Looking for the Fusion of Cultural Environment and Modernity in a Cityscape: Western Gate in Jelgava

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Abstract. The research is based on the examination of the cityscape transformation processes and a search for the fusion of the cultural and historical space and the trends of contemporary modernism in architecture. Over the last three centuries, Jelgava (Mitau), the capital of the former Dutchy of Courland, has changed the height, the density and the structure of its building. The process of transformation was determined by crisis situations in the state, by rapid growth of the trade and domestic economy, as well as by the period of state independence and downfall of the national economy. Splendour and misery of the city has raised and destroyed houses, parks and churches in Jelgava. The historical map of the city originates in the beginning of the 18th century on the left bank of the Lielupe River with a linear building canvas formed by small wooden houses and a net of dirt roads. During the 19th-20th centuries, the city is developing radially around the ancient central built-up area, sketching the structure of the city map based on the network of the trading routes: the Western gate – Dobele, the Northern gate – sea, the Southern gate – Lithuania. The East is a crossing point to reach Jelgava Palace. The direction to Riga led along the river, as the eastern part was a marshland.

1. Introduction
The research provides a detailed examination of the territory of the Western gate starting from 1804, when typical medieval dykes around cities were destroyed and protection channels were buried during the existence of the Dutchy of Courland. Jelgava experienced new development in the western direction behind the channel connecting Svete and Driksa rivers. During the 20s-30s of the 20th century, this territory was filled with gardens and elegant wooden summer houses, occupying about 200-300 m wide line along the channel up to the Svete River. In the 70s of the 20th century, a new building circle appears westwards in 500 m from the channel – a mixed-use development consisting of residential buildings, a school, kindergartens. Certain industrial territories are also preserved – car repair areas, warehouses, a nursery garden, roadbuilding and manufacturing areas etc. [2].

In the 20s of the 20th century, a one more building circle appears in the Western gate area, which is connected with the ring road, linking the northern and the southern bridges of the city. Based on the results of examination of historical data and materials, the research analyses the urban environment of the city in terms of its transformational processes. Considering the trends of development of contemporary modernism in architecture, a conceptual solution has been elaborated during the process of the research. The aim of the research: to identify the processes of transformation of the urban environment and to provide the architectonical spatial solutions for the territory of the Western gate in Jelgava city.
2. Materials and Methods
The informational and theoretical basis of the research is formed by the analytical overview of architectural spatial solutions in the urban environment, their basic principles in outdoor space. To achieve the goal of the research, scientific research sources, publications and monograph materials have been used. Three scientific research methods were used in the process of research. Quantitative method – for the research of building structure and obtaining structured information, comparative analysis method - for the research of historical materials and current situation in Jelgava city, and the third method: descriptive or monographic method based on the summary of the research materials, research findings and results obtained.

3. Results and Discussions
The historical plan of the city at the end of the 18th century shows that there were several entrance “gates” or roads in the city (Fig. 1), which led to the historical centre of the city or the town hall square, where the town hall, church and pastorate were located. Drinking water was supplied to the city from a canal (Fig. 2), which connected the Svete river with the Driksa river. The canal was located in the western part of the city until the 20s-30s of the 20th century, creating a romantic suburban area with one-storey wooden buildings, steep tiled roofs and a dense row of trees along the canal, which gave the townspeople a shady walking promenade in summer. As the city developed, its ramparts and entrance gates were removed (1804). The city's buildings also slowly expanded behind the canal in the western direction, where meadows with large pastures, turnip and potato fields were located [13; 2].

The dirt road from the old Western Gate led in the direction of Dobele along the downstream of the right bank of Svete, forming wide floodplains on both banks of the river. The site of the city's border gate was marked by the impressive bell tower of St. Anna’s Church. Along with the low wooden buildings with an expressive red-tiled roof landscape, it majestically and nobly testified to the greatness of the city. The congregation of the Evangelical Lutheran St. Anna’s Church was formed by Latvians, while the German congregation owned the Evangelical Lutheran St. Trinity Church built opposite the castle. Thus, ethnic and Christian stratification also characterized the urban compositional form. The German part of the city with two-storey stone houses was located closer to the historical residence of the duke’s residency castle, but the Latvian part of the city and its dwellings were about 300 m more distant from the German environment in the western part. There were wooden one-storey houses with double pitch roofs, covered with clay roof tiles [13; 2; 12].

The Anna's Church was as impressive in size as the Trinity Church, indicating that the ethnic composition of the city in the 18th century was similar. Both churches built in the eastern and western parts of the city marked the exact axis of urban planning, the parallel of which was formed by the bed of the drinking water canal. The east-west axis was formed by the road that led out of the city in a western direction or to the West Gate, where the dirt road to Dobele began with a medieval castle fortification by the Berze river. The east-west direction was the basis of the compositional axis of the historical buildings of Jelgava city. In its turn, the water canal formed a so-called blue / green axis with the rows of trees and gardens (Fig. 3, 6, 9) [2; 5; 13; 12].

![Figure 1](image1.png) **Figure 1.** The places of the city gate before the demolition of the walls in the 18th century [the authors’ diagram, 2020]

![Figure 2](image2.png) **Figure 2.** The roof landscape of the city historical buildings. Beginning of the 20th century [JVMM]
The western part of the territory of the old Jelgava suburb belonged to the city council or board. Due to the floodplain, construction has not taken place here. As a result, the place has retained its high ecological value until nowadays. On the cusp of the 19th / 20th century, the western territory of the city was formed as a place for the construction of out-of-town summer wooden houses. They belonged to the wealthiest segment of the city population [12].

Farther from the Western Gate, outside the former city wall, where was also the estate of Baron von Guenther's manor (Fig. 4, 5), which was adapted to the needs of the hospital at the end of the 19th century. Along with the expansion of the medical institution at the beginning of the 20th century, a sparse 2-storey wooden and brick building was formed next to the manor park, which served as separate hospital buildings and residential buildings for the hospital staff. The buildings are characterized by fachwerk facade design, as well as wooden lace decorations, window shutters and divided lites windows. The mentioned buildings (1990s) have partly preserved and together with the floodplain form a rich cultural and historical territory in the western part of the city, which connects to the upstream of the old dam (Fig. 7). The row of trees in the closed dam has preserved and forms a so-called green backbone, which not only connects two rivers (Svete and Driksa), but also serves as a green artery of the city. In the 20s-30s of the 20th century, the canal was filled because it created unsanitary conditions. A water tower was built in the city before the World War I, and water was supplied to the city by pumps [13; 5].

After deeper winters, the moisture of the Svete river (Fig. 8) remains for a long time in the spring, where migrant birds settle. A floodplain with the approximate area 10 km² on the right bank of the Svete river, behind the old Western Gate, today has preserved giant old willows, weeds and sedge bushes, marsh marigold shocks and old country road traces. Today, this picturesque place can be seen from the footbridges. The scheme attached to the study (Fig. 2.) shows the perimetric location of the territories of the former manors and the old roadside pubs at the end of the 19th century. The mentioned building plan of the city demonstrates the character of the street structure or the canvas, which clearly marks the historical part of the city during the period near the end of the 18th century, which on the western side of the city plan is formed by a pronounced circular line or the old protective canal bed around the city.
core. The scale of building, the width of the streets, the ditch system, the garden areas have survived until nowadays at Mazā Dambja, J. Asara, Kazarmes, Ausekļa, Kārļa and other streets.

In the 20s-30s of the 20th century, the section of the filled canal up to the old Western Gate has changed the nature of the perimetric building of the canal. Wooden buildings, which still existed in the 50s of the 20th century, have been dismantled and replaced by multistorey residential and industrial buildings. As a result, the building scale has disappeared. By filling of the canal, the street became wider, and its disproportion next to some old buildings is exaggerated [12].

The named axis of the east-west urban planning composition forms a stratification of a new building scale over the centuries. For example, looking at the east-west compositional axis in its western part, and the respective historical one-storey wooden buildings next to the Anna’s Church - in the 50s-60s of the 20th century the buildings were replaced by Stalin / Khrushchev 5-storey silicate brick boxes. In its turn, continuing the construction along the composition axis in the western direction - in the 70s-80s of the 20th century, 5-storey and 9-storey residential buildings were built, using the prefabricated panels. Thus, the east-west compositional axis reflects the historical nature of the city's development beyond the historic ring borderline [2; 3; 5].

Continuing the commenced radial building behind the former wall line, new development points are being sought in the city. The next gravity centre of the compositional axis of the west-east urban planning is the intersection with the designed city bypass road.

With the expansion of the city buildings in the 20th / 21st century along the mentioned compositional longitudinal axis of urban planning, a new multi-storey residential area is planned in the future, symbolically preserving the character of the old cultural and historical place. The historical semantics of the new Western Gate are marked by a new residential building, which with a tolerant height and a wooden construction solutions forms a shape-generating link with the above mentioned nature of the historical building. The course of the existing blue / green structure is maintained for the floodplain, wetland area, old willows at the waterlines [2; 3; 5].

Figure 7. Historical buildings around the Svete floodplain [author’s photo, 2021]

Figure 8. Svete river floodplain in spring [author’s photo, 2021]

Figure 9. Damja street – the bed of the filled canal [author’s photo, 2021]

Figure 10. Old Western Gate of the city and the new Western Gate [the authors diagram, 2021]
4. Western Gate in Jelgava

It has been found during the research process that nowadays Peter Calthorpe is promoting 7 principles that include building issues, which could be integrated into urban development in a more natural way [1]. On the other hand, a director of a Danish architects’ office BIG (Bjarke Ingels Group) Bjarke Ingels developed and introduced a new concept “hedonistic sustainability” related to visual quality and playfulness in the multifunctional outdoor urban environment. He has established an architectural strategy aimed at changing the quality of life area despite the sustainable construction practices [6; 12].

Based on research and data of historical materials, the research process shows that the project site was located outside the central part of Jelgava, when the city fortifications were created during Duke Jacob’s reign in the 17th century – a wall around the city, organizing the movement of the inhabitants of the city through 4 gates: The Anna’s Gate (on the present Pasta street near the John’s Church), the Little or War Gate (at those times, on Zaļā street), the Lake Gate (on the territory of the present Uzvaras street) and the Dobele Gate (on the territory of the present old city of Jelgava), which, in terms of localization, are directed towards Dobele city and the distance to the project site is about 12 minutes on foot [7; 8; 12]. The land plots included in the project site have been gradually built-up and defined for a particular type of use starting from the first half of the 20th century.

In general, nowadays the major part of the project site has no existing building, the inhabitants of the neighboring areas use it as a free, green walking area for daily purposes and walks. The owners of the plot have not specifically demarcated the project site, which is clearly visible and flat. Consequently, proceeding from the current situation regarding the functional zoning and land planning, it is necessary to solve the shortcomings identified in the project, which concern the visual spatial structure, its fragmentation and low quality, and further development of the existing buildings in a single system, see Figures 11.

![Figure 11. Western Gate area [author’s scheme, 2020]](image-url)

All the buildings of the repair service and the storages included in the project site should be considered as a low-quality temporary building with a perspective of transformation and development of completely new mixed buildings in line with the modern residential complex and the nature of the
urban life area. Assessing the visual aesthetic quality, the research process has shown that building in the analyzed area does not constitute a laconic, high-quality street front in any area of the project site.

A particularly expressionless and low-quality look can be viewed when entering Jelgava from Dobele side, Figure 12. Existing buildings are fragmented and poorly maintained. On the section of Dobele highway, the main accents and oversaturation by marketing billboards and posters were identified that visually degrade the general view of the street [11; 9].

The concept and the solutions of the project are based on the current issues of life quality and on the impact of the COVID-19 pandemic, which causes many architects and urban planners to reconsider and reshape the concepts and solutions of urban development that have been created so far. Consequently, to ensure high-quality, flexible, sustainable and multifunctional concepts corresponding to and capable of providing an appropriate urban environment considering the impacts and trends of the pandemic in the 21st century, it is necessary to reduce urban pollution by developing areas that are much closer to the nature, with a much higher emphasis on the quality and multifunctionality of the living area [9; 10].

Now the traditional models of life and work conditions are changing and the tendency of working from home is rapidly spreading. Thus, as long as the possibilities of technology and communication provide it, often we do not need to meet our colleagues physically, but what we need is a harmonious environment where everyone is able to stay and perform daily work, leaving old lifestyle models and approaches behind. The concept of the project “Rietumu vārti” (Western Gate) is based on relatively free and flexible aspects that can ensure sustainability by returning and underlying the natural environment in the city, promoting the development of new and common outdoor living environment and contributing to safe social communication among all the inhabitants while working, doing sports or taking rest throughout the whole 6.18 ha area of the territory. The concept of the project defines the multifunctionality of residential living space throughout the territory and ensures that the inhabitants can be creative, active and use public outdoor space in their daily lives. Therefore, one of the main tasks of the project is to create a residential building area that promotes and develops a nature-friendly, multifunctional outdoor space, functionally easy-to-use buildings and aesthetically high-quality living environment for each user, creating mutual interaction with the building structure. Based on the developed concept of outdoor space and buildings, a master plan of the territory has been designed, which forms a functional connection with the surrounding territory, urban landscape space, at the same time ensuring convenient and easy access to each building. Evaluating the theoretical research materials, the project has functionally planned multifunctional outdoor areas able to provide various activities for
all age groups in the large project site, while highlighting and marking modern residential development trends and approaches to urban structure, see Figure 13 [4].

Two large sectors can be distinguished in the territory which are mutually connected in the project in terms of the architectural spatial structure principle but defined and designed differently according to the type of their functional use. Considering the conditions of the current situation and the location of the adjacent buildings, as well as close location of the motorway in relation to the project site, the volume of the public construction has been identified in the area with high traffic intensity on Atmodas street, while the residential buildings are located in the recess plan of the territory. The residential structure of the Western Gate is dominating in the architectonic form of the buildings as the main function according to the type of use of the buildings, while the public building forms the secondary group of buildings.

The residential building sector of the Western Gate is designed as a single architectonic ensemble, ensuring that a unified image in the territory is not lost, which also marks historical aspects, placing residential buildings in parallel to Dobeles street and Aspazijas street, thus creating a perimeter building context in the urban environment. At the same time, the name of the residential building Rietumu vārti (Western Gate) is based on historical aspects, recalling the times of changes of Old Jelgava and the fortification gates created during the reign of Duke Jacob in the 17th century. According to the binding regulations No. 17–23 [11] adopted in Jelgava, the architectonic spatial structure of residential buildings is formed in horizontal building volumes, thus balancing the proportion between the human scale to the number and height of floors of residential buildings. At the first-floor level, public premises are planned that provide for various functions for every inhabitant of Rietumu vārti (Western Gate). Along Dobeles street and Aspazijas street, residential buildings on the 1st floor level are planned for sweets, souvenirs, fashion, jewellery shops, e-shops, tea houses and hairdressing services (Figure 14), but the 2nd and the 3rd floor levels are designed for the living areas with terraces and green roofs. In its turn, the residential buildings located at the designed water pond on the 1st floor level include lobbies with multifunctional use possibilities for every inhabitant, such as co-working rooms, board games rooms, warehouses, auxiliary rooms, bicycle and pram storage rooms, intercommunication rooms for various interests and activities, see Figure 15. Whereas, the building volume of the office building is planned as one of the main accents in the whole territory, which visually invites
visitors to explore the territory of Jelgava and various activities that the living space of the city can provide. The building has different general front views, but at the same time it preserves a unified overall visual image throughout the project site.

On the 2nd floor level, the building volume is functionally connected with the rest of the project construction, providing an easy and functionally convenient access from the place of residence to work and back. Wooden structures have been used in the project for all the planned buildings. It is planned to use CLT wood panels (Cross Timber Systems) for residential development, which is a new and modern local building material in construction produced from large-sized glued solid wood panels. The project's landscaping solution includes the use of various materials and a multifunctional assortment of amenity elements. In accordance with the specific features of the zones and the solutions used for the territory, mutually consistent materials corresponding to the urban environment conditions have been selected. Variations of the materials used for the territory improvement are planned in accordance with visual images of the buildings, creating a unified, functionally convenient living space for every user. The amenities and the structure of greeneries planned in the residential building Rietumu vārti (Western Gate) would provide and create the features of the place identity and a sense of belonging for each of its inhabitants. Visual aesthetic qualities, accents, elements in a multifunctional outdoor space and the solutions of wooden architecture project concept would ensure the structure of the urban environment that meets the requirements and trends of the 21st century, increasing and improving the quality of living space in Jelgava [4].

5. Conclusions
A new or a prospective building of the Western Gate will implement its role as an architectonical spatial accent upon the completion of works on the construction of the city bypass road – the North and South bridges over the Lielupe in the eastern part of the city. With the completion of the spatial dual ring of urban planning – the historical wall line and the new bypass line – the blue / green territory will enter the infrastructure of the urban space more pronouncedly.

Of course, a serious traffic load of the bypass road will be generated, which intensity near the current peace and homogeneity of the floodplain will disrupt the harmony of the western part of the suburbs in terms of both ecological and cultural-historical aspect. Considering the intensity load of the urbanization density (transport, services, production), in the course of the 21st century new technological solutions will have to be found. The traffic load is currently pulsing through the described historical part of the city along the east-west compositional axis.

The projected multistorey residential area of the New West Gate makes a high contribution to the aesthetic quality of the city, as it forms a strong cultural-historical and ecological link. The architectonic spatial structure defines and highlights important functions that form a connection with territories of different nature, highlighting certain features in urban planning. A reasonably elaborated and evaluated planning approach to modern residential areas is based on functionality, which must be assessed and understood when designing new multifunctional outdoor spaces. Elimination of negative aspects in the residential development areas that affect the development of multifunctional outdoor space requires an appropriate approach and solutions able
to reduce the impact on the environment. Therefore, it is necessary to ensure and integrate the basic principles of sustainable development in modern residential development areas, creating long-term work process planning and appropriate living conditions for the users of the areas and for the future generations in the development of both buildings and multifunctional outdoor space.

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