

**WP 3** Urban Development

# Integrated urban development concept for the Jelgava TA

## SUMMARY

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City of Jelgava



## Table of Contents

Energoefficiency .....	4
Urban structure .....	5
Historic development/ sites and buildings .....	5
Urban structure.....	5
Vision for territory development .....	8
Solutions for integrated development of the territory.....	8
Priorities .....	11
Main areas of action and tasks to be addressed .....	12
Imprint .....	15

Jelgava is located in the central part of Latvia - in the north of Zemgale's lowland, at both costs of the second biggest river of Latvia - Lielupe. Jelgava is the fourth biggest city of Latvia in the size of area, both in number of inhabitants. Jelgava is Zemgale's planning region's center of national importance. The geographical location and the point of intersection for main roads have encouraged developing Jelgava as one of the most important centers of transit. There are five railways and six motor highways intersecting in Jelgava. Trough the center of the city flows river Lielupe which makes a 5km long branch of the river in the area of Jelgava called Driksa. There are also other rivers flowing through the city as Platone, Svēte, Driksa, and at the border of the city two more - Iecava and Vircava. The city center is located in the central part of the territory and its area is about 170 ha. The city center has a significant role as the business card of Jelgava, both as the center of transactions, services and transit.

The number of inhabitants has decreased in the last years. By 31<sup>st</sup> of December, 2010 there were 64 898 inhabitants declared in Jelgava. (In the year of 2008 - 65 510; 2007 - 65 644)

The density of population in Jelgava is 1 076 inhabitants per km<sup>2</sup>. In the area of the city center live about 20 630 persons or 1/3 (one third) from all inhabitants of Jelgava. The level of persons in giving age in Jelgava is rather high - 66, 9% (year 2009). The balance of migration is negative from the year 2007 till 2009.

The organization of traffic was established about 25 years ago, focusing on educational institutions, market places, individual housing schemes and mansion areas which are obsolete for today. There are missing alternatives for route transport transit. At the moment, the main road Riga's street - Liela's street - Dobeles freeway is too overloaded with transit and cargo transport that inconveniences traffic for public transport. Parking in area of the city center has become outstanding, especially in territories of public establishments and mansion areas. Driveways are very narrow, and parking places which are built in soviet time are not being able to provide the amount of private transport in nowadays.

In the area of the city center there is very developed net of consumer services, branch offices of biggest banks of Latvia and insurance agencies. There are also consultant offices of legal, marketing and IT issues. In Jelgava there can be seen a lots of culture events - shows, concerts, children song festivals, art, family and other activities, which are mostly located in the area of city center.

Historically Jelgava has been established as one of the Science and Research centers in Latvia. In Jelgava there is also located the third biggest Education and Science institution of the Republic of Latvia - the Latvia University of Agriculture (Latvijas Lauksaimniecības

Universitāte - LLU) where are studying students from every region of Latvia. In the city center of Jelgava there are other educational institutions - Jelgava Elementary School No.3, Jelgavas State gymnasium, Spidola's gymnasium, Jelgava Professional highschool, Jelgava Evening School, Jelgava Special Elementary school, Regional Educational Center for Adults, other private and municipality's preschool educational institutions and interest developing institutions.

In the city center there are founded several tourism and sightseeing objects. Some of them are Jelgava Ģ. Elias's museum of history and art, the castle of Jelgava which is built by the famous architect Rastrelli, in which is located Latvia University of Agriculture and a branch of Rundāle's castle "The sepulcher of the Duke of Kurzeme", also memorial museum of Ā. Alunāns is established nearly in the city center. Tower of the church of St. Trinity has been finished to modify and reconstruct as a tourism information center, a gallery for art and historical exhibitions and an observation desk.

## Energoefficiency

Dwelling houses in the city center are mostly built according to serial standard design. Average thermal energy consumption for heating in such houses is 166 kWh/m<sup>2</sup> per year.



Picture 1. City center territory structure

According to the results from buildings' technical inspection list the main weak points making huge thermal losses in houses are:



- Roof coverings in dwelling houses mainly are made without soft hydroisolation (damp-proof-course) and in some places they are already started to become dilapidated;
- As the result of stated construction defections in brick stone walls there were found gaps in walls;
- Thermal resistance of outer walls and roof does not meet the up-to-date standards;
- Wooden windows and doors also are low grade.

## Urban structure

### Historic development/ sites and buildings

After the World War II 90% of buildings in Jelgava were destroyed. The most important monuments relating to the pre-war history are: reconstructed museum - Academia Petrina, Tower of St .Trinity Church, part of the wooden architecture in old part of the city, Jelgava palace. Multi-storey residential buildings are built after the war. Buildings in the central part of the city were built in 50-60ies, but buildings in the periphery - in 70-80ies.

Such important cultural history heritage sites as museum (Academia Petrina) and Tower of St .Trinity Church are located in the TA. Great part of the territory is under protection as city building historical site of national importance.

### Urban structure

Monocentric structure with radical street network is characteristic to the city. After the war the city was renovated as an impersonal city, with heavy and boring soviet architecture. The essential problem of the compositional structure - impersonal city center (without any accent).

Dwelling districts in the city formed gradually, starting from the post-war period until the end of the 80ties. Dwelling districts that were built in Soviet times are too spacious, banal and impersonal, technological and construction quality is poor. Activities for improving quality of living environment should be introduced in almost all districts, however, the activities will differ due to construction years, type of construction, existing improvements and other factors that will be defined during the planning process.

During the 40ties the first multi-storey dwelling houses district was built in the central part of the city. Majority of houses were built as individual projects. In the 60ties construction



of houses of certain series was initiated. During that time multi-storey dwelling houses of 316 series were popular (with rather small flats) and such series houses are mainly located in the central part of the city.

In the 70ties, considering the fact that only few land plots remained unoccupied in the central part of the city, new territories were assigned in the periphery for construction of multi-storey dwelling blocks.

Total housing stock and location ~ 16 978 (TA-6857) flats (in 2008). Growth index of the housing stock - 1,7%(TA -0.4%). In 2009 one multi-storey residential building with 27 flats was launched into operation.

Number of apartments in the buildings, sorted by typology. (90,4%)-with 1 flat, (0,7%)-with 2 flats, (8,6%) with 3 or more flats, (0,3%) without division into flats - in 2008

Average dwelling space per resident in m<sup>2</sup> - 25 m<sup>2</sup> (in 2008)

Average living space in m<sup>2</sup> per housing unit - 60 m<sup>2</sup> (in 2008)

Average occupants per flat/household - 2,4

Percentage of buildings built before 1948 - 6%

Percentage of buildings built from 1948 to 1959 - 38%

Percentage of buildings built from 1960 to 1989 - 56%

Percentage of buildings built after 1990 - 1%

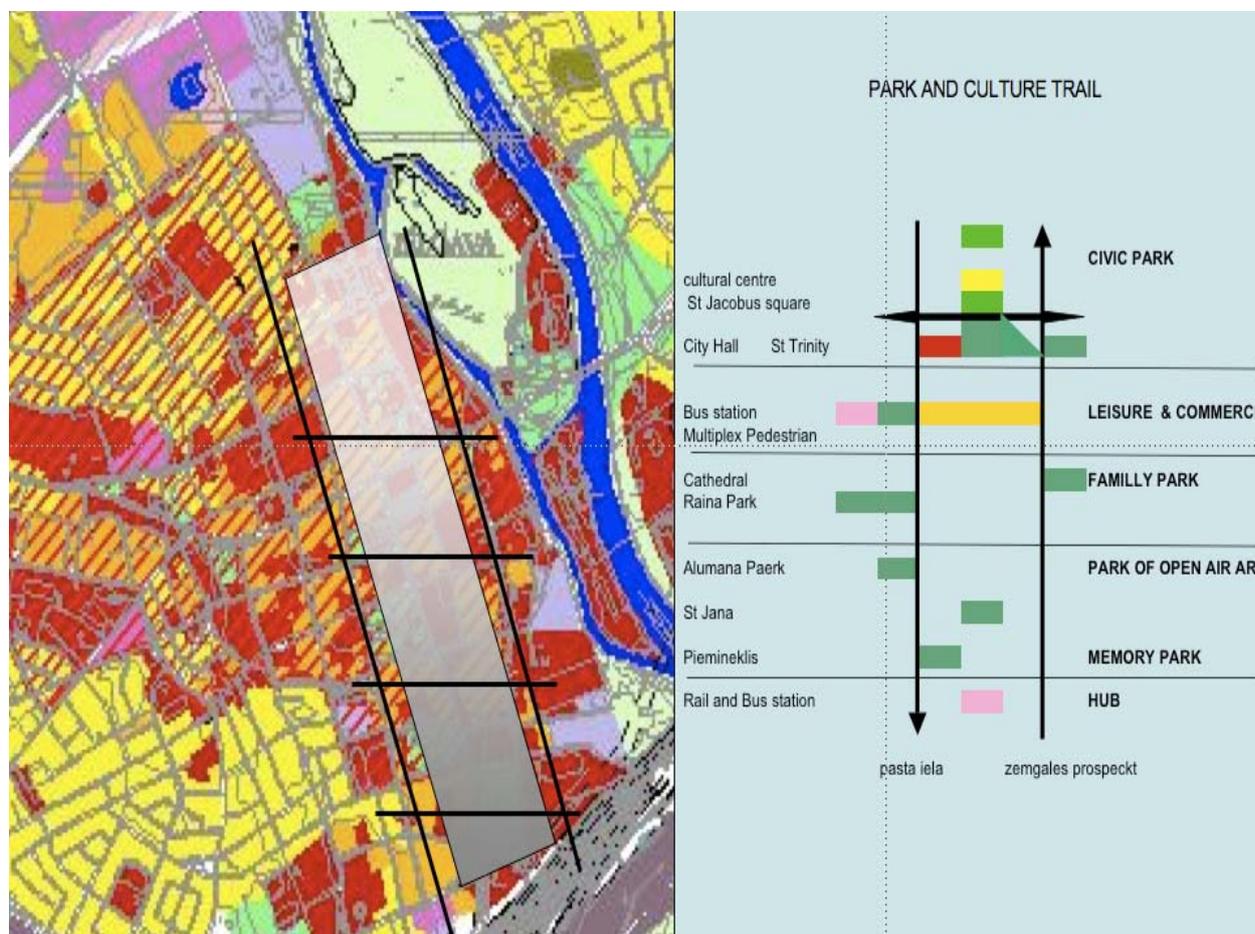
Percentage of single family houses, duplex - 56%

Percentage of multifamily houses/ apartment complex - 44%

Average costs for refurbishment (€/m<sup>2</sup>) - 300

Housing demand, considering the present economic situation - the offer exceeds demand approximately 5 times.

Evaluating architecture spatial structure of the central part of city we can separate such main axles as Zemgale prospect, Akademijas Street and Pasta Street with included dwelling districts; business and service territories; public space.



Picture 2. Schematic layout of city center. Source: INTa expert panel in Jelgava

There are state and municipal authorities, educational, medical, cultural and sports institutions, central bus station, city parks and squares located in different parts of city, as well there is railroad station located in the south part of Jelgava. Having all those institutions and organizations in the city allows to think that the local inhabitants are fully provided with accessibility of different services, recreation and relaxation possibilities. In total we can divide 23 separate dwelling districts in the central part of city, which are bounded with main roads and roads connecting districts form outside and inside.

## Vision for territory development

The Central part of Jelgava city shall be developed as appealing, attractive, healthy, sustainable and safe residential environment for all - people living in residential blocks, residents of the whole city and guests of the city. Territorial development shall be considered as a complex issue from economic, ecological, ergonomic and visual aspects. Considerable role in the structure of central city is allocated to recreational facilities.

Residential, business and administrative functions should be emphasized in the Jelgava city centre. Only concerted and symbiotical coexistence of all of these functions will provide for vital capacity of the city centre.

The main objective of integrated development is to create attractive and well developed residential environment, which would drive people to be associated with Jelgava city and to be proud for their city.

## Solutions for integrated development of the territory

Considering the spatial development of the city environment and improvement of residential environment quality, the following measures should be taken:

1. The compositional city centre should be emphasized as a main representational element.
2. Linear business centres should be created along Lielā and Pasta streets, where stand alone public objects, business objects on ground floors of residential buildings and public squares should be located.
3. Changes should be made in permitted use of territories, providing for relocation of all business objects out of inner quarters. Inner quarters should be used only to provide for residential function. Business and service objects should be placed only as standalone buildings or objects on ground floors of buildings accessible from streets of the city.
4. Inner blocks of multi-storey residential buildings should be developed as visually secluded areas, so that territories of such inner yards could be developed as quality

open air residential space mainly for residents of the block. Depending on the location these can be included as significant part of the city recreational system.

5. Unified recreational system should be developed, which should include existing parks, squares, embankments and newly created public outdoors, as well as improved space of inner quarters.
6. Organised pedestrian movement should be developed by prolonging Driksas street from Driksa krasts (bank) to Mātera street, and by including existing and to be built outer space. Bicycling should be promoted, by creation of devoted bicycling lanes and by expanding pedestrian walks.
7. The public transport nodes should be combined and relocated to the territory of railway station. The network of public transportation should be expanded, spacious parking lots should be developed by the public transport nodes.
8. Measures should be taken to increase energy efficiency of existing multi storey residential buildings and to improve visually artistic quality of these buildings.

From the structural point of view, functions of the city centre should be harmonized. Inner areas of residential quarters should be used only for the needs of residents, all business objects should be relocated outside of the inner quarters. Business objects should be located along the streets of the city.

It is important to join two existing transport nodes into one. Therefore the city centre will be relieved of unjustified traffic flow. Joining of railway and bus traffic nodes and creation of spacious parking lot will provide for much better facilities for use of these means of transportation.

Territories of multi storey residential buildings in the city centre should be viewed as both - residential space for residents of the quarters and at the same time also as an attractive and rich in function city centre.

In order to provide for clear and well read structure of the city centre, the existing buildings should be reconstructed, visual accents should be used in appearance of building in order to emphasise street crossings. Five storey buildings are dominant in the centre of the city, the human scale and spatial feeling of these should be preserved. Some additions are required on the detail level, which would create a unique image of each building and at the same time also a diverse space of the street.

Main permitted use of territories in the city centre is that of residential areas, associated objects of service, culture, education, administrative buildings and well kept public space,

as well as engineering infrastructure and utilities objects required for the above. While the residential function is considered to be a priority.

Availability of educational and culture facilities in the city centre is considered as sufficient. Additional objects would be required for leisure time of residents, development of creative abilities and offer of life-long education.

A range of unkempt public outdoor facilities is located in the Jelgava city centre, which are used only for organized public events. Therefore spacious outdoor facilities should be developed, where people could meet, relax, take part in cultural and social activities.

Important role is played by parking facilities in the city centre. At the moment large quantities of cars are parked in inner yards of residential blocks, where, according to solutions offered by our concept, quality inner yard space should be developed for recreation of residents. In order to solve this problem, intensification of existing parking lots should be implemented by introducing multi-level parking. Inner yards of quarters should be used only for parking of residents' cars in designated places.

Bicycling lanes should be introduced in the Jelgava city centre along with elements for parking of bicycles.

The actual engineering technical infrastructure supplies public objects and multi storey buildings located in the city centre with services required - water supply, collection of sewage waters, energy supply, heating supply, gas supply and collection of waste. However several preconditions exist, fulfillment of which would allow prolonging of useful life of buildings and increasing quality of services received.

Areas of inner quarters should be used only for recreational needs of residents of the block. Territory of inner quarter should provide feelings of safety, belonging and cosiness.

Perimeter style of construction is typical for Jelgava, which is mixed with areas of multi storey residential buildings; therefore yards of various nature are seen. The development proposal offers to distinguish three kinds of quarters:

- 1- locked quarters, with typical perimeter style of buildings and where more intimate space for residents of the quarter should be developed, allowing for by-passers to get a glimpse, at the same time without inviting them to stay longer;
- 2- partially open quarters, where intimate area should be kept for residents of the quarter, at the same time creating some space for visitors of the quarter;
- 3- open quarters, which include all parks and blocks, where public type buildings are dominant and quarters open by their very structure.

Significant role is allocated for maintenance not only of functional, but also aesthetic features of inner yards.

In order to safeguard psychological and physical safety, two groups of problems of various levels should be resolved:

1. The city structure should be developed as easily comprehensible, well understandable, such as to allow for ease of orientation in the city.
2. On the detailed level measures should be taken to ensure daily feeling of safety and security of residents. All streets should be lit, varying the intensity, colour and height depending on the kind and intensity of use in the particular section of the street.

Residents of the Jelgava city centre should be offered public recreational facilities in well arranged territories of the city and to certain extent private recreational facilities in inner yards of quarters. Therefore, inner yards should also be included in the recreational system of the city.

## Priorities

1. Quality of life of residents should be improved in the central part of the Jelgava city, increasing and improving level of recreational facilities in the territory, improving quality of air and creating safe environment for residents and visitors of the city, as well as paying special attention to the complex solution of improvement measures implemented for people with special needs.
2. Considering governmental targets in the area of energy efficiency, a separate section should be developed in the Jelgava City Development Plan regarding a complex of energy efficiency measures, providing that the best indicators efficiency of investment use could be reached, by simultaneously implementing measures of energy production, including, development of cogeneration, transmission, distribution and consumption sectors. Thus the energy loss in buildings and transmission systems can be decreased, energy production process can be optimised, consumption of fuel and other raw materials can be lowered, and the level of hazardous emissions can be decreased.

## Main areas of action and tasks to be addressed

It is important to provide complex solution to improvement and development of residential areas - the development plan of each particular residential area should be developed at first, considering its initial planning principles, original spatial composition concepts and by making harmonised additions to these in line with today's needs (public services, parking places, residential buildings), assessing contemporary development trends of small residential areas.

Along with development of transport system, complex solution for development measures of recreational facilities should be developed, considering the size and functions of existing and required green areas. When creating new recreational facilities in the city, needs of local residents should be assessed, as well as possible improvements of air quality in the urban environment.

In order to provide for balanced development of residential function, particular activities should be implemented aimed at improvement of residential conditions:

- structure of pedestrian streets and street with pedestrian priority should be improved,
- efficient housing management system should be ensured,
- construction elements should be renovated,
- efficiency of land use in quarters with relatively high number of ancillary buildings should be improved by removing low value buildings and using the space thus acquired for provision of publicly accessible outdoor facilities,
- inner space of quarters should be relieved of parking lots to the maximum possible extent. Where feasible, parking lots can be constructed underground, on the ground level (covering certain dark inner yards) or in separate multi level construction lots,
- the size of green areas and the maintenance level of inner yards of residential areas should be increased,
- maintenance and greenery activities should be implemented in yards of inner quarters, considering the depth of ground water levels, type of soil, dominant winds and other factors.

Tasks to be addressed in the area of energy efficiency are mainly concerned with improvements of public utilities infrastructure, prevention of inexpedient use of energy resources, as well as development of unified support policy for increasing of energy efficiency in buildings and systems of heating supply companies.

Energy efficiency measures are divided by the size of investment, repayment period and complexity of implementation. However, before taking on implementation of any investment requiring measure, the assessment of energy consumption or audit should be carried on.

The following measures should be included in the complex solution of energy efficiency measures:

- performance of energy audit in buildings and energy certification of buildings,
- increasing energy efficiency in multi storey buildings, promoting activity of apartment owners in the area of housing sustainability and efficient use of energy resources, at the same time ensuring improvement of quality of life of residents,
- increasing energy efficiency in state and municipal buildings, which at the same time would serve as an example for increasing of energy efficiency in the sector of energy consumers,
- information for energy consumers on energy efficiency measures and economic benefits available.

In the near future the city center will have a fascinating, attractive, healthy, durable and safe environment for massive mansions, private housings, both inhabitants and guests. Residential areas in the city center are demonstrated as a living area for inhabitants and at the same time it is forming a part of an attractive and featured city center.

There should be set clear and comprehensible structure of the city to provide qualitative and safe living space with accented city center and functional living territories.

Hercoga Jekaba square can be reconstructed as an attractive, presentable, vibrant place - full of different features organizing urban patten and supplementing it with works of art. Along by the streets Liela and Pasta there is forming a sub center for transactions where unified recreation system will be made with actual parks, squares, coasts and recently made public outdoor spaces, as well as courtyards of developments which could be included. Wide green areas in Jelgava give the opportunity to provide a high quality living in the city, and various short term entertainment activities in the city center. Movement of pedestrians could be organized on Driksa's Street. It is planned to make it longer - from the coast of river Driksa up to Matera Street, including actual and newly formed outdoor spaces.

It is necessary to unify and move the transport junction to the area of railway station to create an optimum transport system. Extensions of the public transport network, parking places at the junctions of public transport, are encouraging inhabitants and city quests to

use cycling. Creating special bikeways or extending pedestrian roads is essential for further development of city center.

According to the structure of the city, functional organization is to be made by relocating all transaction objects to inner yards of massive mansions. Transaction objects will be created in separate buildings or in the first floors of massive mansion buildings with an access from ambient streets.

The improvement of life quality is very important, which includes perfection of building's physical qualities, improvement of inner yards, and inclusion of human scale details in building facades and exterior elements. Improvement of dwelling houses energy efficiency and enhancement of visual quality of dwelling houses are to be done.

The main idea of integrated development is to establish an attractive and qualitative environment which creates the feeling of belonging to the city of Jelgava and makes proud of one's hometown.

## Imprint

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