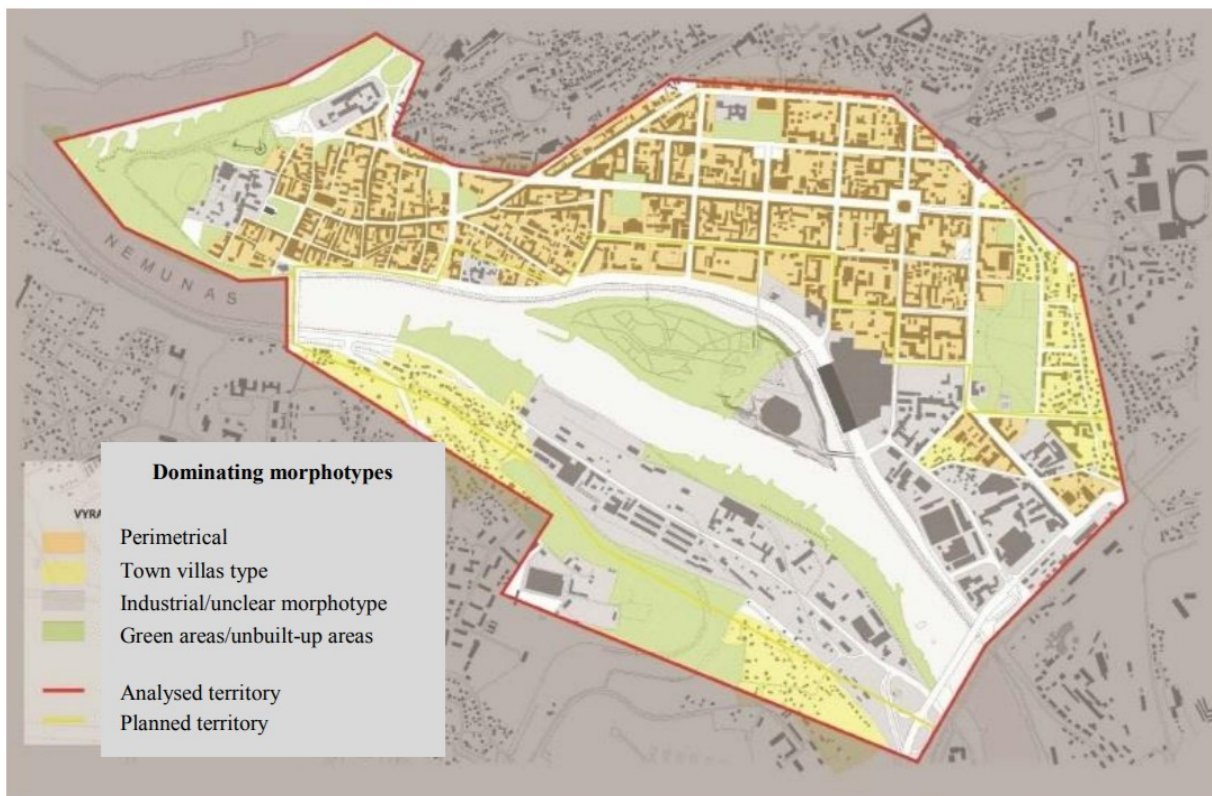


Fig. 10. Morphotypes of built-up areas in Kaunas centre

Southern parts of Old Town and New Town determine the value of Nemunas valley, its composition, harmony and significance. Valuable visual accents are Vytauto, Evangelical Lutherans, Town Hall, Jesuits, and White Friar Churches, St. Peter and St. Paul arch-cathedral

basilicas, towers of Christ's Resurrection Church, tower of a residential building at the crossing of S. Daukanto St. and Karaliaus Mindaugo Ave. However the visual value of these buildings is not highlighted enough since they stand in the shadow of hotel Respublika which is located in Karaliaus Mindaugo ave. (construction works started during the Soviet period, but the hotel was never finished), shopping and entertainment centre Akropolis and Žalgiris arena. These buildings stand in a sharp contrast to urban architectural context according their scale. Other various buildings together with vegetation and waters serve as a background and emphasize already mentioned positive and negative visual accents of this area. (fig. 11-13).

The system of landmarks along the right riverside of Nemunas doesn't have a visual dominant which would finish the hierarchy of spatial landmarks. A tower or a group of towers which would serve as a dominant might be built between Kaunakiemio St. and Karaliaus Mindaugo Ave. where construction of public and commercial buildings might take place.

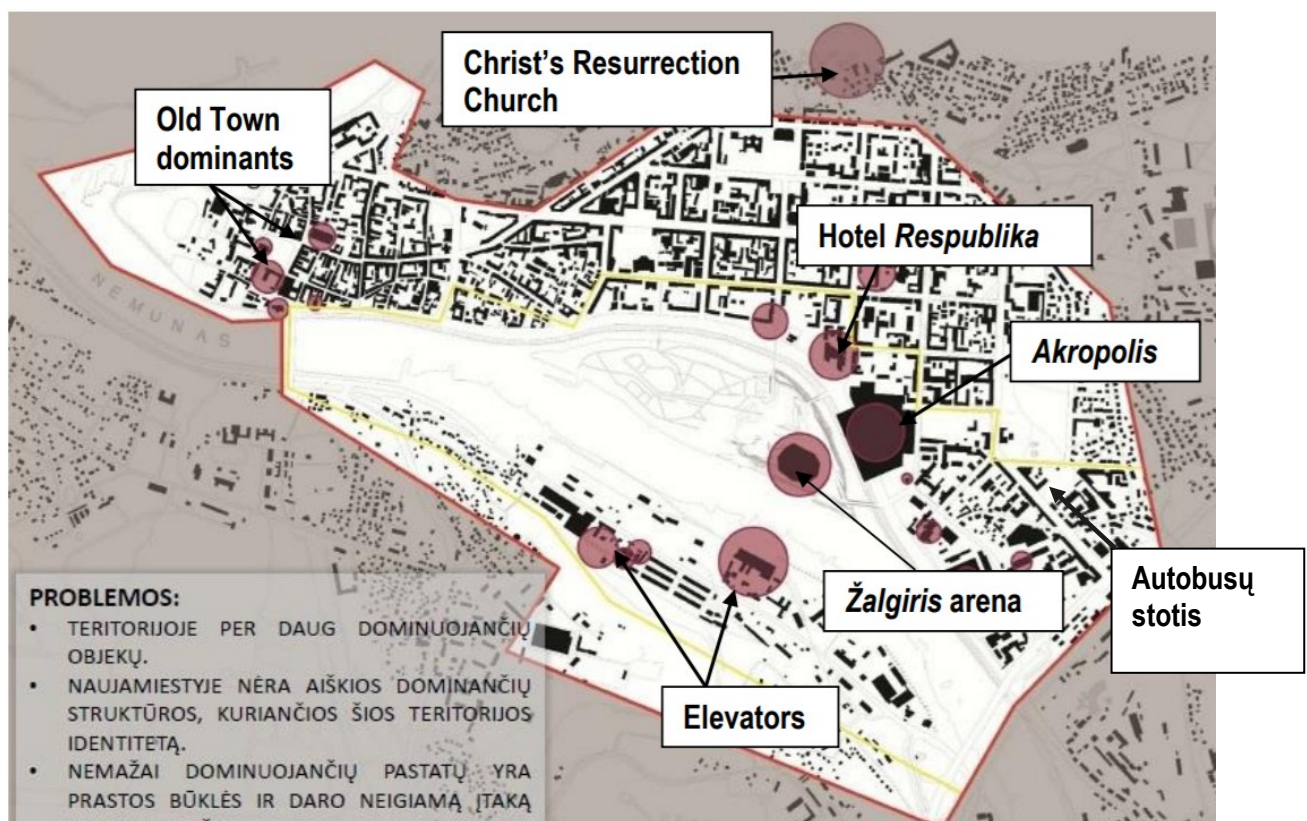
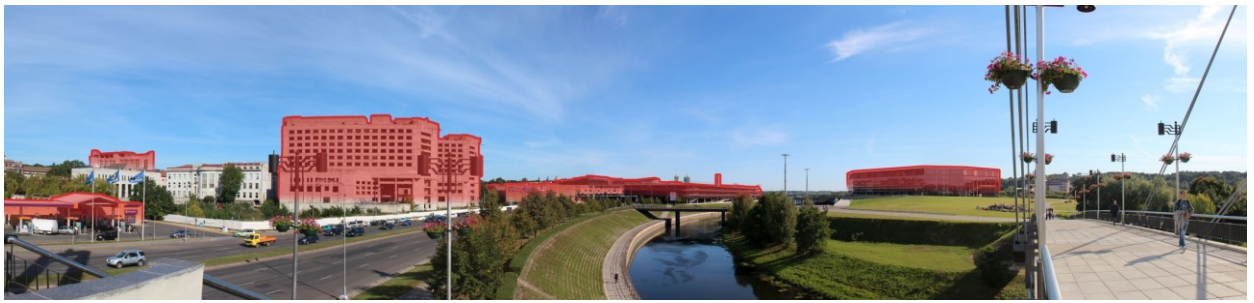


Fig. 11. Buildings, which visually dominate in the city centre



a)



b)



c)



d)

Fig. 12. Hotel, Akropolis and Arena (a), historical dominants in Old Town (b), the view of the right and the left riversides of Nemunas from M. K. Čiurlionio Bridge (c), New Bus station (d)

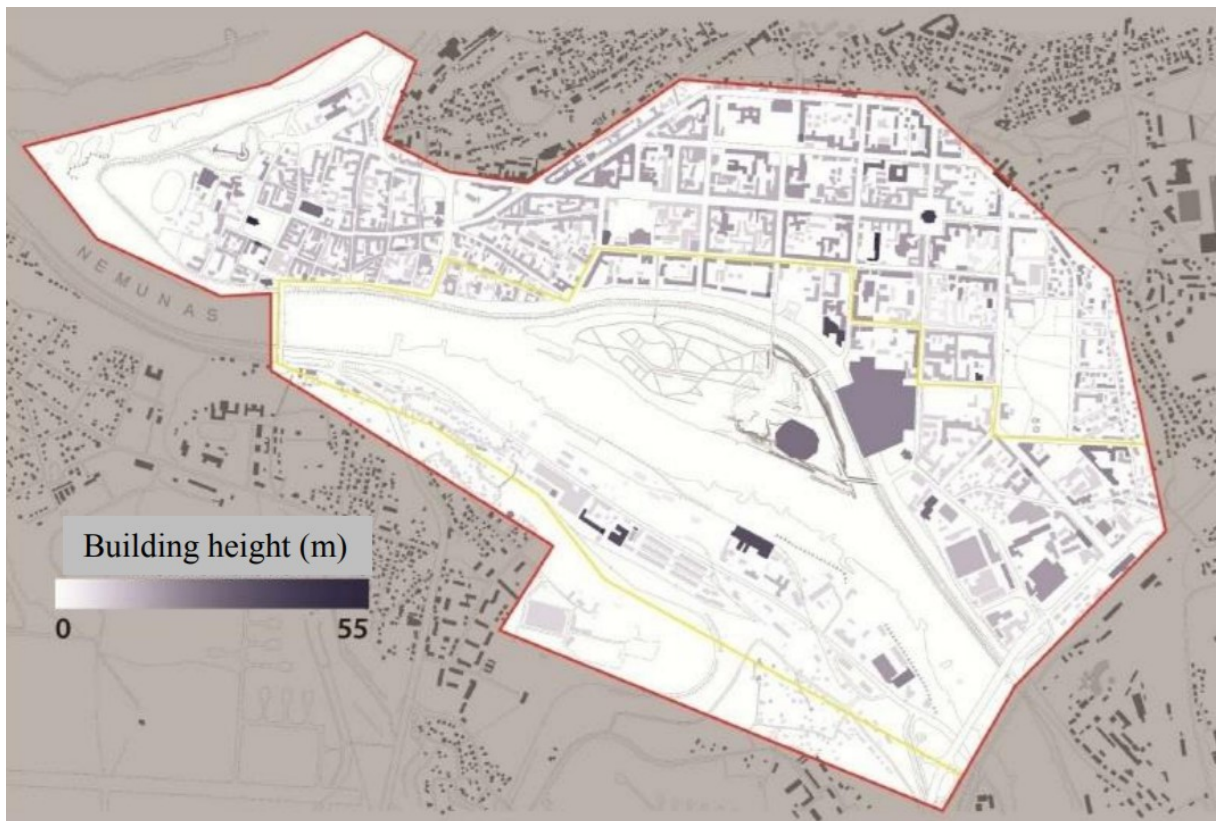


Fig. 13. Building height scheme

Nemunas slope may be used as a visual background for the lower terrace since it has an aesthetic and visual value (fig.14).

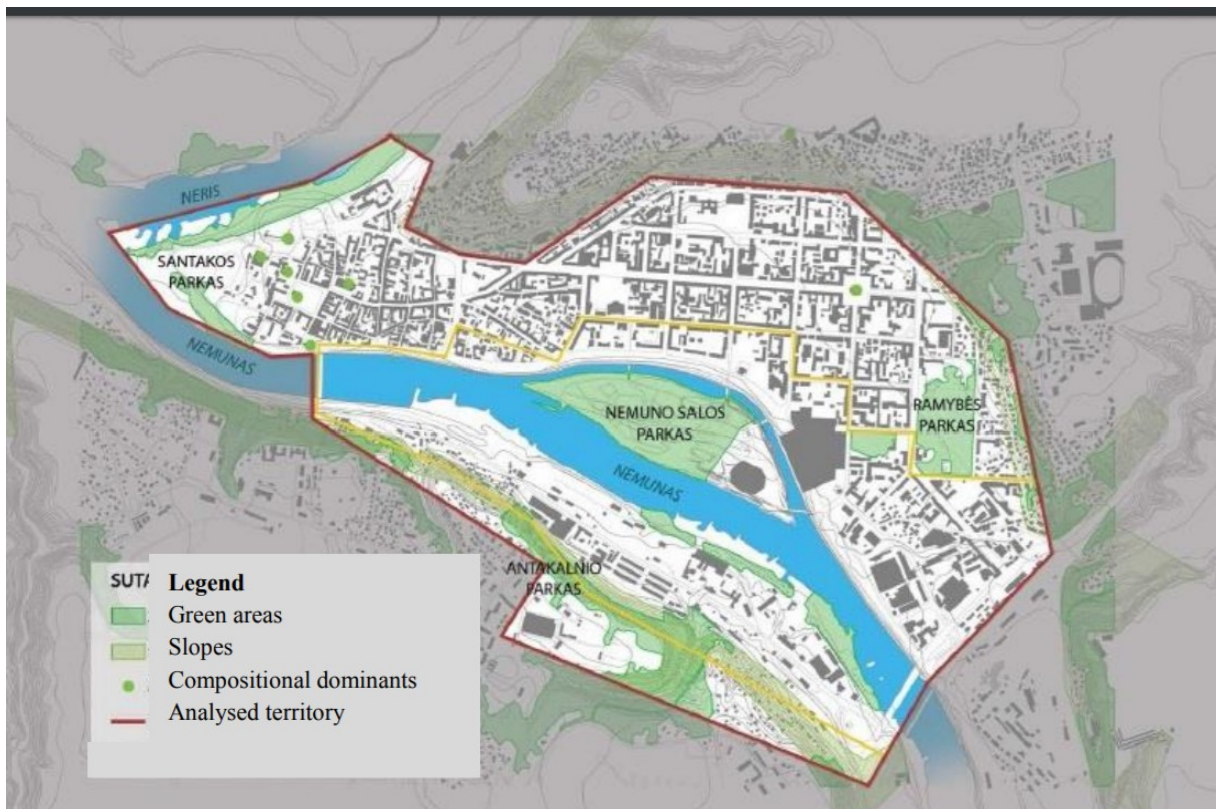


Fig. 14 Natural components like slopes and vegetation of Nemunas valley form the townscape

5. Transport system

The key point of transport system in southern parts of Old Town and New Town is Karaliaus Mindaugo Avenue. With 8 traffic lanes it is the widest street in New Town. Streets with heavy traffic, such as Birštono, I. Kanto, Maironio, A. Mickevičiaus and Kaunakiemio join this avenue. Across Nemunas there are two bridges: Vytauto Didžiojo Bridge and M. K. Čiurlionio Bridge (fig. 15, 16). Area is lacking for pedestrian links between the riversides of Nemunas and the island (fig. 15, 17, 18); the Nemunas is not used for shipping passengers (fig. 19). It proves that pedestrian bridge from Lower Freda to Nemunas Island is needed. Docks could be built on the island and additional bridges could connect it to the right and left riversides of Nemunas. Disproportionally wide Karaliaus Mindaugo Avenue (fig. 16) could be narrowed and pedestrian boulevard could be formed.

Serious problem in southern parts of Old Town and New Town is a lack of parking lots

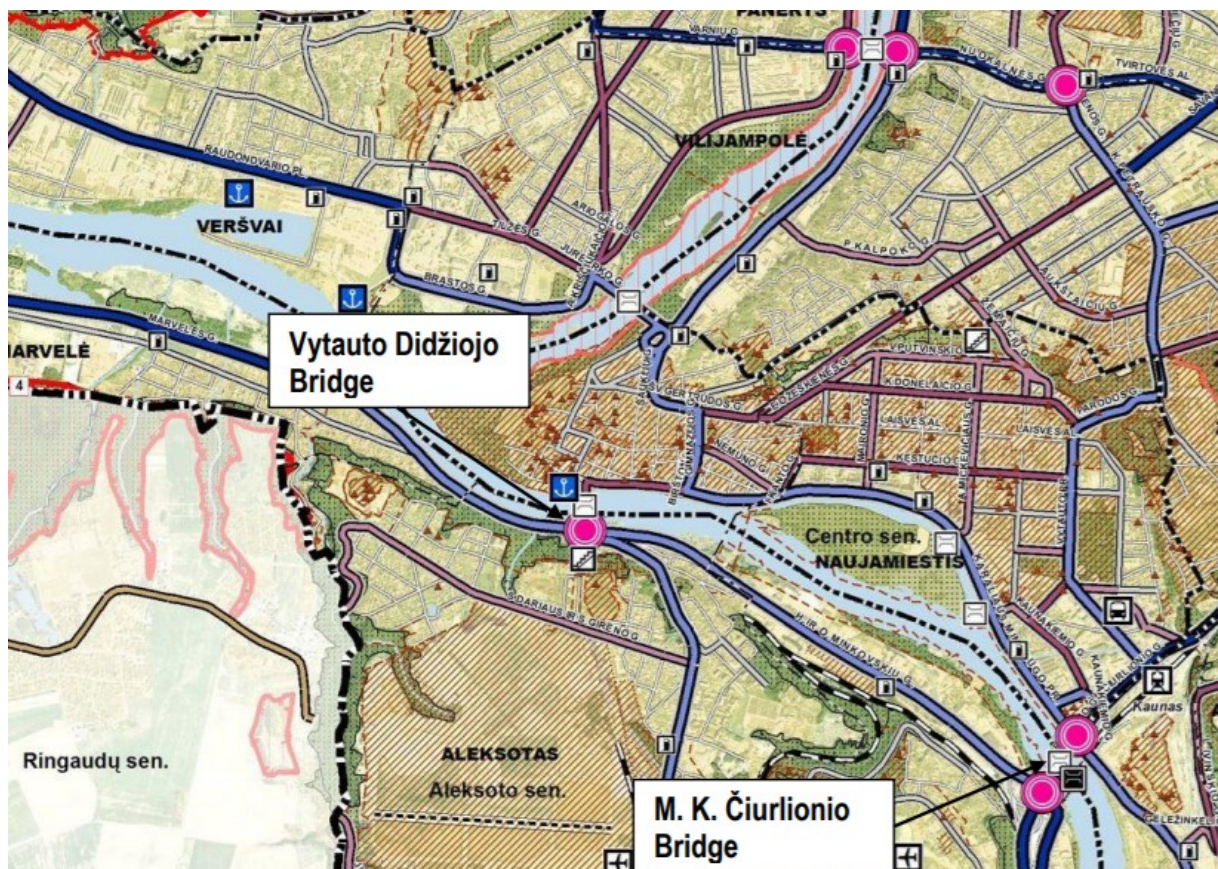


Fig. 15. Transport scheme



Fig. 16. Karaliaus Mindaugo Avenue cut offs city from the river

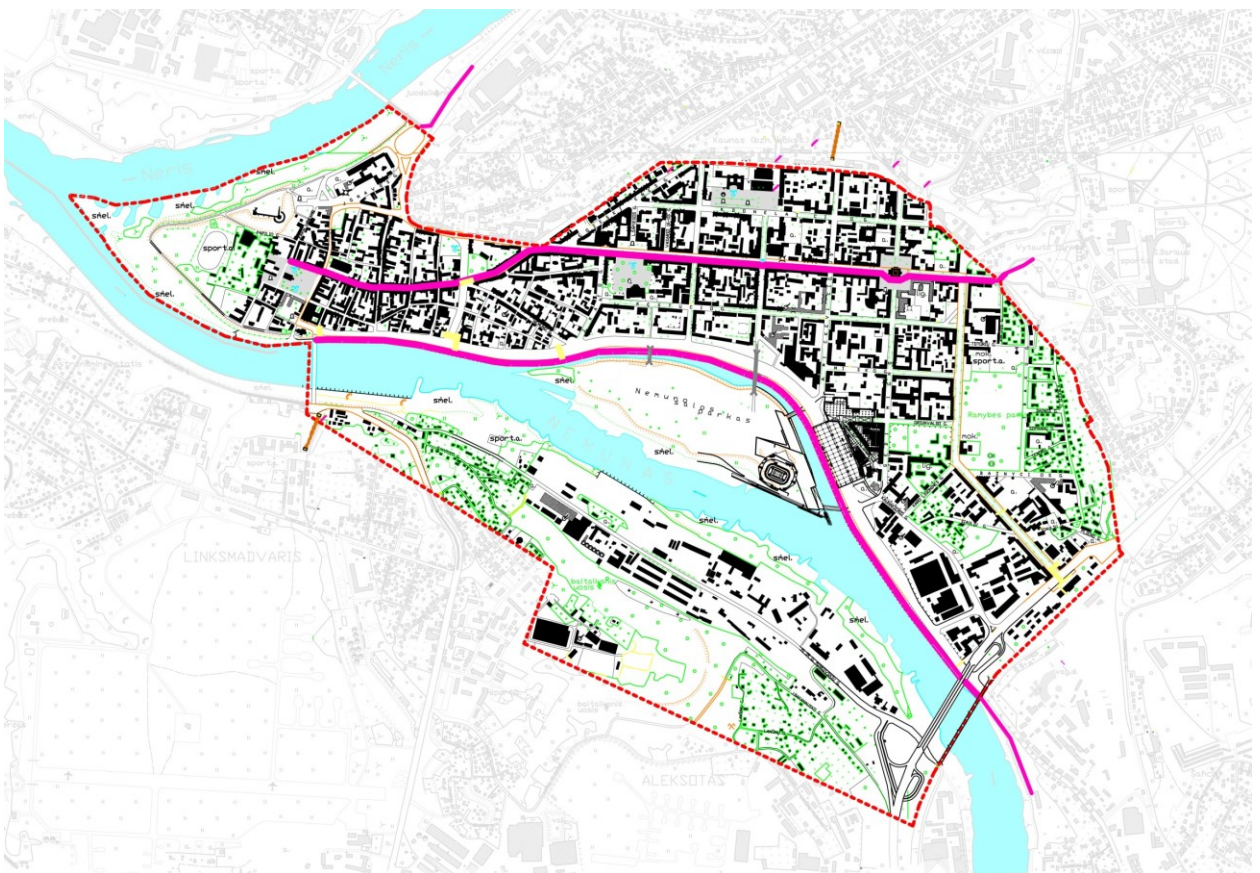


Fig. 17. Bicycle roads scheme

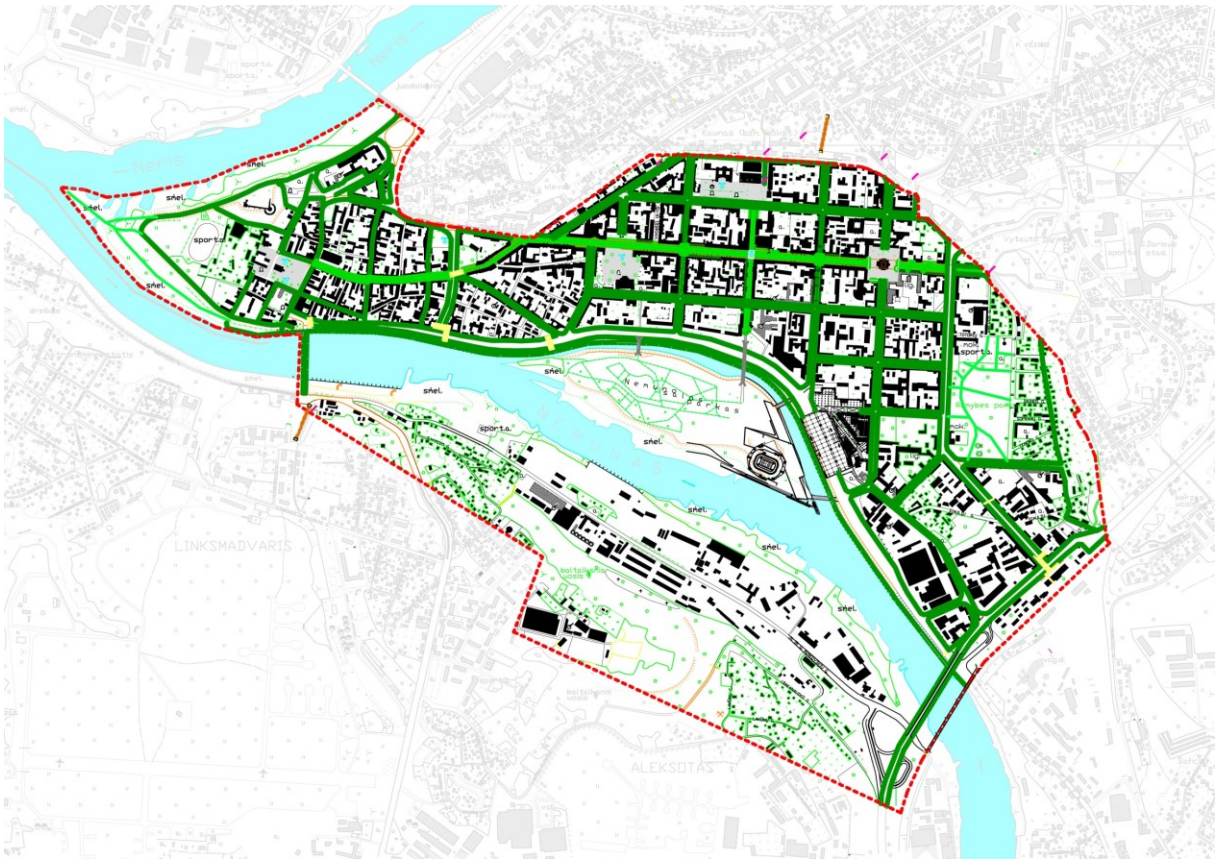


Fig. 18. Pedestrian roads scheme

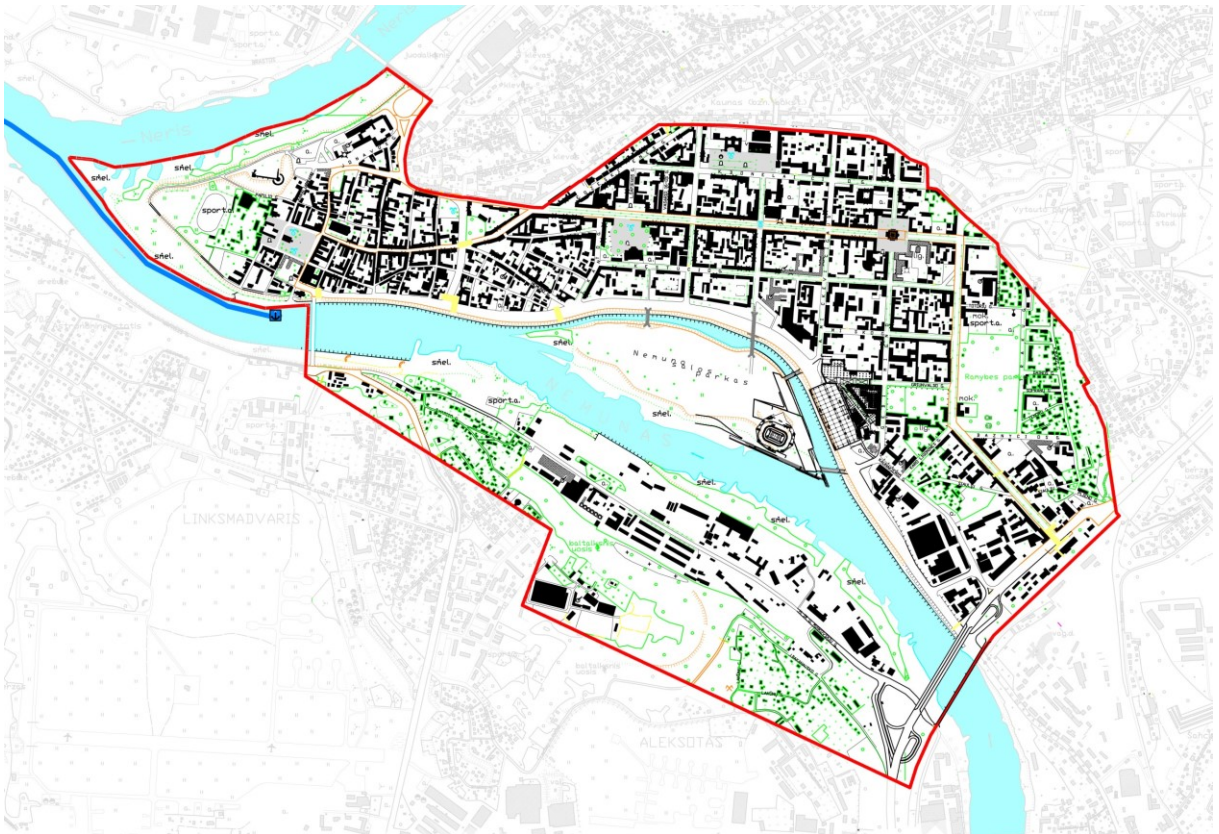


Fig. 19. Water roads scheme

6. Public places, recreational infrastructure

Public places are related to the street culture (according to L. Mumford this is one of the main features of city life). Objects like streets in the Old City where traffic isn't heavy, pedestrian streets, squares, green areas with recreational infrastructure, pedestrian zones close to the main streets which create multifunctional corridors, areas next to shopping centres where people gather naturally, etc. are called public places. The system of public places is not developed in Kaunas since it wasn't planned in advance.

City centre (Old Town and New Town) is exceptional since over there the system of public places is highly developed (fig. 20). The most popular public places are large pedestrian streets such as Laisvės Ave. and Vilniaus St., squares, areas next to shopping centres and transport nodes like train and bus stations, attractions along the riversides (e.g. amphitheater in Old Town) and other places with recreational infrastructure. Most of the green areas are not looked after and are unsuitable for recreation.

Consequently, they are either unused or used rarely (fig. 21). Green areas in Lower Freda are not looked after at all, Nemunas Island Park has poor infrastructure, greenery system has tenuous connection with pedestrian and bicycle roads, etc. One of the reasons why public places are used unevenly is huge shopping and entertainment centre Akropolis which attracts large flows of visitors. This problem could be solved by improving and developing infrastructure of public places, and creating new centres of attraction.

Public spaces are only viable when they meet everyday needs. Virtually all public spaces in city centre (except for the approaches of Žalgiris arena) are used every day (fig. 22). This allows forming viable system of public spaces in city centre. It is especially important to improve system of public spaces in Lower Freda where even the main streets do not have pavements, there are no pedestrian areas and riversides are not looked after. Public spaces can only be viable if it is easy to reach them either by car or on foot. It is easy to reach public spaces of New Town and Old Town, but from there it is difficult to get to the left riverside of Nemunas and Lower Freda. This indicates the need to build Birštono St. Bridge and a bridge between Lower Freda and Nemunas Island (fig. 23). Popular public spaces should be safe. From this point of view the least attractive spaces are parks (Nemunas Island Park, Ramybės Park) and abandoned riversides in Lower Freda (fig. 24).

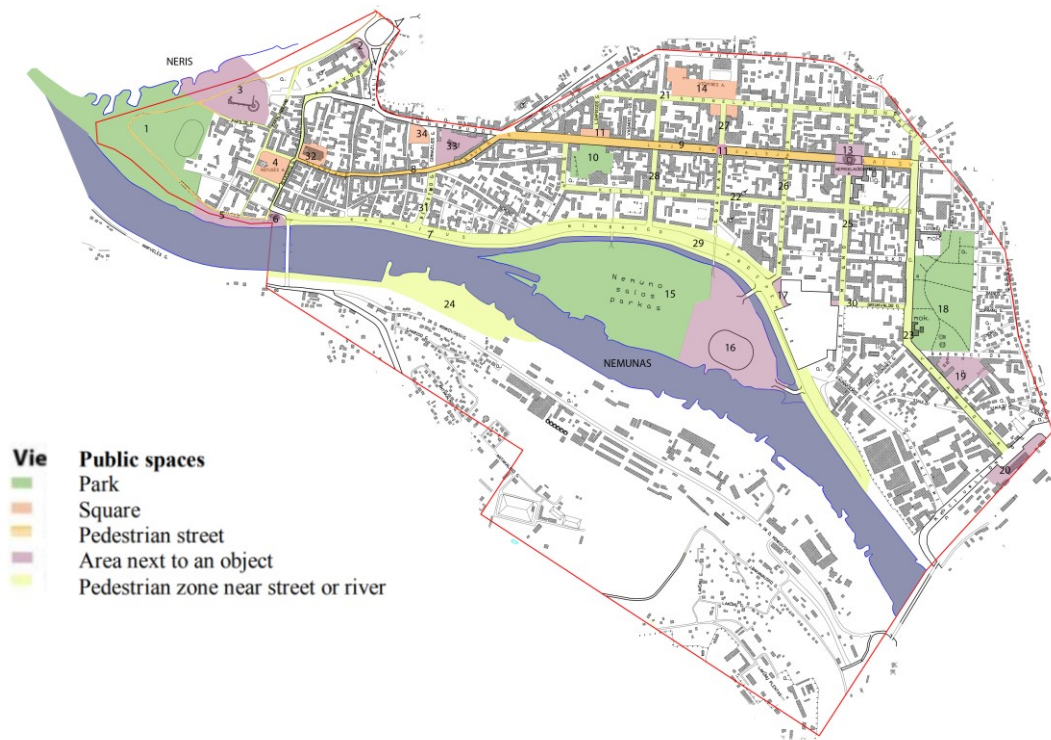


Fig. 20. System of public spaces in city centre



Fig. 21. Usage intensity of public spaces

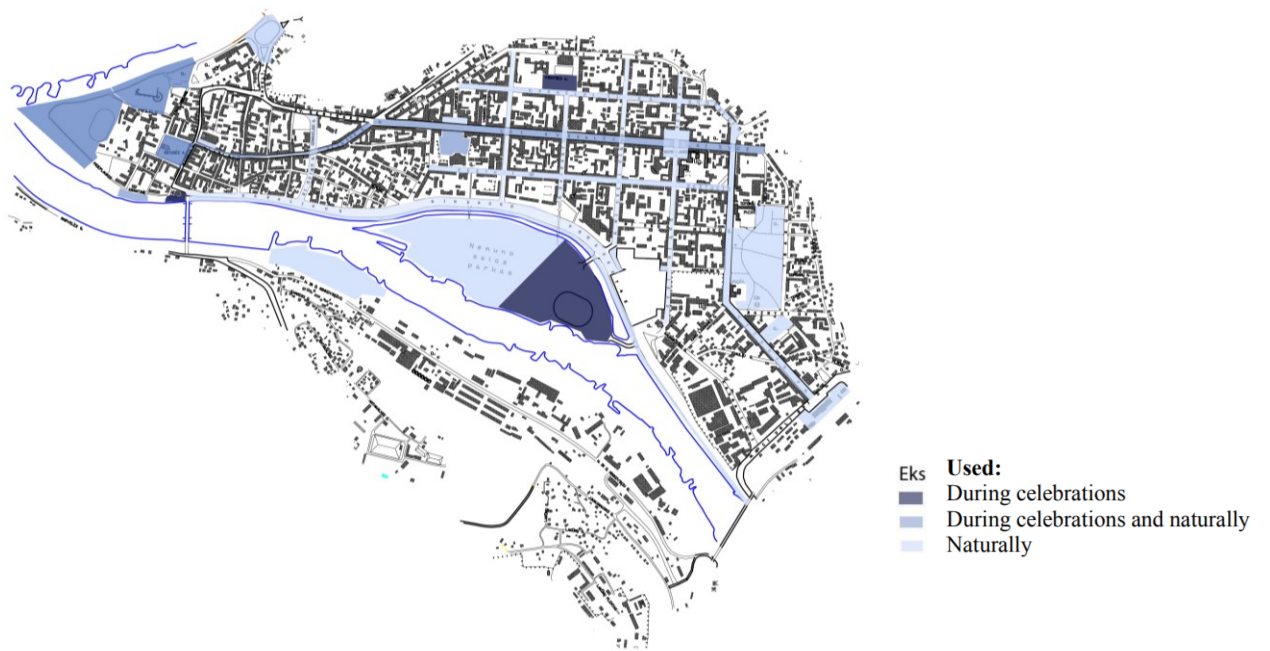


Fig. 22. Usage types of public places

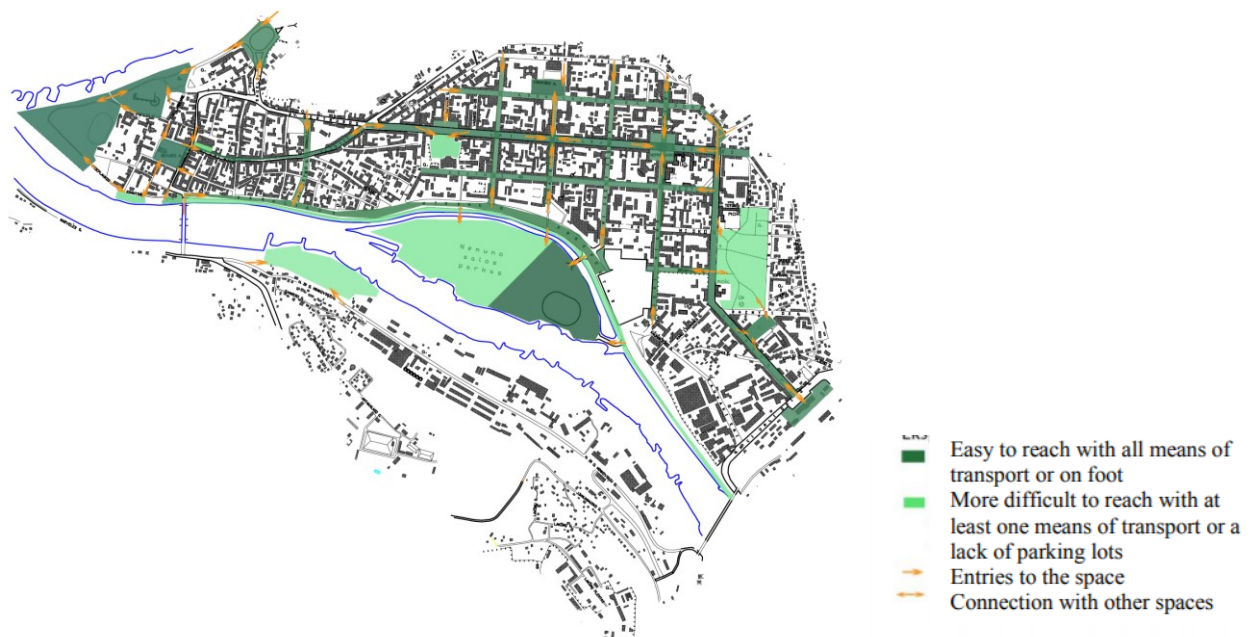


Fig. 23. Attainability of public spaces

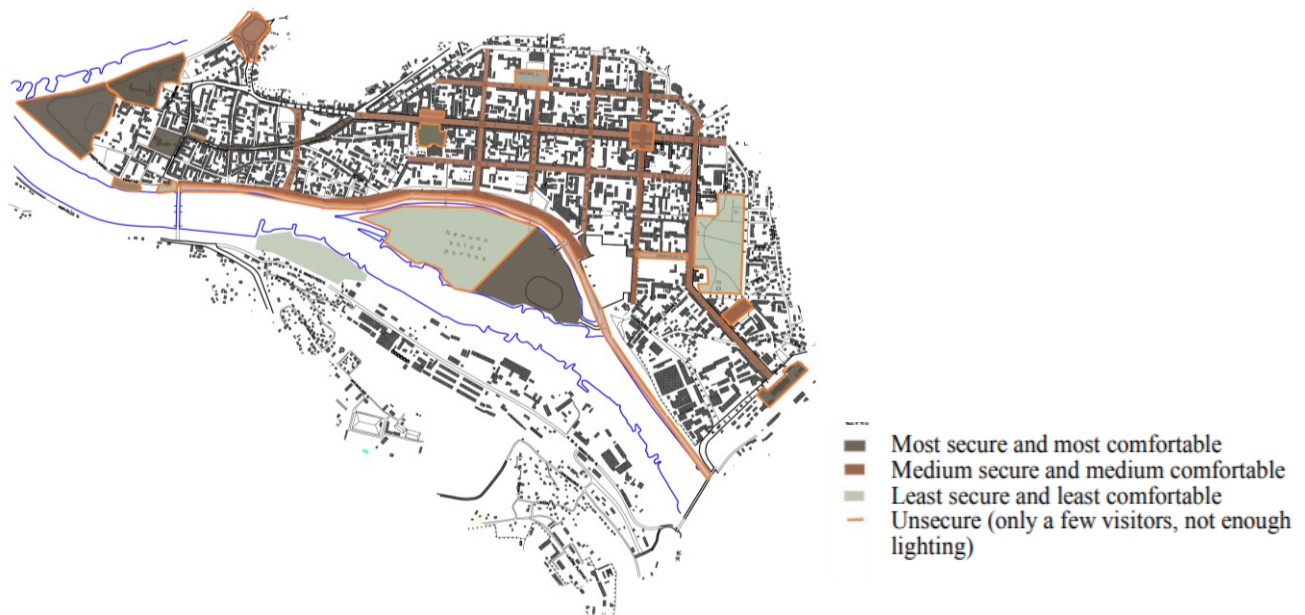


Fig. 24 . Security and attractiveness of public spaces

7. Social infrastructure

Social infrastructure consists of training and educational institutions (preschools, secondary schools, schools for additional training and social development, universities, colleges and vocational schools), health services (hospitals, primary healthcare centres, etc.) and public institutions (municipality, cultural institutions). In New Town and Old Town there is a wide network of educational institutions (primary, secondary, high schools, colleges and universities), quite many health care institutions (pharmacies, dentist's cabinets), especially many cultural institutions (theatres, museums, cinemas, etc.).

Moreover, in this part of the city buildings of governmental institutions are located (municipality) (fig. 25-28). Lower Freda is commercial and industrial region, consequently, social structure is not developed. When industrial territories are converted into public, commercial or residential, social infrastructure also should be developed.

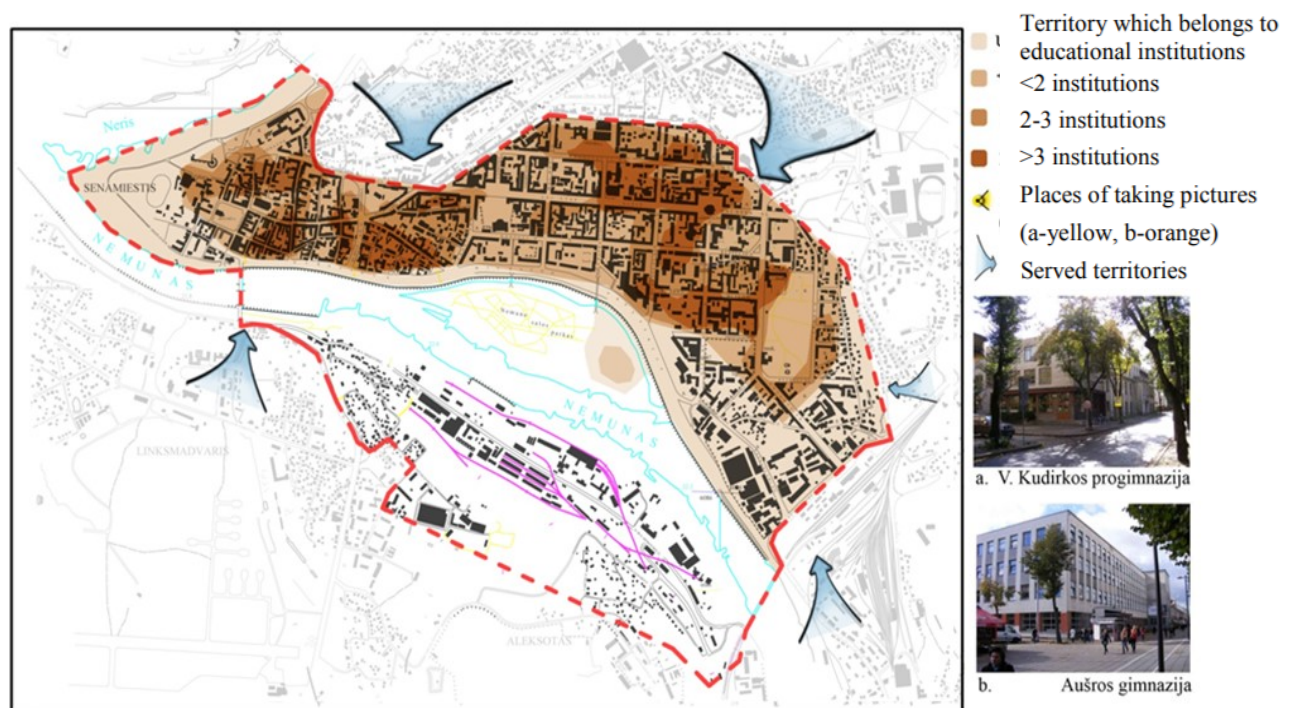


Fig. 25. Density of educational institutions

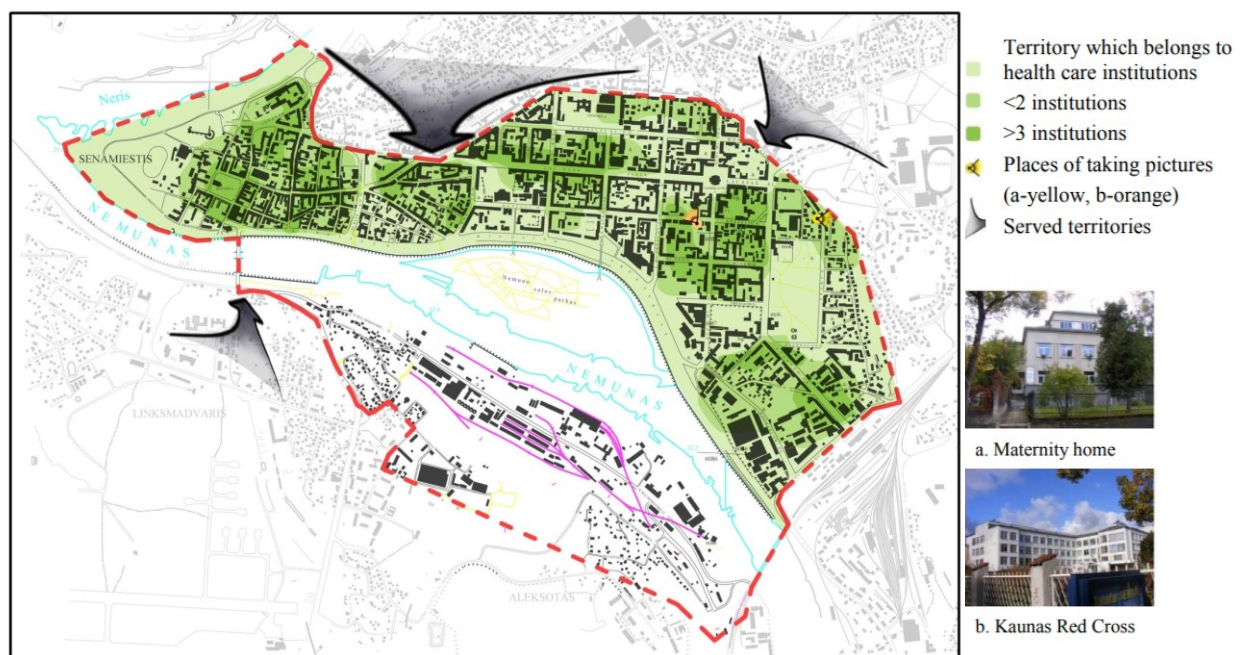


Fig. 26. Density of health care institutions

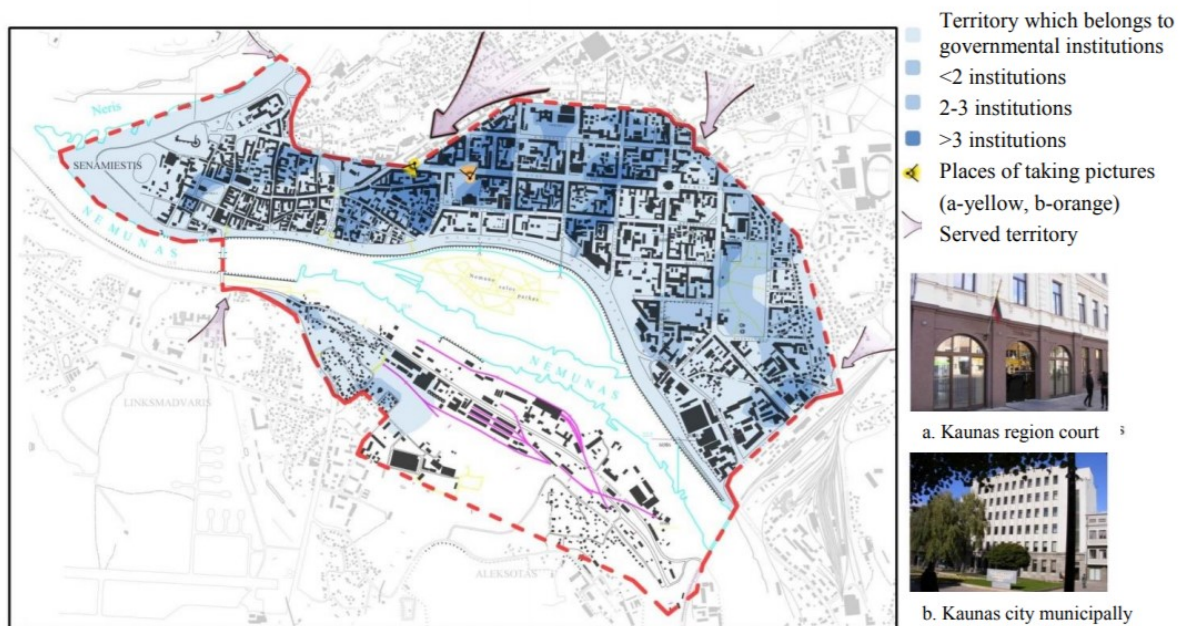


Fig. 27. Density of governmental institutions



Fig. 28. Density of cultural institutions

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