

Aesthetics and Ecology in Planning of Urban Green Spaces of Latvia

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Abstract. Aesthetics and ecology in urban planning are opposed, especially in the case of landscape transformation without understanding the natural processes; it results in a conflict between aesthetic and ecological qualities because of specific features of human perception. The increase of anthropogenic load in large cities, interest in the use of ecological principles in planning of urban green spaces and factors of human perception of landscape preference were the reasons for choosing the topic of this research. The aim of the study was to carry out the assessment of ecological and aesthetical quality of urban green spaces. The research was divided in landscape inventory and quality assessment in selected urban green spaces. In this research landscape structure of Liepaja, Jelgava, Rezekne and Valmiera cities was analysed and 36 green spaces were selected for the research. This study includes the results of landscape inventory of the existing situation of green spaces. and the analysis of the data obtained in the landscape inventory of green spaces of four research cities. The results indicate that urban green spaces are strongly influenced by compositional unity, uniqueness, coherence with architecture, naturalness, typicality and use of native plants. Also the study did not reveal the individual regional characteristics accentuated in the plantings and design of urban green spaces. Green spaces selected for the study were divided in four groups according to the assessment of landscape aesthetic and ecological quality. Based on the research results, three different development models of urban green spaces were designed, which can be used for the development prospects in decision making. The main conclusion of the study is that in the future there should be detailed analysis of existing values and regional characteristics of urban green spaces by local municipalities. Planning documents of urban areas and green spaces should include the guidelines of increasing both aesthetic and ecological qualities and regional differences.

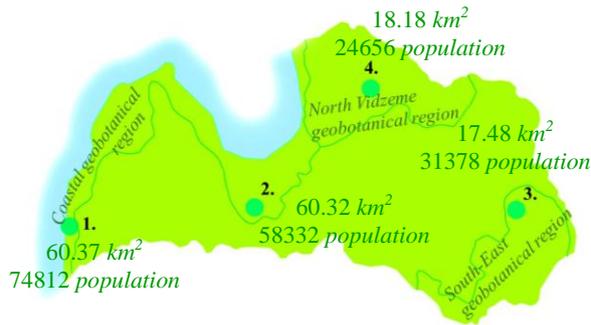
Keywords: urban green spaces, landscape assessment, urban landscape, landscape ecological and aesthetic quality, landscape structure of the cities.

Introduction

The study of aesthetic and ecological quality of urban green spaces carried out in this research points out the contributing factors of the problems in this area and potential ways to solve them. The study of aesthetic and ecological quality of urban green spaces carried out in the Thesis points out the contributing factors of the problems in this area and potential ways to solve them. The problems of urban landscape include the increase of hardscapes with low permeability, which reduces the proportion of natural areas and disturbs rainwater management in the city [17, 15]. Shaping of homogeneous planting reduces biodiversity, which conversely stimulates the extinction of certain plant and animal species [12, 6]. The lack of green spaces in urban settings increases air and water pollution, which results in a decline of climate regulation. The lack of natural sites gives a negative impact on human's mental and physical health [22, 9, 3, 4, 7]. Fragmentation of natural areas in urban environments decreases the proportion of ecologically valuable habitats and causes their isolation [5, 10, 16]. Specific features of human perception cause a conflict between nature and the human desire to influence it, such as improvement of natural areas to match up to the established aesthetic model [13, 14, 19, 21]. Pleasant and attractive landscape in urban environments is most often associated with human transformed rather than natural landscape.

Latvian cities have an opportunity to develop urban green space systems, using different financing funds from European and other regional countries, but the development of these areas have to be designed in accordance with various international laws and regulations, for example, *Convention Concerning the Protection of the World Cultural and Natural Heritage* (1972), *Convention on Biological Diversity* (1992) and *European Landscape Convention* (2000), thus the planned areas should be diverse, sustainable and well-managed, providing a qualitative life environment for both human and other living organisms. The research examines development possibilities of urban green spaces through the identification of the current situation, which can determine the necessity of maintenance and display of existing values, development direction of area as natural or artificial, and also improvement options for green space in order to provide multi-functionality of the particular city and neighbourhood.

The subject of research is aesthetic and ecological quality of urban green spaces, their use in sustainable urban public open space planning. The object of research for landscape aesthetic and ecological quality assessment is public green spaces of Latvia's large cities (Fig. 1) Liepaja, Jelgava, Rezekne and Valmiera – parks, squares, plazas, waterfront areas and street plantings.



1. Liepaja, 2. Jelgava, 3. Rezekne, 4. Valmiera.

Fig. 1. Location of selected cities in a map of Latvia [Source: created by M.Veinberga, 2016]

The aim of the study was to assess ecological and aesthetic quality of urban green spaces basing on the principles of sustainable landscape development and taking into consideration regional characteristics of the territories and specifics of the urban ecological environment. The main tasks stated were the following:

- to carry out a survey of urban green spaces in four cities: Liepaja, Jelgava, Rezekne and Valmiera;
- to analyze landscape ecological and aesthetic quality of 36 urban green spaces in four different cities;
- to classify development models of green spaces for optimal use of landscape aesthetic and ecological qualities.

Materials and Methods

For the study four of Latvia's large cities were selected from different geographical and geobotanical areas with regional characteristics. The selected cities are comparable in terms of population and area: Jelgava with Liepaja and Rezekne with Valmiera. In the research study, 36 different urban green spaces were selected (parks, squares, plazas and waterfront areas). Parks were defined as green spaces that occupies an area from 2,1 to 50 ha, but squares includes an area from 0,1–2,0 ha, plaza is an urban green space, which is mainly used for public events and dominated by lawn or hardcover. Waterfront areas are located on banks of waterfronts or waterbodies mainly consisting of plantings and natural vegetation. Most of the parks of cities selected for study include natural topography or historical object that acts as the node of green network. Plazas are located in the main intersections of roads and they are dominated by ornamental hard cover for public events, recreational and landscape features. Squares are located by the secondary roads, usually densely closed with trees and other groups of plants for passive recreation. Waterfront areas are located on the banks of lakes and rivers, they are

mainly covered with plants and natural vegetation that provides access to water, protection from environmental pollution and landscape and biological diversity of urban area.

In the selected cities a landscape inventory and assessment of ecological and aesthetic quality of urban green spaces were carried out. Landscape description was carried out in the framework of landscape inventory using value allocation of certain landscape features dependent on specific criteria [1, 32, 33; 2, 10, 11]. Overall, the study surveyed 16 parks, 10 squares, 6 plazas and 4 waterfront areas in four Latvian large cities. Landscape assessment matrix contains the description of what the green space should look like to get the different score for all of the criteria in five grade system (Table 1). Each criterion is expressed in distribution of five points, where additional value is given for specific rated factors. After the landscape inventory the obtained data were quantified using a landscape assessment matrix, in order to compare the data of different green spaces in different cities.

During the landscape inventory of green spaces in four selected cities – Liepaja, Jelgava, Rezekne, Valmiera – landscape description, collection of information and registration was carried out. During the development of research a number of photofixations in Liepaja, Jelgava, Rezekne and Valmiera was made in different periods of time: from July 2012 to September 2012, from August 2013 to October 2013 and from July 2014 to September 2014. Images of different parks, squares, street greenery and functional areas of cities were obtained at photofixation. Studies of current situation were repeated in green spaces, which were reconstructed or improved after summer of 2012 (all in all in 7 green territories). Landscape inventory matrix consisted of nine parts: general details about the green space and inventory, the description of landscape type, detected plant species, the assessment of constructed elements, the description of architecture, detected wild animals, management of landscape, elements of architectural landscape space and the function of the green space (Fig. 2).

Landscape inventory and assessment were based on 12 criteria selected from scientific literature. In order to avoid of the lack of research objectivity, the studies of landscape architecture should involve specialists from different disciplines (architects, landscape architects, ecologists, historians, geographers, regional planners). The selected criteria characterize aesthetics and ecology of green spaces, based on landscape surveys. The assessment methodology of the aesthetic and ecological quality of landscape is applicable in other landscape research, for example, for the assessment of courtyards of multi-storey residential buildings and plantings near public buildings.

TABLE 1

Transcript of assessment criteria of green spaces
[Source: construction by M.Veinberga]

Name of criterion	Grade	Recognized factor, that gives points
Compositional unity	1–2	Suitability of functional use
	1–2	Harmony of composition of design
	1	Visits to the area and engagement of people
Uniqueness	1–2	Difference from other areas
	1–2	Unique historical or natural elements
	1	Site has its story of traditions
Coherence with architecture	1–3	Coherence of height of buildings and plants
	1–2	Coherence of style of buildings and composition of the area
Maintenance and upkeep	1–5	The amount of signs of landscape care
Decorativeness of plants	1–3	Colourfulness of plants
	1	Bright and flowering plants
	1	Rare (exotic) plants
Condition of constructed elements	1–5	Proportion of qualitative elements versus worn and broken elements
Naturalness	1–2	Elements of natural shape
	1	Design composition is coherent with natural base
	1–2	Amount of plantings
Native plants	1–5	Proportion of native plant species
Typicality	1–2	Coherence with natural topography
	1–2	Plants characteristic to the region
	1	Specific landscape type
Vegetation structure	1–2	No vegetation or only trees
	1–2	2–3 types of plants found
	1	All types of plants found
Wild animals	1–5	The number of classes of animals (insects, birds, amphibians and reptiles, fish, mammals)
Wilderness	1–2	Wear and tear and lack of constructed elements
	1–2	Level of overgrown
	1	Presence of weeds

Results and Discussion

Landscape elements in city public spaces

The most part (78 %) of surveyed green spaces are flat. The surveyed areas according to their composition can be divided in four groups: figurative, linear, circular and without constructed elements. The most common type of layout is linear (found in 13 green spaces), while in the city of Jelgava the most common is figurative line created layout – 6 green spaces (total in 12 green spaces in all cities). The circular layout is typical to recently reconstructed squares and plazas, where it is marked by a central element. Composition and spatial planning of green space influence views, shading, sense of space and attractiveness of place. 20 of all surveyed green spaces are characterized by an open space, they are waterfront areas, plazas and squares with limited proportion of vegetation and reconstructed parks with new trees.

Particularity of green space is influenced by its difference from a traditional city park. It can be composition of original design, shade, various historical objects, old trees, peculiar natural conditions or the use of this area in the past that attach uniqueness and identity. Historicity and particularity is related with harmony of architecture and landscape. Some green spaces are historically

established next to significant architectural objects, while other areas are not designed according to the buildings in the area of green space. Several surveyed green spaces are limited by lines of buildings, therefore the height and shape of vegetation used in the area must be appropriate to the height of buildings. Rows of trees in built-up areas soften the building silhouettes. In the areas, which are limited by multi-storey buildings, accent to tall trees with large crowns are set up. These areas are located in districts of multi-storey buildings and city centre, which is characterized by public buildings. The height of trees in green spaces, which are limited with rows of private houses, is lower – appropriate to the height of buildings.

The city vegetation is dominated with alien plant species (92 % from all green spaces), because green spaces provide favourable conditions for growth and reproduction, however use of native plant species in public spaces is an important contribution to the conservation of species, society education and maintenance of regional specifics. 106 different species of trees, 80 bushes, 15 annuals and 55 perennials in surveyed 36 green spaces have been identified. Only 61 from all detected plant species

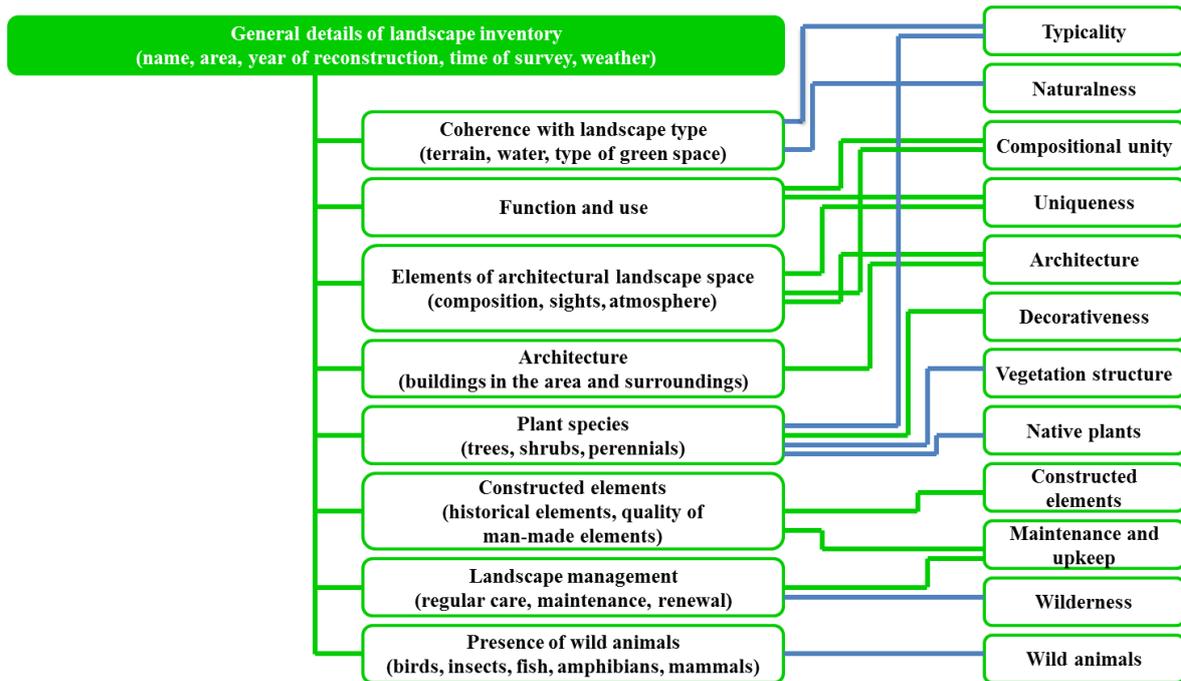


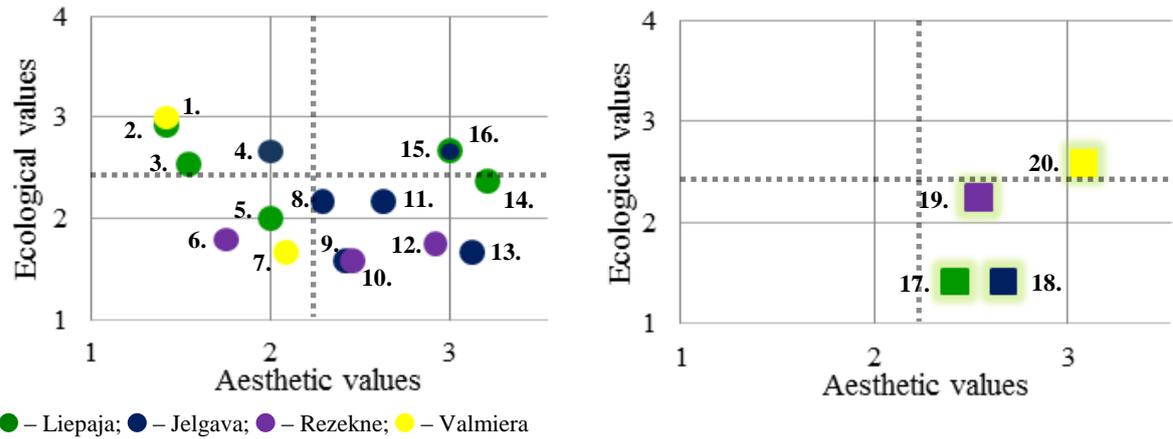
Fig. 2. Data obtained in inventory and their relation to assessment criteria
[Source: created by M. Veinberga]

were native. The dominant native species found in surveyed areas were *Tilia cordata*, *Acer platanoides*, *Quercus robur*, *Betula pendula*, *Fraxinus excelsior*, *Corylus avellana* and *Potentilla fruticosa*. Landscape inventory identified 41 very rare and unique foreign species of trees and bushes. Most of these species were located in old parks next to historical buildings. The research discovered regional characteristics of urban green spaces. Green spaces of Valmiera and Liepaja are dominated by pines (*Pinus*). Liepaja and Jelgava belong to one geobotanical region [25], but after the results of landscape inventory, plant structure of green spaces of Jelgava is similar to vegetation of Zemgale geobotanical region [20]. The most frequent composition of woody species of South-East and North Vidzeme geobotanical regions are similar [26, 27], still South-East region is slightly bare in terms of rough climate conditions.

The quality of constructed elements influences aesthetics and a visual impression of green space. As the result of a landscape inventory surveyed green spaces can be divided in four groups according to their quality of man-made elements. The first group includes new or reconstructed green spaces and old parks where landscape elements are maintained and restored: 76–100 % of identified constructed elements are of good quality. The second group consists of green spaces whose compositional design does not satisfy modern needs, but these areas are constantly improved, thus satisfying the aesthetic desire of city residents (50–75 % constructed elements are of good quality). The third group includes green spaces which have

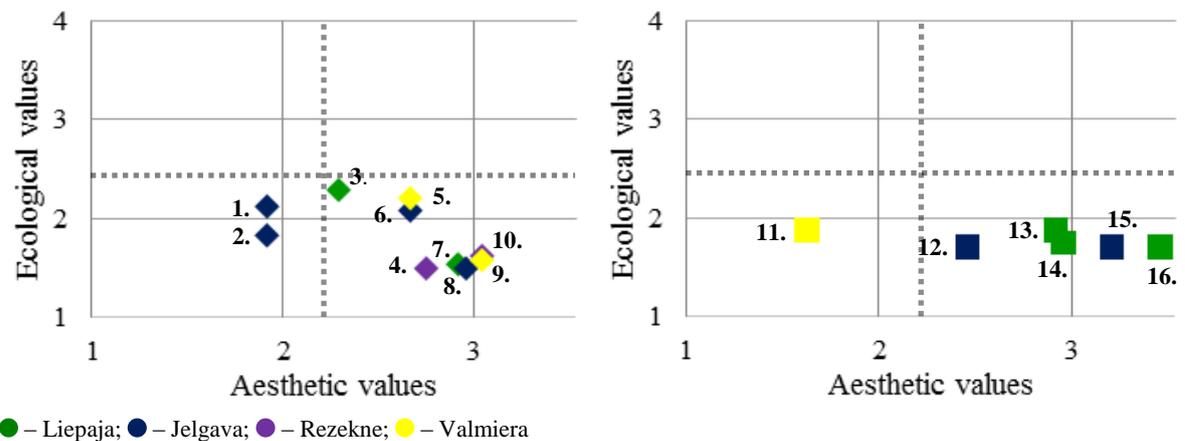
retained composition created in Soviet period and they need improvements and qualitative landscape elements (10–50 % constructed elements are of good quality). The last group are set up from green spaces without constructed elements and are left for the impact of natural processes. The condition of constructed elements is related to management and tidiness of green spaces. In areas which are regularly tended high quality elements remain, while in the unmanaged areas which are left for nature, constructed elements are outworn or even have disappeared. The research results of green space maintenance and care revealed that most of the green spaces are regularly maintained and tended. Almost all parks and squares which represent first three groups and are divided according to quality of constructed elements have mown lawns (30 green spaces), mulched plants (17 green spaces), shorn shrubs, new trees planted and flower beds created.

Topography and location of landscape elements of the city influence the landscape spatial structure. In the main centre of all selected cities one or few urban green spaces are located. Urban green space is determined by water bodies, watercourses and transport lines (roads, railways), which limit urban sprawl and configuration of green spaces. The structure of city is influenced by natural relief, especially in Rezekne and Valmiera, where the height difference between valleys of the river and the lake and other built-up parts of the city are very perceptible. Rezekne and Valmiera are very compact cities that are densely developed close to water and



1. Jānparks; 2. Dunikas ielas parks; 3. Karostas parks; 4. Valdekas ielas parks; 5. Ventspils ielas parks; 6. Ziemeļu rajona parks; 7. Vecpuišu parks; 8. Ā. Alunāna parks; 9. Uzvaras parks; 10. Kultūras un atpūtas parks; 11. Stacijas parks; 12. Festivāla parks; 13. Raiņa parks; 14. Jūrmalas parks; 15. Pils parks; 16. Raiņa parks; 17. Ostas promenāde; 18. Driksas promenāde; 19. Rēzeknes upes promenāde; 20. Dzirnauvu ezeriņš

Fig. 3. Average rating of parks and waterfront [Source: created by M. Veinberga]



1. Zvaigžņu ielas skvērs; 2. Kultūras nama skvērs; 3. Pļavu ielas skvērs; 4. Pareizticīgo baznīcas skvērs; 5. Lucas skvērs; 6. Ozolskvērs; 7. Kurzemes skvērs; 8. Vaļņu ielas skvērs; 9. Centra skvērs; 10. „Zeimuļš”; 11. Vienības laukums; 12. Hercoga Jēkaba laukums; 13. Gulbīšu dīķis; 14. Čakstes laukums; 15. Trīsvienības baznīcas laukums; 16. Rožu laukums

Fig. 4. Average rating of squares and plazas [Source: created by M. Veinberga]

transport nodes. The building boundary of Liepaja is influenced by Liepaja Lake, Tirdzniecības Canal and the coastal area. The centre of Jelgava includes a vacant green area, built-up areas are located on the left bank of the river, the building structure of the right bank of the river is scattered between natural areas. There are several vacant or underbuilt areas and neighbourhoods located in Liepaja and Jelgava.

Aesthetic and ecological quality of green spaces in urban environments

The selected research objects were analysed in different groups: parks, squares, plazas and waterfront areas. Green spaces were compared using the obtained value in two directions – ecology and aesthetics, creating a graphic connection. The most varied and wide data were observed in the group of parks.

The comparison of green spaces of all four cities shows distribution of four groups according to the obtained natural and artificial values: natural green spaces with evident ecological values (1), green spaces, which obtained low rating in both directions (2), attractive human transformed green spaces with aesthetic values (3) and green spaces, which satisfy both – the needs of nature and human desire (4) (Fig. 3 and Fig. 4). The assessment carried out in the Thesis shows that the average value of ecological quality from 3 to 5 points and aesthetic quality from 1 to 3 points characterizes natural green spaces – with a bit transformed natural base and abandoned plantings (the first group). The group of green spaces with an average aesthetic and ecological rating 1 to 3 points includes problematic green spaces, which should be re-planned and improved soon (the second group). Those are different squares, parks and plazas with

a compositional design created in the Soviet period. It is necessary to perform spatial re-planning with a modern landscape design using native plant species in these areas. Such green spaces are very common in small and medium towns of Latvia.

The average aesthetic quality rating from 3 to 5 points and ecological quality from 1 to 3 points are typical to the transformed and human influenced green spaces, where hardcover dominates over the amount of vegetation (the third group). Green spaces with high aesthetic quality are different squares and plazas with limited ecological values. Ecological quality of the environment can be improved by the diversity of native vegetation (wild flower plantings) and certain areas that are left for wildlife, using the principle of visible stewardship. The last group includes green spaces of average rating with aesthetics and ecology from 3 to 5 points (the fourth group). They are aesthetically and ecologically balanced green spaces with a focus on sustainable and harmonious maintenance of environment and characterize the examples described in the Thesis. It is possible to use this complex assessment in selecting direction of development for specific green space in the future – natural green space or human transformed green space, to determine the most appropriate, beneficial and necessary landscape design for the city, taking into account the existing aesthetic and ecological values of an area.

Planning of urban green spaces in modern Latvian cities

After carrying out the assessment of aesthetic and ecological quality of green spaces the author identifies three types of models that indicate the future development scenario of specific green space. The results outline three directions for landscaping of urban green spaces: 1) natural green space; 2) transformed man-made green space for areas with high anthropogenic load; 3) green space with use of landscape ecological design (Fig. 5).

The first model is characterized by wild plant species, feeling of untouched nature, use of natural materials in the design (wood, stone) in accordance with geobotanical region, different attraction places of wild animals. Informative signs for education and knowledge of visitors that include descriptions of current vegetation, wild animals and the importance of green space creating green structure of city should be placed. In such areas, if necessary, extensive care through the visual management is provided. This model is typical to parks because to create such planting there is a need for large area. The second model is the most common in the spatial landscape of Latvian cities. It is characterized by bright plantings (including diversity of annuals), wide use of foreign plants, artificial landscape design

elements, different synthetic materials (concrete, glass, polycarbonate, plastic etc.), large areas of hardcover. Regular intensive care and susceptibility to the impact of high anthropogenic load provided in this type of green spaces should be provided. This model is typical for plazas, squares, linear and geometrical parks, concrete waterfront areas. The third model is characterized by attractive native plant species (wildflower meadows), unique rare plants, landscape design that appreciate natural base, extensive care using the principle of visible stewardship. This type of green spaces is created as multifunctional landscape that provides operation of multiple ecosystem services, introduction of constructed wetlands, edible plant gardens, systems of water purification. This model is sustainable, restorative and regenerative. Each higher design approach requires larger material and financial investments for the creation of such green spaces, but their maintenance and upkeep consume less amount of energy than the maintenance of the second model in the force of high anthropogenic load.

The various groups of urban green spaces are characterized by different care and improvement. After the assessment of aesthetic and ecological quality of green spaces carried out in the Thesis connection between green spaces of selected cities and defined models was determined (Fig. 6). Selected cities are characterized by diverse green structure, which provides the presence of different types of green spaces in urban area. Selection of green spaces of four cities and their comparison revealed diversity of current green spaces within one city and necessity to conservation of this diversity and improvement of specific conditions. The knowledge acquired from literature review shows that development mission of green space is to preserve existing aesthetic and ecological values, searching for ways to highlight or connect them to the surrounding environment. The results of assessment of urban green space point out that inclusion of regional characteristics in landscape planning of green spaces of large cities is used incompletely.

Significant differences of assessment of aesthetic and ecological quality researched in the research in the context of four selected cities were not observed. However, there were some existing peculiarities of geobotanical region, topography and climate of an area and local architecture influenced by the location of the city. Major differences were detected by analysis of current vegetation and topography of green spaces. Landscape studies showed also minor differences of architectural space. All these determined regional characteristics influence the uniqueness and typicality criteria of the assessment methodology. Regional characteristics in the context

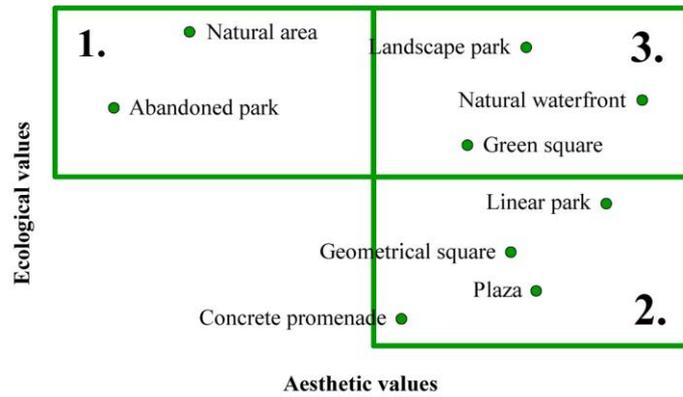


Fig. 5. Three development models of urban green spaces
[Source: created by M. Veinberga]

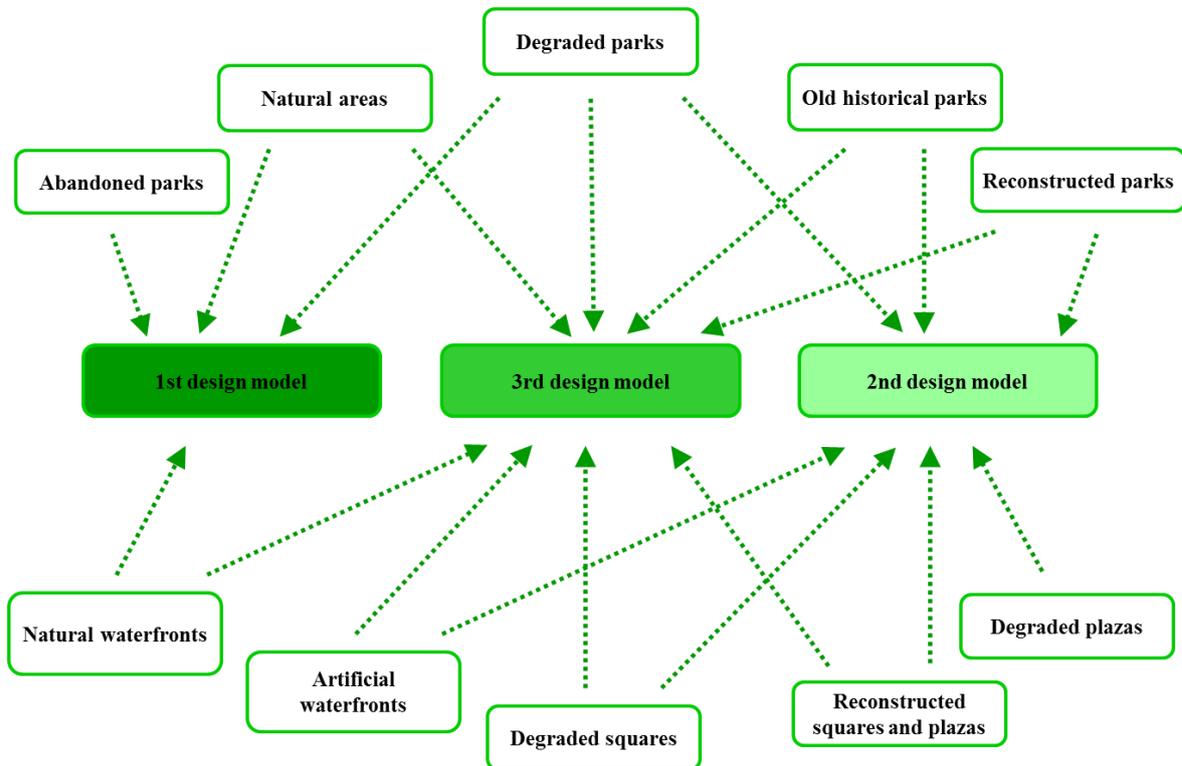


Fig. 6. The connection between development models and urban green spaces
[Source: created by M. Veinberga]

of culture and traditions of city residents in urban space were not observed as it could be observed in the studies of rural environment. The compositional and ecological character created in the Soviet period in the part of the green spaces has still remained. It was developed according to certain principles common to all Soviet Socialist Republics [23, 24]. By contrast, the main purpose of landscaping of new or reconstructed sites is fast and effective arrangement or maintenance of green space, using tested plant material and new landscape design

elements [8, 11, 18]. Green spaces of selected cities do not characterize highlighting of local traditions, historic environment and regional architecture that was observed in foreign examples. In a number of selected cities the historical environment and architecture following the destructive wars have not been preserved to the present day. It influences and complicates restoration and development of historic and traditional environment of green spaces.

Conclusions

Green spaces selected for the study were divided in four groups according to the assessment of landscape aesthetic and ecological quality: (1) natural plantings with high ecological value; (2) plantings with a low ecological and aesthetic quality; (3) human transformed traditionally visual aesthetic plantings; (4) aesthetically and ecologically high-quality plantings.

Green spaces with higher ecologic and aesthetic values are parks and waterfronts with a system of regular care. The highest ecological values represent natural, unmanaged and abandoned parks. Green space with old and non-functional design has the lowest ecological and aesthetic quality indicators. Low ecological and high aesthetic values characterize green spaces with new utilities or regular renewal of materials and landscape elements.

Upkeep and maintenance of green spaces is characterized by three development models, depending on the location of the territory and the intensity of use in the urban environment. Spatial development models of green spaces are natural green space; green space modified in the result of strong anthropogenic load and visually attractive created green space containing ecological principles. The third option of green space models is the most attractive and pleasant in the perception of respondents. Three formulated scenarios in the result of assessment of aesthetic and ecological quality can be used in designing of individual development scenarios of green spaces.

In the aspect of aesthetic and ecological quality of Latvian urban green space, limited inherent regional differences appear for each city with regard to geobotanics, topography and architecture of green spaces, as well as minor differences of landscape preferences in the context of four different city residents. Green spaces of the large cities are designed in accordance with various laws and regulations and planning documents the priorities of which do not indicate the preservation of regional characteristics and the specifics of wild environment. The regional aspect in the context of city did not fully appear, as it is discovered in other rural or forest landscape-related research. However, the examples in the context of other cities around the world indicate that the regional context is an important creator of aesthetic and ecological quality, as well as local identity of green spaces, which should be emphasized in the planning of green spaces in the cities of Latvia.

Several guidelines can be drawn out of the results of this study for planning and design: to recognize that there are different types of urban spaces in the city and to hold on to these differences, to highlight existing values of urban spaces, to maintain special features that are characteristic to this region or city, to draw attention to local plant species, to include different specialists in the planning process of urban area and to educate public in ecology, using different informative signs and activities.

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Kopsavilkums. Veiktais pētījums par pilsētu apstādījumu teritoriju estētiskajām un ekoloģiskajām kvalitātēm, norāda uz šīs jomas problēmu veicinošiem faktoriem un to risināšanas iespējām. Pētāmā problēma saistīta ar jautājumu – vai ekoloģiskie principi ir pietiekoši estētiski, lai tos varētu pilnvērtīgi izmantot pilsētas apstādījumu plānošanā. Latvijā lielajām pilsētām ir iespēja attīstīt apstādījumu sistēmas, izmantojot dažādus Eiropas un citu reģionu valstu finansējumu fondus, taču šo teritoriju attīstībai jābūt plānotai saskaņā ar dažādiem starptautiskajiem normatīvajiem aktiem, līdz ar to plānotajām teritorijām jābūt daudzveidīgām, ilgtspējīgām un labi pārvaldītām, nodrošinot kvalitatīvu dzīves vidi, gan cilvēkiem, gan citiem dzīvniekiem organismiem. Pētījumā apskatītas pilsētu apstādījumu teritoriju attīstības iespējas, izmantojot esošās situācijas apzināšanu, kā rezultātā var noteikt esošo vērtību saglabāšanas un uzsvēršanas nepieciešamību, teritorijas attīstības virzienu kā dabisku vai mākslīgu, tāpat apstādījumu teritorijas uzlabošanas iespējas, lai tādējādi nodrošinātu daudzfunkcionalitāti konkrētās pilsētas un tās apkaimes kontekstā.

Izvēlētais pilsētas raksturo daudzveidīga pilsētas zaļā struktūra, kas nodrošina dažādu tipu apstādījumu teritoriju klātbūtni pilsētvidē. Šo četru pilsētu apstādījumu teritoriju izvēle un to savstarpējais salīdzinājums atklājis vienas pilsētas ietvaros sastopamo apstādījumu teritoriju dažādību un nepieciešamību pēc šīs daudzveidības saglabāšanas un atsevišķu apstākļu uzlabošanas. Atsevišķu apstādījumu teritoriju grupu analīzes norādīja, ka visplašākais un atšķirīgākais iegūto vērtību rezultāts ir parku teritorijām. Skvēru analīzes rezultāti ir līdzīgi, taču augu sugu daudzveidība un veģetācijas struktūra ir samazināta, ņemot vērā teritoriju nelielos izmērus. Vairāki analizētie skvēri ir novecojuši, un tajos saglabāties padomju laika plānojums. Tas ir atstājis ietekmi gan uz ekoloģijas, gan estētikas novērtējuma kritērijiem. Laukumu analīze norādīja, ka cietā seguma apjoms un telpiskā funkcija samazina ekoloģiskās vērtības. Savukārt mākslīgo elementu daudzums un kārtība norāda uz apstādījumu teritorijas kompozicionālo sakārtotību, labiekārtojuma kvalitāti

un ainavas sakoptību. Ūdensmalu teritorijas var būt gan dabiskas, gan mākslīgas, pateicoties krasta līnijas izmaiņām. Apstādījumu teritoriju novērtējuma rezultāti norāda, ka lielo pilsētu apstādījumu teritorijās reģionālo īpatnību ietveršana apstādījumu plānošanā tiek izmantota nepilnīgi.

Pēc veiktās apstādījumu teritoriju estētiskās un ekoloģiskās kvalitātes novērtēšanas ir noteikti trīs veida modeļi, kas norāda uz konkrētās apstādījumu teritorijas nākotnes attīstības scenāriju. Apkopojot rezultātus, iezīmējas trīs virzieni pilsētas apstādījumu teritoriju labiekārtošanai: 1) dabiska apstādījumu teritorija; 2) pārveidota apstādījumu teritorija vietām ar augstu antropogēno slodzi; 3) veidotas apstādījumu teritorijas, kurās izmantoti ekoloģiskie principi. Pilsētā esošo dažādo apstādījumu teritoriju grupas raksturo atšķirīga kopšana un uzlabošana. Apstādījumu teritoriju esošās situācijas novērtējuma estētiskās un ekoloģiskās kvalitātes kontekstā, tika noteikta četrās pilsētās, novērtējot esošo apstādījumu teritoriju sasaisti ar formulētajiem modeļiem.